Technical Memorandum 2.1.4

Table of Contents

2.1.4 Estimated Crop Consumptive Use of Irrigation Water in the Platte River Basin in Wyoming

2.1.4.1 Introduction

2.1.4.2 Summary of irrigation water consumptive use calculation methodology

2.1.4.3 Reference evapotranspiration (ET_o)

2.1.4.3.1 Representative weather stations

2.1.4.3.2 Extraterrestrial solar radiation, R_A

2.1.4.3.3 Temperature data, T and TD

2.1.4.3.4 Wyoming calibration factor (WCF)

2.1.4.3.5 Reference evapotranspiration, ET_O, calculations - general

2.1.4.3.5.1 Reference evapotranspiration, ET_O – Above Pathfinder subbasin

2.1.4.3.5.2 Reference evapotranspiration, ET_O – Pathfinder to Guernsey subbasin

2.1.4.3.5.3 Reference evapotranspiration, ET_O – Guernsey to State Line subbasin

2.1.4.3.5.4 Reference evapotranspiration, ET_O – Upper Laramie subbasin

2.1.4.3.5.5 Reference evapotranspiration, ET_O – Lower Laramie subbasin

2.1.4.3.5.6 Reference evapotranspiration, ET_O – Horse Creek subbasin

2.1.4.3.5.7 Reference evapotranspiration, ET_O – South Platte subbasin

2.1.4.4 Crop coefficients (K_{CO})

2.1.4.5 Maximum evapotranspiration, $ET_{C(max)}$, values for individual crops

2.1.4.5.1 Maximum crop evapotranspiration, $ET_{C(max)}$) – Above Pathfinder subbasin

2.1.4.5.2 Maximum crop evapotranspiration, $ET_{C(max)}$) – Pathfinder to Guernsey subbasin

2.1.4.5.3 Maximum crop evapotranspiration, $ET_{C(max)}$) – Guernsey to State Line subbasin

2.1.4.5.4 Maximum crop evapotranspiration, $ET_{C(max)}$) – Upper Laramie subbasin

2.1.4.5.5 Maximum crop evapotranspiration, $ET_{C(max)}$) – Lower Laramie subbasin

2.1.4.5.6 Maximum crop evapotranspiration, $ET_{C(max)}$) – Horse Creek subbasin

2.1.4.5.7 Maximum crop evapotranspiration, $ET_{C(max)}$) – South Platte subbasin

2.1.4.6 Irrigated, harvested acres by crop and by subbasin

2.1.4.6.1 Assessing National Agricultural Statistics Service (NASS) cropping data

2.1.4.6.2 Geographic Information System (GIS) irrigated acreage data

2.1.4.6.3 Derivation of subbasin irrigated acreages for each crop

2.1.4.7 Adjusting maximum crop evapotranspiration, $ET_{C(MAX)}$

2.1.4.7.1 Average crop yield, Y_i

2.1.4.7.2 Envelope crop yield, Y_{env}

2.1.4.7.3 Crop response function, ky

2.1.4.7.4 Adjusted crop evapotranspiration, ET_C – Above Pathfinder subbasin

2.1.4.7.5 Adjusted crop evapotranspiration, ET_C – Pathfinder to Guernsey subbasin

2.1.4.7.6 Adjusted crop evapotranspiration, ET_C – Guernsey to State Line subbasin

2.1.4.7.7 Adjusted crop evapotranspiration, ET_C – Upper Laramie subbasin

2.1.4.7.8 Adjusted crop evapotranspiration, ET_C – Lower Laramie subbasin

2.1.4.7.9 Adjusted crop evapotranspiration, ET_C – Horse Creek subbasin

2.1.4.7.10 Adjusted crop evapotranspiration, ET_C – South Platte subbasin

2.1.4.8 Effective precipitation, R_e, and historical basin precipitation data

2.1.4.9 Consumptive use of irrigation water

2.1.4.9.1 Consumptive use of irrigation water – Above Pathfinder subbasin

2.1.4.9.2 Consumptive use of irrigation water – Pathfinder to Guernsey subbasin

2.1.4.9.3 Consumptive use of irrigation water – Guernsey to State Line subbasin

2.1.4.9.4 Consumptive use of irrigation water – Upper Laramie subbasin

2.1.4.9.5 Consumptive use of irrigation water – Lower Laramie subbasin

2.1.4.9.6 Consumptive use of irrigation water – Horse Creek subbasin

2.1.4.9.7 Consumptive use of irrigation water – South Platte subbasin

2.1.4.10 Conclusions

2.1.4.11 References

List of Tables

Note: Tables that contain parameter summaries from previous tables are shown in bold text.

Table 2.1.4.1	Summary – representative weather station data sources arranged by subbasin
Table 2.1.4.2	Summary – extraterrestrial solar radiation, R_A, values by subbasin
Table 2.1.4.3	Summary – Wyoming calibration factors (WCF)
Table 2.1.4.4	Summary – high stream flow, low stream flow, and normal or average stream flow years – Above Pathfinder subbasin
Table 2.1.4.5	Summary – reference evapotranspiration, ET_O, calculations – high flow years – Above Pathfinder subbasin
Table 2.1.4.6	Summary – reference evapotranspiration, ET_O, calculations – low flow years – Above Pathfinder subbasin
Table 2.1.4.7	Summary – reference evapotranspiration, ET_O, calculations – normal or average flow years – Above Pathfinder subbasin
Table 2.1.4.8	**Summary – reference evapotranspiration, ET_O, values – all flow years – Above Pathfinder subbasin**
Table 2.1.4.9	Summary – high stream flow, low stream flow, and normal or average stream flow years – Pathfinder to Guernsey subbasin
Table 2.1.4.10	Summary – reference evapotranspiration, ET_O, calculations – high flow years – Pathfinder to Guernsey subbasin
Table 2.1.4.11	Summary – reference evapotranspiration, ET_O, calculations – low flow years – Pathfinder to Guernsey subbasin
Table 2.1.4.12	Summary – reference evapotranspiration, ET_O, calculations – normal or average flow years – Pathfinder to Guernsey subbasin
Table 2.1.4.13	**Summary – reference evapotranspiration, ET_O, values – all flow years – Pathfinder to Guernsey subbasin**
Table 2.1.4.14	Summary – high stream flow, low stream flow, and normal or average stream flow years – Guernsey to State Line subbasin
Table 2.1.4.15	Summary – reference evapotranspiration, ET_O, calculations – high flow years – Guernsey to State Line subbasin
Table 2.1.4.16	Summary – reference evapotranspiration, ET_O, calculations – low flow years – Guernsey to State Line subbasin
Table 2.1.4.17	Summary – reference evapotranspiration, ET_O, calculations – normal or average flow years – Guernsey to State Line subbasin

Table 2.1.4.18 **Summary – reference evapotranspiration, ET_O, values – all flow years – Guernsey to State Line subbasin**

Table 2.1.4.19 Summary – high stream flow, low stream flow, and normal or average stream flow years – Upper Laramie subbasin

Table 2.1.4.20 Summary – reference evapotranspiration, ET_O, calculations – high flow years – Upper Laramie subbasin

Table 2.1.4.21 Summary – reference evapotranspiration, ET_O, calculations – low flow years – Upper Laramie subbasin

Table 2.1.4.22 Summary – reference evapotranspiration, ET_O, calculations – normal or average flow years – Upper Laramie subbasin

Table 2.1.4.23 **Summary – reference evapotranspiration, ET_O, values – all flow years – Upper Laramie subbasin**

Table 2.1.4.24 Summary – high stream flow, low stream flow, and normal or average stream flow years – Lower Laramie subbasin

Table 2.1.4.25 Summary – reference evapotranspiration, ET_O, calculations – high flow years – Lower Laramie subbasin

Table 2.1.4.26 Summary – reference evapotranspiration, ET_O, calculations – low flow years – Lower Laramie subbasin

Table 2.1.4.27 Summary – reference evapotranspiration, ET_O, calculations – normal or average flow years – Lower Laramie subbasin

Table 2.1.4.28 **Summary – reference evapotranspiration, ET_O, values – all flow years – Lower Laramie subbasin**

Table 2.1.4.29 Summary – high stream flow, low stream flow, and normal or average stream flow years – Horse Creek subbasin

Table 2.1.4.30 Summary – reference evapotranspiration, ET_O, calculations – high flow years – Horse Creek subbasin

Table 2.1.4.31 Summary – reference evapotranspiration, ET_O, calculations – low flow years – Horse Creek subbasin

Table 2.1.4.32 Summary – reference evapotranspiration, ET_O, calculations – normal or average flow years – Horse Creek subbasin

Table 2.1.4.33 **Summary - reference evapotranspiration, ET_O, values – all flow years – Horse Creek subbasin**

Table 2.1.4.34 Summary – high stream flow, low stream flow, and normal or average stream flow years – South Platte subbasin

Table 2.1.4.35 Summary – reference evapotranspiration, ET_O, calculations – high flow years – South Platte subbasin

Table 2.1.4.36 Summary – reference evapotranspiration, ET_O, calculations – low flow years – South Platte subbasin

Table 2.1.4.37	Summary – reference evapotranspiration, ET_O, calculations – normal or average flow years – South Platte subbasin
Table 2.1.4.38	**Summary – reference evapotranspiration, ET_O, values – all flow years – South Platte subbasin**
Table 2.1.4.39	Summary – monthly crop coefficients, K_{CO}
Table 2.1.4.40	**Summary – maximum crop evapotranspiration – Above Pathfinder subbasin**
Table 2.1.4.41	**Summary – maximum crop evapotranspiration – Pathfinder to Guernsey subbasin**
Table 2.1.4.42	**Summary – maximum crop evapotranspiration – Guernsey to State Line subbasin**
Table 2.1.4.43	**Summary – maximum crop evapotranspiration – Upper Laramie subbasin**
Table 2.1.4.44	**Summary – maximum crop evapotranspiration – Lower Laramie subbasin**
Table 2.1.4.45	**Summary – maximum crop evapotranspiration – Horse Creek subbasin**
Table 2.1.4.46	**Summary – maximum crop evapotranspiration – South Platte subbasin**
Table 2.1.4.47	Irrigated acres harvested by county during the period 1972 through 2001
Table 2.1.4.48	Summary – average irrigated, harvested acreages organized by county and by crop during the period 1972 through 2001
Table 2.1.4.49	Total areas of Wyoming counties located partially or entirely within Wyoming's Platte River Basin
Table 2.1.4.50	**Summary – Geographical Information System (GIS)-derived Platte River Basin irrigated agricultural acreages organized by county**
Table 2.1.4.51	**Summary – Geographical Information System (GIS)-derived Platte River Basin irrigated agricultural land organized by subbbasin**
Table 2.1.4.52	**Summary – Geographical Information System (GIS)-derived irrigated, harvested Platte River Basin lands organized by subbasin and crop**
Table 2.1.4.53	Crop response function, ky, values
Table 2.1.4.54	Area-weighted crop yields – Above Pathfinder subbasin
Table 2.1.4.55	Summary – adjusted maximum crop evapotranspiration, ET_C – high stream flow years – Above Pathfinder subbasin
Table 2.1.4.56	Summary – adjusted maximum crop evapotranspiration, ET_C – low stream flow years – Above Pathfinder subbasin
Table 2.1.4.57	Summary – adjusted maximum crop evapotranspiration, ET_C – normal or average stream flow years – Above Pathfinder subbasin

Table 2.1.4.58 **Summary – adjusted maximum crop evapotranspiration, ET_C – high, low, and normal or average stream flow years – Above Pathfinder subbasin**

Table 2.1.4.59 Area-weighted crop yields – Pathfinder to Guernsey subbasin

Table 2.1.4.60 Summary – adjusted maximum crop evapotranspiration, ET_C – high stream flow years – Pathfinder to Guernsey subbasin

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C – low stream flow years – Pathfinder to Guernsey subbasin

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C – normal or average stream flow years – Pathfinder to Guernsey subbasin

Table 2.1.4.63 **Summary – adjusted maximum crop evapotranspiration, ET_C – high, low, and normal or average stream flow years – Pathfinder to Guernsey subbasin**

Table 2.1.4.64 Area-weighted crop yields – Guernsey to State Line subbasin

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C – high stream flow years – Guernsey to State Line subbasin

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C – low stream flow years – Guernsey to State Line subbasin

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C – normal or average stream flow years – Guernsey to State Line subbasin

Table 2.1.4.68 **Summary – adjusted maximum crop evapotranspiration, ET_C – high, low, and normal or average stream flow years – Guernsey to State Line subbasin**

Table 2.1.4.69 Area-weighted crop yields – Upper Laramie subbasin

Table 2.1.4.70 Summary – adjusted maximum crop evapotranspiration, ET_C – high stream flow years – Upper Laramie subbasin

Table 2.1.4.71 Summary – adjusted maximum crop evapotranspiration, ET_C – low stream flow years – Upper Laramie subbasin

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C – normal or average stream flow years – Upper Laramie subbasin

Table 2.1.4.73 **Summary – adjusted maximum crop evapotranspiration, ET_C – high, low, and normal or average stream flow years – Upper Laramie subbasin**

Table 2.1.4.74 Area-weighted crop yields – Lower Laramie subbasin

Table 2.1.4.75 Summary – adjusted maximum crop evapotranspiration, ET_C – high stream flow years – Lower Laramie subbasin

Table 2.1.4.76 Summary – adjusted maximum crop evapotranspiration, ET_C – low stream flow years – Lower Laramie subbasin

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ET_C – normal or average stream flow years – Lower Laramie subbasin

Table 2.1.4.78 Summary – adjusted maximum crop evapotranspiration, ET_C – high, low, and normal or average stream flow years – Lower Laramie subbasin

Table 2.1.4.79 Area-weighted crop yields – Horse Creek subbasin

Table 2.1.4.80 Summary – adjusted maximum crop evapotranspiration, ET_C – high stream flow years – Horse Creek subbasin

Table 2.1.4.81 Summary – adjusted maximum crop evapotranspiration, ET_C – low stream flow years – Horse Creek subbasin

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C – normal or average stream flow years – Horse Creek subbasin

Table 2.1.4.83 Summary – adjusted maximum crop evapotranspiration, ET_C – high, low, and normal or average stream flow years – Horse Creek subbasin

Table 2.1.4.84 Area-weighted crop yields – South Platte subbasin

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C – high stream flow years – South Platte subbasin

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C – low stream flow years – South Platte subbasin

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C – normal or average stream flow years – South Platte subbasin

Table 2.1.4.88 Summary – adjusted maximum crop evapotranspiration, ET_C – high, low, and normal or average stream flow years – South Platte subbasin

Table 2.1.4.89 Summary – effective precipitation, R_e, calculation methods

Table 2.1.4.90 Consumptive use of irrigation water, CU_W, calculations – 1984 – high stream flow year – Above Pathfinder subbasin

Table 2.1.4.91 Consumptive use of irrigation water, CU_W, calculations – 1983 – high stream flow year – Above Pathfinder subbasin

Table 2.1.4.92 Consumptive use of irrigation water, CU_W, calculations – 1985 – high stream flow year – Above Pathfinder subbasin

Table 2.1.4.93 Consumptive use of irrigation water, CU_W, calculations – 1986 – high stream flow year – Above Pathfinder subbasin

Table 2.1.4.94 Consumptive use of irrigation water, CU_W, calculations – 1973 – high stream flow year – Above Pathfinder subbasin

Table 2.1.4.95 Consumptive use of irrigation water, CU_W, calculations – 1997 – high stream flow year – Above Pathfinder subbasin

Table 2.1.4.96	Consumptive use of irrigation water, CU_W, calculations – 2001 – low stream flow year – Above Pathfinder subbasin
Table 2.1.4.97	Consumptive use of irrigation water, CU_W, calculations – 1987 – low stream flow year – Above Pathfinder subbasin
Table 2.1.4.98	Consumptive use of irrigation water, CU_W, calculations – 1981 – low stream flow year – Above Pathfinder subbasin
Table 2.1.4.99	Consumptive use of irrigation water, CU_W, calculations – 1992 – low stream flow year – Above Pathfinder subbasin
Table 2.1.4.100	Consumptive use of irrigation water, CU_W, calculations – 1989 – low stream flow year – Above Pathfinder subbasin
Table 2.1.4.101	Consumptive use of irrigation water, CU_W, calculations – 1977 – low stream flow year – Above Pathfinder subbasin
Table 2.1.4.102	Consumptive use of irrigation water, CU_W, calculations – 1977 – normal or average stream flow year – Above Pathfinder subbasin
Table 2.1.4.103	Consumptive use of irrigation water, CU_W, calculations – 1974 – normal or average stream flow year – Above Pathfinder subbasin
Table 2.1.4.104	Consumptive use of irrigation water, CU_W, calculations – 1980 – normal or average stream flow year – Above Pathfinder subbasin
Table 2.1.4.105	Consumptive use of irrigation water, CU_W, calculations – 1982 – normal or average stream flow year – Above Pathfinder subbasin
Table 2.1.4.106	Consumptive use of irrigation water, CU_W, calculations – 1978 – normal or average stream flow year – Above Pathfinder subbasin
Table 2.1.4.107	Consumptive use of irrigation water, CU_W, calculations – 1996 – normal or average stream flow year – Above Pathfinder subbasin
Table 2.1.4.108	Consumptive use of irrigation water, CU_W, calculations – 1979 – normal or average stream flow year – Above Pathfinder subbasin
Table 2.1.4.109	Consumptive use of irrigation water, CU_W, calculations – 1999 – normal or average stream flow year – Above Pathfinder subbasin
Table 2.1.4.110	Consumptive use of irrigation water, CU_W, calculations – 1993 – normal or average stream flow year – Above Pathfinder subbasin
Table 2.1.4.111	Consumptive use of irrigation water, CU_W, calculations – 1975 – normal or average stream flow year – Above Pathfinder subbasin
Table 2.1.4.112	Consumptive use of irrigation water, CU_W, calculations – 1998 – normal or average stream flow year – Above Pathfinder subbasin
Table 2.1.4.113	Consumptive use of irrigation water, CU_W, calculations – 1988 – normal or average stream flow year – Above Pathfinder subbasin

Table 2.1.4.114 Consumptive use of irrigation water, CU_W, calculations – 1976 – normal or average stream flow year – Above Pathfinder subbasin

Table 2.1.4.115 Consumptive use of irrigation water, CU_W, calculations – 1972 – normal or average stream flow year – Above Pathfinder subbasin

Table 2.1.4.116 Consumptive use of irrigation water, CU_W, calculations – 1991 – normal or average stream flow year – Above Pathfinder subbasin

Table 2.1.4.117 Consumptive use of irrigation water, CU_W, calculations – 2000 – normal or average stream flow year – Above Pathfinder subbasin

Table 2.1.4.118 Consumptive use of irrigation water, CU_W, calculations – 1990 – normal or average stream flow year – Above Pathfinder subbasin

Table 2.1.4.119 Consumptive use of irrigation water, CU_W, calculations – 1994 – normal or average stream flow year – Above Pathfinder subbasin

Table 2.1.4.120 Summary – unit consumptive use, CU_W (inches) and total consumptive use (acre-feet) – Above Pathfinder subbasin

Table 2.1.4.121 Consumptive use of irrigation water, CU_W, calculations – 1983 – high stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.122 Consumptive use of irrigation water, CU_W, calculations – 1973 – high stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.123 Consumptive use of irrigation water, CU_W, calculations – 1981 – low stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.124 Consumptive use of irrigation water, CU_W, calculations – 1992 – low stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.125 Consumptive use of irrigation water, CU_W, calculations – 1985 – low stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.126 Consumptive use of irrigation water, CU_W, calculations – 1989 – low stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.127 Consumptive use of irrigation water, CU_W, calculations – 1984 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.128 Consumptive use of irrigation water, CU_W, calculations – 1986 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.129 Consumptive use of irrigation water, CU_W, calculations – 1988 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.130 Consumptive use of irrigation water, CU_W, calculations – 1991 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.131 Consumptive use of irrigation water, CU_W, calculations – 1972 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.132 Consumptive use of irrigation water, CU_W, calculations – 1978 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.133 Consumptive use of irrigation water, CU_W, calculations – 1980 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.134 Consumptive use of irrigation water, CU_W, calculations – 1974 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.135 Consumptive use of irrigation water, CU_W, calculations – 1976 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.136 Consumptive use of irrigation water, CU_W, calculations – 1975 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.137 Consumptive use of irrigation water, CU_W, calculations – 1977 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.138 Consumptive use of irrigation water, CU_W, calculations – 1982 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.139 Consumptive use of irrigation water, CU_W, calculations – 1979 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.140 Consumptive use of irrigation water, CU_W, calculations – 1987 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.141 Consumptive use of irrigation water, CU_W, calculations – 1990 – normal or average stream flow year – Pathfinder to Guernsey subbasin

Table 2.1.4.142 Summary – unit consumptive use, CU_W (inches) and total consumptive use (acre-feet) – Pathfinder to Guernsey subbasin

Table 2.1.4.143 Consumptive use of irrigation water, CU_W, calculations – 1986 – high stream flow year – Guernsey to State Line subbasin

Table 2.1.4.144 Consumptive use of irrigation water, CU_W, calculations – 1984 – high stream flow year – Guernsey to State Line subbasin

Table 2.1.4.145 Consumptive use of irrigation water, CU_W, calculations – 1985 – high stream flow year – Guernsey to State Line subbasin

Table 2.1.4.146 Consumptive use of irrigation water, CU_W, calculations – 1973 – high stream flow year – Guernsey to State Line subbasin

Table 2.1.4.147 Consumptive use of irrigation water, CU_W, calculations – 1972 – low stream flow year – Guernsey to State Line subbasin

Table 2.1.4.148 Consumptive use of irrigation water, CU_W, calculations – 1989 – low stream flow year – Guernsey to State Line subbasin

Table 2.1.4.149 Consumptive use of irrigation water, CU_W, calculations – 1990 – low stream flow year – Guernsey to State Line subbasin

Table 2.1.4.150 Consumptive use of irrigation water, CU_W, calculations – 1992 – low stream flow year – Guernsey to State Line subbasin

Table 2.1.4.151 Consumptive use of irrigation water, CU_W, calculations – 1974 – normal or average stream flow year – Guernsey to State Line subbasin

Table 2.1.4.152 Consumptive use of irrigation water, CU_W, calculations – 1983 – normal or average stream flow year – Guernsey to State Line subbasin

Table 2.1.4.153 Consumptive use of irrigation water, CU_W, calculations – 1988 – normal or average stream flow year – Guernsey to State Line subbasin

Table 2.1.4.154 Consumptive use of irrigation water, CU_W, calculations – 1982 – normal or average stream flow year – Guernsey to State Line subbasin

Table 2.1.4.155 Consumptive use of irrigation water, CU_W, calculations – 1987 – normal or average stream flow year – Guernsey to State Line subbasin

Table 2.1.4.156 Consumptive use of irrigation water, CU_W, calculations – 1979 – normal or average stream flow year – Guernsey to State Line subbasin

Table 2.1.4.157 Consumptive use of irrigation water, CU_W, calculations – 1976 – normal or average stream flow year – Guernsey to State Line subbasin

Table 2.1.4.158 Consumptive use of irrigation water, CU_W, calculations – 1980 – normal or average stream flow year – Guernsey to State Line subbasin

Table 2.1.4.159 Consumptive use of irrigation water, CU_W, calculations – 1977 – normal or average stream flow year – Guernsey to State Line subbasin

Table 2.1.4.160 Consumptive use of irrigation water, CU_W, calculations – 1978 – normal or average stream flow year – Guernsey to State Line subbasin

Table 2.1.4.161 Consumptive use of irrigation water, CU_W, calculations – 1981 – normal or average stream flow year – Guernsey to State Line subbasin

Table 2.1.4.162 Consumptive use of irrigation water, CU_W, calculations – 1975 – normal or average stream flow year – Guernsey to State Line subbasin

Table 2.1.4.163 Consumptive use of irrigation water, CU_W, calculations – 1991 – normal or average stream flow year – Guernsey to State Line subbasin

Table 2.1.4.164 Summary - consumptive use of irrigation water – Guernsey to State Line subbasin

Table 2.1.4.165 Consumptive use of irrigation water, CU_W, calculations – 1983 – high stream flow year – Upper Laramie subbasin

Table 2.1.4.166 Consumptive use of irrigation water, CU_W, calculations – 1986 – high stream flow year – Upper Laramie subbasin

Table 2.1.4.167 Consumptive use of irrigation water, CU_W, calculations – 1984 – high stream flow year – Upper Laramie subbasin

Table 2.1.4.168 Consumptive use of irrigation water, CU_W, calculations – 1992 – low stream flow year – Upper Laramie subbasin

Table 2.1.4.169 Consumptive use of irrigation water, CU_W, calculations – 2001 – low stream flow year – Upper Laramie subbasin

Table 2.1.4.170 Consumptive use of irrigation water, CU_W, calculations – 1987 – low stream flow year – Upper Laramie subbasin

Table 2.1.4.171 Consumptive use of irrigation water, CU_W, calculations – 1981 – low stream flow year – Upper Laramie subbasin

Table 2.1.4.172 Consumptive use of irrigation water, CU_W, calculations – 1977 – low stream flow year – Upper Laramie subbasin

Table 2.1.4.173 Consumptive use of irrigation water, CU_W, calculations – 1989 – low stream flow year – Upper Laramie subbasin

Table 2.1.4.174 Consumptive use of irrigation water, CU_W, calculations – 1997 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.175 Consumptive use of irrigation water, CU_W, calculations – 1973 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.176 Consumptive use of irrigation water, CU_W, calculations – 1979 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.177 Consumptive use of irrigation water, CU_W, calculations – 1996 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.178 Consumptive use of irrigation water, CU_W, calculations – 1982 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.179 Consumptive use of irrigation water, CU_W, calculations – 1995 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.180 Consumptive use of irrigation water, CU_W, calculations – 1978 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.181 Consumptive use of irrigation water, CU_W, calculations – 1980 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.182 Consumptive use of irrigation water, CU_W, calculations – 1974 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.183 Consumptive use of irrigation water, CU_W, calculations – 1999 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.184 Consumptive use of irrigation water, CU_W, calculations – 1993 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.185 Consumptive use of irrigation water, CU_W, calculations – 1985 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.186 Consumptive use of irrigation water, CU_W, calculations – 1988 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.187 Consumptive use of irrigation water, CU_W, calculations – 1975 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.188 Consumptive use of irrigation water, CU_W, calculations – 1998 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.189 Consumptive use of irrigation water, CU_W, calculations – 1972 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.190 Consumptive use of irrigation water, CU_W, calculations – 1976 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.191 Consumptive use of irrigation water, CU_W, calculations – 1990 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.192 Consumptive use of irrigation water, CU_W, calculations – 2000 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.193 Consumptive use of irrigation water, CU_W, calculations – 1991 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.194 Consumptive use of irrigation water, CU_W, calculations – 1994 – normal or average stream flow year – Upper Laramie subbasin

Table 2.1.4.195 Summary - consumptive use of irrigation water – Upper Laramie subbasin

Table 2.1.4.196 Consumptive use of irrigation water, CU_W, calculations – 1983 – high stream flow year – Lower Laramie subbasin

Table 2.1.4.197 Consumptive use of irrigation water, CU_W, calculations – 1984 – high stream flow year – Lower Laramie subbasin

Table 2.1.4.198 Consumptive use of irrigation water, CU_W, calculations – 1990 – low stream flow year – Lower Laramie subbasin

Table 2.1.4.199 Consumptive use of irrigation water, CU_W, calculations – 1994 – low stream flow year – Lower Laramie subbasin

Table 2.1.4.200 Consumptive use of irrigation water, CU_W, calculations – 1992 – low stream flow year – Lower Laramie subbasin

Table 2.1.4.201 Consumptive use of irrigation water, CU_W, calculations – 1989 – low stream flow year – Lower Laramie subbasin

Table 2.1.4.202 Consumptive use of irrigation water, CU_W, calculations – 1995 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.203 Consumptive use of irrigation water, CU_W, calculations – 1986 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.204 Consumptive use of irrigation water, CU_W, calculations – 1980 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.205 Consumptive use of irrigation water, CU_W, calculations – 1999 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.206 Consumptive use of irrigation water, CU_W, calculations – 1991 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.207 Consumptive use of irrigation water, CU_W, calculations – 2000 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.208 Consumptive use of irrigation water, CU_W, calculations – 1993 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.209 Consumptive use of irrigation water, CU_W, calculations – 2001 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.210 Consumptive use of irrigation water, CU_W, calculations – 1985 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.211 Consumptive use of irrigation water, CU_W, calculations – 1988 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.212 Consumptive use of irrigation water, CU_W, calculations – 1997 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.213 Consumptive use of irrigation water, CU_W, calculations – 1996 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.214 Consumptive use of irrigation water, CU_W, calculations – 1987 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.215 Consumptive use of irrigation water, CU_W, calculations – 1982 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.216 Consumptive use of irrigation water, CU_W, calculations – 1998 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.217 Consumptive use of irrigation water, CU_W, calculations – 1981 – normal or average stream flow year – Lower Laramie subbasin

Table 2.1.4.218 Summary - consumptive use of irrigation water – Lower Laramie subbasin

Table 2.1.4.219 Consumptive use of irrigation water, CU_W, calculations – 1986 – high stream flow year – Horse Creek subbasin

Table 2.1.4.220 Consumptive use of irrigation water, CU_W, calculations – 1984 – high stream flow year – Horse Creek subbasin

Table 2.1.4.221 Consumptive use of irrigation water, CU_W, calculations – 1985 – high stream flow year – Horse Creek subbasin

Table 2.1.4.222	Consumptive use of irrigation water, CU_W, calculations – 1973 – high stream flow year – Horse Creek subbasin
Table 2.1.4.223	Consumptive use of irrigation water, CU_W, calculations – 1972 – low stream flow year – Horse Creek subbasin
Table 2.1.4.224	Consumptive use of irrigation water, CU_W, calculations – 1989 – low stream flow year – Horse Creek subbasin
Table 2.1.4.225	Consumptive use of irrigation water, CU_W, calculations – 1990 – low stream flow year – Horse Creek subbasin
Table 2.1.4.226	Consumptive use of irrigation water, CU_W, calculations – 1992 – low stream flow year – Horse Creek subbasin
Table 2.1.4.227	Consumptive use of irrigation water, CU_W, calculations – 1974 – normal or average stream flow year – Horse Creek subbasin
Table 2.1.4.228	Consumptive use of irrigation water, CU_W, calculations – 1983 – normal or average stream flow year – Horse Creek subbasin
Table 2.1.4.229	Consumptive use of irrigation water, CU_W, calculations – 1988 – normal or average stream flow year – Horse Creek subbasin
Table 2.1.4.230	Consumptive use of irrigation water, CU_W, calculations – 1982 – normal or average stream flow year – Horse Creek subbasin
Table 2.1.4.231	Consumptive use of irrigation water, CU_W, calculations – 1987 – normal or average stream flow year – Horse Creek subbasin
Table 2.1.4.232	Consumptive use of irrigation water, CU_W, calculations – 1979 – normal or average stream flow year – Horse Creek subbasin
Table 2.1.4.233	Consumptive use of irrigation water, CU_W, calculations – 1976 – normal or average stream flow year – Horse Creek subbasin
Table 2.1.4.234	Consumptive use of irrigation water, CU_W, calculations – 1980 – normal or average stream flow year – Horse Creek subbasin
Table 2.1.4.235	Consumptive use of irrigation water, CU_W, calculations – 1977 – normal or average stream flow year – Horse Creek subbasin
Table 2.1.4.236	Consumptive use of irrigation water, CU_W, calculations – 1978 – normal or average stream flow year – Horse Creek subbasin
Table 2.1.4.237	Consumptive use of irrigation water, CU_W, calculations – 1981 – normal or average stream flow year – Horse Creek subbasin
Table 2.1.4.238	Consumptive use of irrigation water, CU_W, calculations – 1975 – normal or average stream flow year – Horse Creek subbasin
Table 2.1.4.239	Consumptive use of irrigation water, CU_W, calculations – 1991 – normal or average stream flow year – Horse Creek subbasin

Table 2.1.4.240	**Summary - consumptive use of irrigation water – Horse Creek subbasin**
Table 2.1.4.241	Consumptive use of irrigation water, CU_W, calculations – 1986 – high stream flow year – South Platte subbasin
Table 2.1.4.242	Consumptive use of irrigation water, CU_W, calculations – 1984 – high stream flow year – South Platte subbasin
Table 2.1.4.243	Consumptive use of irrigation water, CU_W, calculations – 1985– high stream flow year – South Platte subbasin
Table 2.1.4.244	Consumptive use of irrigation water, CU_W, calculations – 1973 – high stream flow year – South Platte subbasin
Table 2.1.4.245	Consumptive use of irrigation water, CU_W, calculations – 1972 – low stream flow year – South Platte subbasin
Table 2.1.4.246	Consumptive use of irrigation water, CU_W, calculations – 1989 – low stream flow year – South Platte subbasin
Table 2.1.4.247	Consumptive use of irrigation water, CU_W, calculations – 1990 – low stream flow year – South Platte subbasin
Table 2.1.4.248	Consumptive use of irrigation water, CU_W, calculations – 1992 – low stream flow year – South Platte subbasin
Table 2.1.4.249	Consumptive use of irrigation water, CU_W, calculations – 1974 – normal or average stream flow year – South Platte subbasin
Table 2.1.4.250	Consumptive use of irrigation water, CU_W, calculations – 1983 – normal or average stream flow year – South Platte subbasin
Table 2.1.4.251	Consumptive use of irrigation water, CU_W, calculations – 1988 – normal or average stream flow year – South Platte subbasin
Table 2.1.4.252	Consumptive use of irrigation water, CU_W, calculations – 1982 – normal or average stream flow year – South Platte subbasin
Table 2.1.4.253	Consumptive use of irrigation water, CU_W, calculations – 1987 – normal or average stream flow year – South Platte subbasin
Table 2.1.4.254	Consumptive use of irrigation water, CU_W, calculations – 1979 – normal or average stream flow year – South Platte subbasin
Table 2.1.4.255	Consumptive use of irrigation water, CU_W, calculations – 1976 – normal or average stream flow year – South Platte subbasin
Table 2.1.4.256	Consumptive use of irrigation water, CU_W, calculations – 1980 – normal or average stream flow year – South Platte subbasin
Table 2.1.4.257	Consumptive use of irrigation water, CU_W, calculations – 1977 – normal or average stream flow year – South Platte subbasin

Table 2.1.4.258 Consumptive use of irrigation water, CU_W, calculations – 1978 – normal or average stream flow year – South Platte subbasin

Table 2.1.4.259 Consumptive use of irrigation water, CU_W, calculations – 1981 – normal or average stream flow year – South Platte subbasin

Table 2.1.4.260 Consumptive use of irrigation water, CU_W, calculations – 1975 – normal or average stream flow year – South Platte subbasin

Table 2.1.4.261 Consumptive use of irrigation water, CU_W, calculations – 1991 – normal or average stream flow year – Horse Creek subbasin

Table 2.1.4.262 Summary - consumptive use of irrigation water – South Platte subbasin

Table 2.1.4.263 Summary – average calculated consumptive use of irrigation water during high, low, and normal or average stream flow in the seven subbasins of Wyoming's Platte River Basin

List of Figures

Figure 2.1.4.1	Basin Plan consumptive use calculation diagram
Figure 2.1.4.2	Representative weather station locations – Above Pathfinder Dam subbasin
Figure 2.1.4.3	Representative weather station locations – Pathfinder to Guernsey subbasin
Figure 2.1.4.4	Representative weather station locations – Guernsey to State Line subbasin
Figure 2.1.4.5	Representative weather station locations – Upper Laramie subbasin
Figure 2.1.4.6	Representative weather station locations – Lower Laramie subbasin
Figure 2.1.4.7	Representative weather station locations – Horse Creek subbasin
Figure 2.1.4.8	Representative weather station locations – South Platte subbasin
Figure 2.1.4.9	Irrigated areas – Above Pathfinder Dam subbasin
Figure 2.1.4.10	Irrigated areas – Pathfinder to Guernsey subbasin
Figure 2.1.4.11	Irrigated areas – Above Guernsey to State Line subbasin
Figure 2.1.4.12	Irrigated areas – Upper Laramie subbasin
Figure 2.1.4.13	Irrigated areas – Lower Laramie subbasin
Figure 2.1.4.14	Irrigated areas – Horse Creek subbasin
Figure 2.1.4.15	Irrigated areas – South Platte subbasin
Figure 2.1.4.16	Area-weighted annual barley yields and Y_{env} polynomial trend line and equation – Above Pathfinder subbasin
Figure 2.1.4.17	Area-weighted annual oats yields and Y_{env} polynomial trend line and equation – Above Pathfinder subbasin
Figure 2.1.4.18	Area-weighted annual spring wheat yields and Y_{env} polynomial trend line and equation – Above Pathfinder subbasin
Figure 2.1.4.19	Area-weighted annual winter wheat yields and Y_{env} polynomial trend line and equation – Above Pathfinder subbasin
Figure 2.1.4.20	Area-weighted annual sugar beet yields and Y_{env} polynomial trend line and equation – Pathfinder to Guernsey subbasin
Figure 2.1.4.21	Area-weighted annual alfalfa yields and Y_{env} polynomial trend line and equation – Guernsey to State Line subbasin
Figure 2.1.4.22	Area-weighted annual barley yields and Y_{env} polynomial trend line and equation – Guernsey to State Line subbasin
Figure 2.1.4.23	Area-weighted annual corn yields and Y_{env} polynomial trend line and equation – Guernsey to State Line subbasin

Figure 2.1.4.24 Area-weighted annual dry bean yields and Y_{env} polynomial trend line and equation – Guernsey to State Line subbasin

Figure 2.1.4.25 Area-weighted annual oats yields and Y_{env} polynomial trend line and equation – Guernsey to State Line subbasin

Figure 2.1.4.26 Area-weighted annual other hay yields and Y_{env} polynomial trend line and equation – Guernsey to State Line subbasin

Figure 2.1.4.27. Area-weighted annual spring wheat yields and Y_{env} polynomial trend line and equation – Guernsey to State Line subbasin

Figure 2.1.4.28 Area-weighted annual sugar beet yields and Y_{env} polynomial trend line and equation – Guernsey to State Line subbasin

Figure 2.1.4.29 Area-weighted annual winter wheat yields and Y_{env} polynomial trend line and equation – Guernsey to State Line subbasin

Figure 2.1.4.30 Area-weighted annual alfalfa yields and Y_{env} polynomial trend line and equation – Upper Laramie subbasin

Figure 2.1.4.31 Area-weighted annual barley yields and Y_{env} polynomial trend line and equation – U pper Laramie subbasin

Figure 2.1.4.32 Area-weighted annual oats yields and Y_{env} polynomial trend line and equation – Upper Laramie subbasin

Figure 2.1.4.33 Area-weighted annual other hay yields and Y_{env} polynomial trend line and equation – Upper Laramie subbasin

Figure 2.1.4.34 Area-weighted annual alfalfa yields and Y_{env} polynomial trend line and equation – Lower Laramie subbasin

Figure 2.1.4.35 Area-weighted annual barley yields and Y_{env} polynomial trend line and equation – Lower Laramie subbasin

Figure 2.1.4.36 Area-weighted annual corn yields and Y_{env} polynomial trend line and equation – Lower Laramie subbasin

Figure 2.1.4.37 Area-weighted annual dry beans yields and Y_{env} polynomial trend line and equation – Lower Laramie subbasin

Figure 2.1.4.38 Area-weighted annual oats yields and Y_{env} polynomial trend line and equation – Lower Laramie subbasin

Figure 2.1.4.39 Area-weighted annual other hay yields and Y_{env} polynomial trend line and equation – Lower Laramie subbasin

Figure 2.1.4.40 Area-weighted annual spring wheat yields and Y_{env} polynomial trend line and equation – Lower Laramie subbasin

Figure 2.1.4.41 Area-weighted annual sugar beets yields and Y_{env} polynomial trend line and equation – Lower Laramie subbasin

Figure 2.1.4.42 Area-weighted annual winter wheat yields and Y_{env} polynomial trend line and equation – Lower Laramie subbasin

Figure 2.1.4.43 Area-weighted annual alfalfa yields and Y_{env} polynomial trend line and equation – Horse Creek subbasin

Figure 2.1.4.44 Area-weighted annual barley yields and Y_{env} polynomial trend line and equation – Horse Creek subbasin

Figure 2.1.4.45 Area-weighted annual corn yields and Y_{env} polynomial trend line and equation – Horse Creek subbasin

Figure 2.1.4.46 Area-weighted annual dry beans yields and Y_{env} polynomial trend line and equation – Horse Creek subbasin

Figure 2.1.4.47 Area-weighted annual oats yields and Y_{env} polynomial trend line and equation – Horse Creek subbasin

Figure 2.1.4.48 Area-weighted annual other hay yields and Y_{env} polynomial trend line and equation – Horse Creek subbasin

Figure 2.1.4.49 Area-weighted annual spring wheat yields and Y_{env} polynomial trend line and equation – Horse Creek subbasin

Figure 2.1.4.50 Area-weighted annual sugar beets yields and Y_{env} polynomial trend line and equation – Horse Creek subbasin

Figure 2.1.4.51 Area-weighted annual winter wheat yields and Y_{env} polynomial trend line and equation – Horse Creek subbasin

Figure 2.1.4.52 Area-weighted annual alfalfa yields and Y_{env} polynomial trend line and equation – South Platte subbasin

Figure 2.1.4.53 Area-weighted annual barley yields and Y_{env} polynomial trend line and equation – South Platte subbasin

Figure 2.1.4.54 Area-weighted annual corn yields and Y_{env} polynomial trend line and equation – South Platte subbasin

Figure 2.1.4.55 Area-weighted annual dry beans yields and Y_{env} polynomial trend line and equation – South Platte subbasin

Figure 2.1.4.56 Area-weighted annual oats yields and Y_{env} polynomial trend line and equation – South Platte subbasin

Figure 2.1.4.57 Area-weighted annual other hay yields and Y_{env} polynomial trend line and equation – South Platte subbasin

Figure 2.1.4.58 Area-weighted annual spring wheat yields and Y_{env} polynomial trend line and equation – South Platte subbasin

Figure 2.1.4.59 Area-weighted annual sugar beets yields and Y_{env} polynomial trend line and equation – South Platte subbasin

Figure 2.1.4.60 Area-weighted annual winter wheat yields and Y_{env} polynomial trend line and equation – South Platte subbasin

List of Appendices

Appendix 2.1.4.A	Derivation of solar radiation (R_A) values
Appendix 2.1.4.B	Temperature data (unformatted)
Appendix 2.1.4.C	Temperature data (formatted)
Appendix 2.1.4.D	Yield evapotranspiration adjustment – Appendix G – 2001 Modified North Platte Decree "brown book"
Appendix 2.1.4.E	Precipitation data (unformatted and formatted)

Platte River Basin Water Plan
Technical Memorandum 2.1.4

SUBJECT: Platte River Basin Water Plan
Section 2.1.4 – Estimated Crop Consumptive Use of Irrigation Water in the Platte River Basin in Wyoming

PREPARED BY: Trihydro Corporation

DATE: September 1, 2005

PURPOSE: The Platte River Basin Plan is a planning tool developed for the Wyoming Water Development Office. It presents estimated current and estimated future uses of water in Wyoming's Platte River Basin. The Plan is not used to determine compliance with or administration of state law, federal law, court decrees, interstate compacts, or interstate agreements.

2.1.4 ESTIMATED CROP CONSUMPTIVE USE OF IRRIGATION WATER IN THE PLATTE RIVER BASIN IN WYOMING

2.1.4.1 Introduction

This section describes estimation of agricultural consumptive use of irrigation water in Wyoming's Platte River Basin during high stream flow, low stream flow, and normal or average stream flow years in each of the seven subbasins of Wyoming's Platte River Basin. Establishing a study period; modifying the study period in some subbasins due to limited availability of stream gauging data; and determining high stream flow, low stream flow, and normal or average stream flow years during the study periods in the seven Platte River Basin subbasins is discussed in Platte River Basin Water Plan Technical Memorandum 3.1, Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year Determination.

Based on the Wyoming Water Development Commission (WWDC) project work scope and discussions with the WWDC and the Wyoming State Engineer's Office (SEO), it was agreed that. the basic methodology outlined in Supreme Court (2001) would serve as the basis for the agricultural irrigation water consumptive use calculations in this basin plan technical memorandum. This was the methodology agreed to in the 2001 settlement of the Nebraska v. Wyoming Supreme Court lawsuit regarding flows of the North Platte River. The Supreme Court (2001) and subsequent consumptive use calculations by the SEO address consumptive use in the two main stem North Platte River subbasins that are located above Guernsey Dam, which correspond to the Above Pathfinder subbasin and the Pathfinder to Guernsey subbasin in this basin plan. As described below, basin plan unit consumptive use values, CU_W, for these two subbasins in units of inches of water were calculated on the basis of calibrated crop coefficients so that basin plan unit consumptive use values are very similar to those that can be derived from Supreme Court (2001) consumptive use data for these two subbasins. In addition, reported basin

plan total annual consumptive use values for these two subbasins in units of acre-feet per year are the same values as those that are reported in the Supreme Court (2001) and subsequently calculated by the SEO for study period years 2000 and 2001. Total consumptive use values are available in the Supreme Court (2001) through year 1999. Inclusion in this basin plan technical memorandum of Supreme Court (2001) and SEO total consumptive use values for the Above Pathfinder and Pathfinder to Guernsey subbasins is based on the fact that the Supreme Court (2001) and SEO values are the governing consumptive use values for these two subbasins in current and anticipated future discussions and negotiations regarding consumptive use of irrigation water in these two Platte River Basin subbasins.

2.1.4.2 Summary of Irrigation Water Consumptive Use Calculation Methodology

The irrigation water consumptive use calculation methodology used in this basin plan consists of:

Evapotranspiration calculations

- selecting representative weather stations in each of the seven Platte River Basin subbasins for which data from adequately long periods of record are available
- compiling meteorological data from these weather stations for the proposed 1972 through 2001 study period
- applying temperature data from the study period to calculate monthly reference evapotranspiration, ET_o, for the irrigation season months of April through September in each of the seven Platte River Basin subbasins
- determining monthly crop coefficients, K_{CO}, for each crop to be considered during the assumed six month irrigation season
- calibrating monthly crop coefficients, K_{CO}, for crops cultivated in the Above Pathfinder and Pathfinder to Guernsey subbasins so that calculated basin plan unit consumptive use values for these two subbasins were very similar to unit consumptive use values for these two subbasins that were derived from Supreme Court (2001) and SEO consumptive use calculations for these two subbasins
- applying calibrated Above Pathfinder subbasin monthly crop coefficients, K_{CO}, to Upper Laramie subbasin basin plan consumptive use calculations because of the topographic and climatologic similarities between these two subbasins
- multiplying monthly reference evapotranspiration, ET_O, by monthly crop coefficients, $K_{CO,}$ to obtain maximum monthly crop evapotranspiration, $ET_{C(max)}$, for each crop under consideration, for each month of the irrigation season, and in each subbasin
- adjusting maximum crop evapotranspiration values, $ET_{C(max),}$ on the basis of yield-adjusted, "fully-watered" crop evapotranspiration, ET_C

Effective precipitation

- calculating total effective precipitation, R_e, as the sum of effective precipitation during the six months prior to the irrigation season and for the six-month irrigation season and for each crop in each subbasin

Unit consumptive use calculations

- calculating unit consumptive use of irrigation water, CU_W, as the difference between adjusted evapotranspiration, ET_C, and effective precipitation, R_e ($CU_W = ET_C - R_E$)

Irrigated acres

- tabulating and assessing historical crop yield data for the 1972 through 2001 study period to determine the average portion of irrigated, harvested acreage for each crop under consideration in each county within the Platte River Basin
- estimating average 1972 through 2001 study period irrigated acreage for each crop cultivated in each subbasin on the basis of combined basin plan Geographic Information System (GIS) irrigated acreage data and historical county crop yield data
- reporting total irrigated acres for the Above Pathfinder and Pathfinder to Guernsey subbasins as shown in Supreme Court (2001) and subsequent SEO calculations

Total consumptive use – Above Pathfinder and Pathfinder to Guernsey subbasins

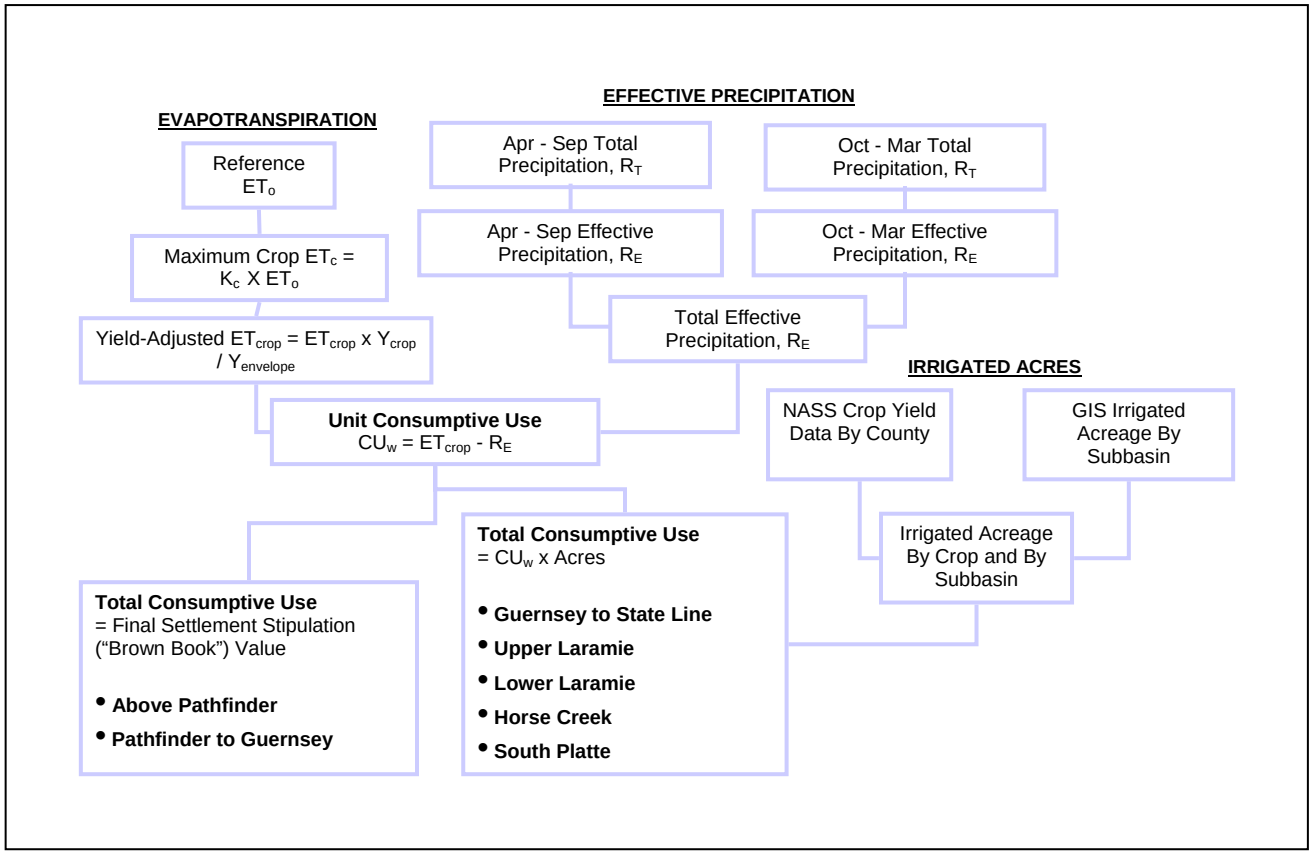
- reporting annual Supreme Court (2001) and subsequent SEO total annual consumptive use of irrigation water values during the study period in units of acre-feet per irrigation season during high stream flow, low stream flow, and normal or average stream flow years

Total consumptive use – Guernsey to State Line, Upper Laramie, Lower Laramie, Horse Creek, and South Platte subbasins

- calculating total consumptive use of irrigation water in units of acre-feet per irrigation season during high stream flow, low stream flow, and normal or average stream flow years for each crop under consideration in each subbasin as the product of unit consumptive use and estimated irrigated acreages (CU_W x Acres)

The consumptive use calculation methodology described above is shown in diagram format on Figure 2.1.4.1.

Figure 2.1.4.1
Basin Plan Consumptive Use Calculation Diagram



2.1.4.3 Reference Evapotranspiration (ET_o)

Evapotranspiration is the combined processes of water evaporation and transpiration. Transpiration is the conversion of water to water vapor by plant tissues. Evapotranspiration is therefore one of the key variables used to calculate consumptive use of irrigation water by crops.

Reference evapotranspiration, ET_o, is a calculated quantity of evapotranspiration in units of inches of water per month or per irrigation season for grass, the reference crop. ET_o is calculated using the Hargreaves equation:

$$ET_o = 0.0023 \times R_A \times TD^{0.5} \times (T + 17.8) \times (WCF) \qquad \text{(Equation 1)}$$

where:

R_A = extraterrestrial solar radiation, in units of inches of equivalent evaporation per month,

$TD^{0.5}$ = the square root of the difference between the maximum and minimum average air temperatures during the month(s) under consideration, in units of degrees Celsius (C),

T = the average air temperature during the month(s) under consideration, in units of degrees Celsius (C), and

WCF = a unitless Wyoming calibration factor that is applied to adjust the equation for calculating grass reference evapotranspiration, ET_O, for use in Wyoming.

2.1.4.3.1 Representative Weather Stations

Table 2.1.4.1 contains a summary of information regarding 14 representative weather stations that are located within subbasins of Wyoming's Platte River Basin from which climatological data were obtained for this study. Representative subbasin weather stations, the locations of which are shown on Figure 2.1.4.2 through Figure 2.1.4.8, were selected based on their locations and available periods of record. As shown in Table 2.1.4.1, more than one weather station per subbasin was used as a data source when feasible.

Table 2.1.4.1 Summary - representative weather station data sources arranged by subbasin

No.	Subbasin	Weather station name	Period of record obtained for this study
1	Above Pathfinder	Encampment 10 ESE	8/1/1948 - 10/31/1998
2		Saratoga 1 SSE	8/1/1948 - 10/7/2004
3		Medicine Bow	8/1/1948 - 7/31/2004
4		Muddy Gap	3/13/1950 - 7/30/2004
5	Pathfinder to Guernsey	Casper WSO AP	3/17/1950 - 10/16/2004
6		Glenrock 5 ESE	7/1/1941 - 6/28/2004
7		Douglas 1 ESE/Douglas	6/1/1909 - 10/6/2004, 8/1/1948 - 1/31/1995
8	Guernsey to State Line	Torrington Experimental Farm	1/1/1922 - 6/30/2004
9	Upper Laramie	Centennial 1 N	2/1/1899 - 7/31/2004
10		Laramie FAA Airport	8/1/1948 - 10/6/2004
11	Lower Laramie	Wheatland 4N	1/1/1893 - 6/30/2004
12	Horse Creek	LaGrange	8/1/1948 - 7/31/2004
13	South Platte	Cheyenne WSFO AP	1/1/1915 - 10/6/2004
14		Pine Bluffs 5 W/Pine Bluffs	1/1/1919 - 2/29/1988, 8/1/1948 - 7/31/2004

Note: Composite climatological data values were derived for subbasins for which data from more than one weather station was assessed.

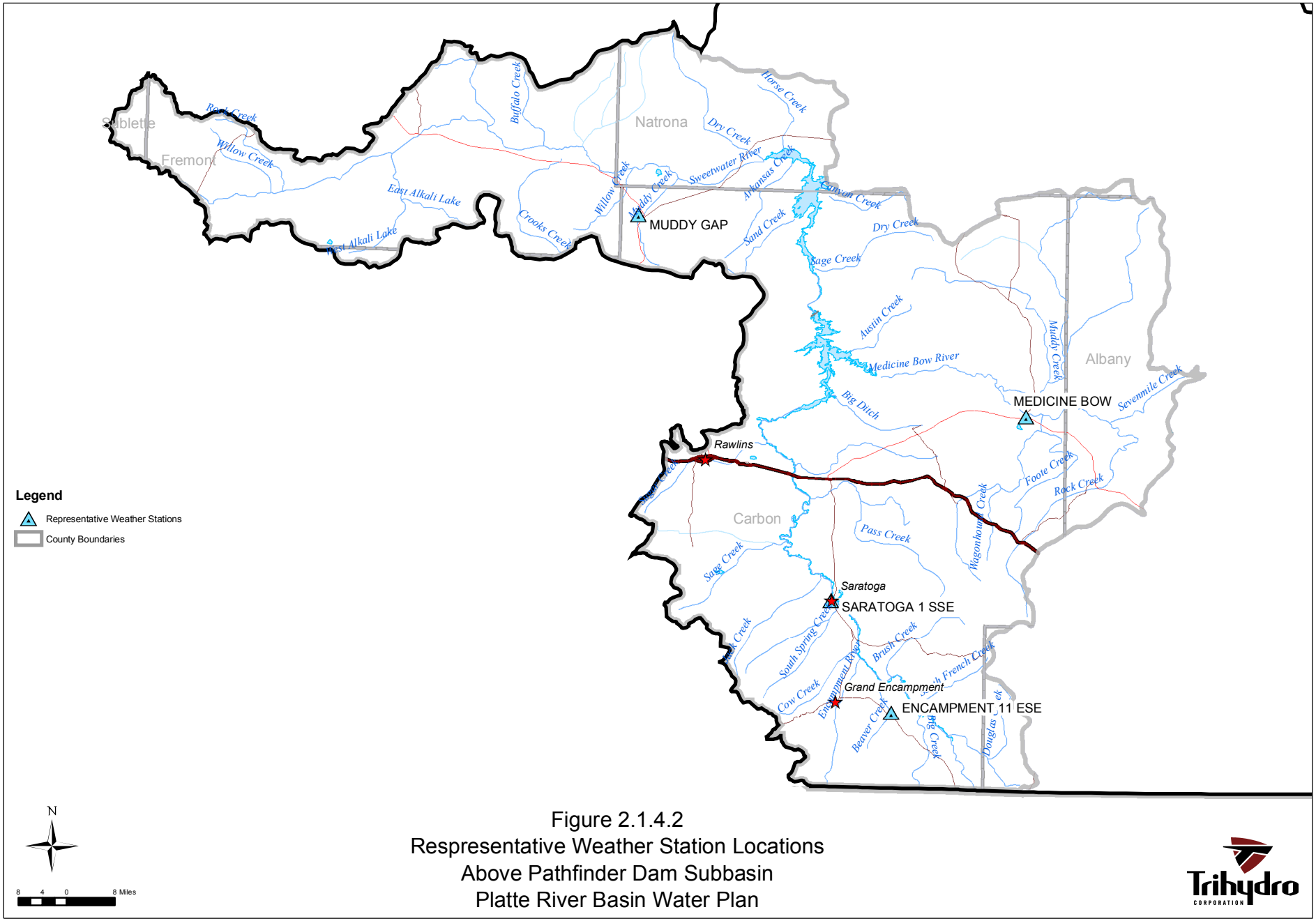


Figure 2.1.4.2
Respresentative Weather Station Locations
Above Pathfinder Dam Subbasin
Platte River Basin Water Plan

Trihydro CORPORATION

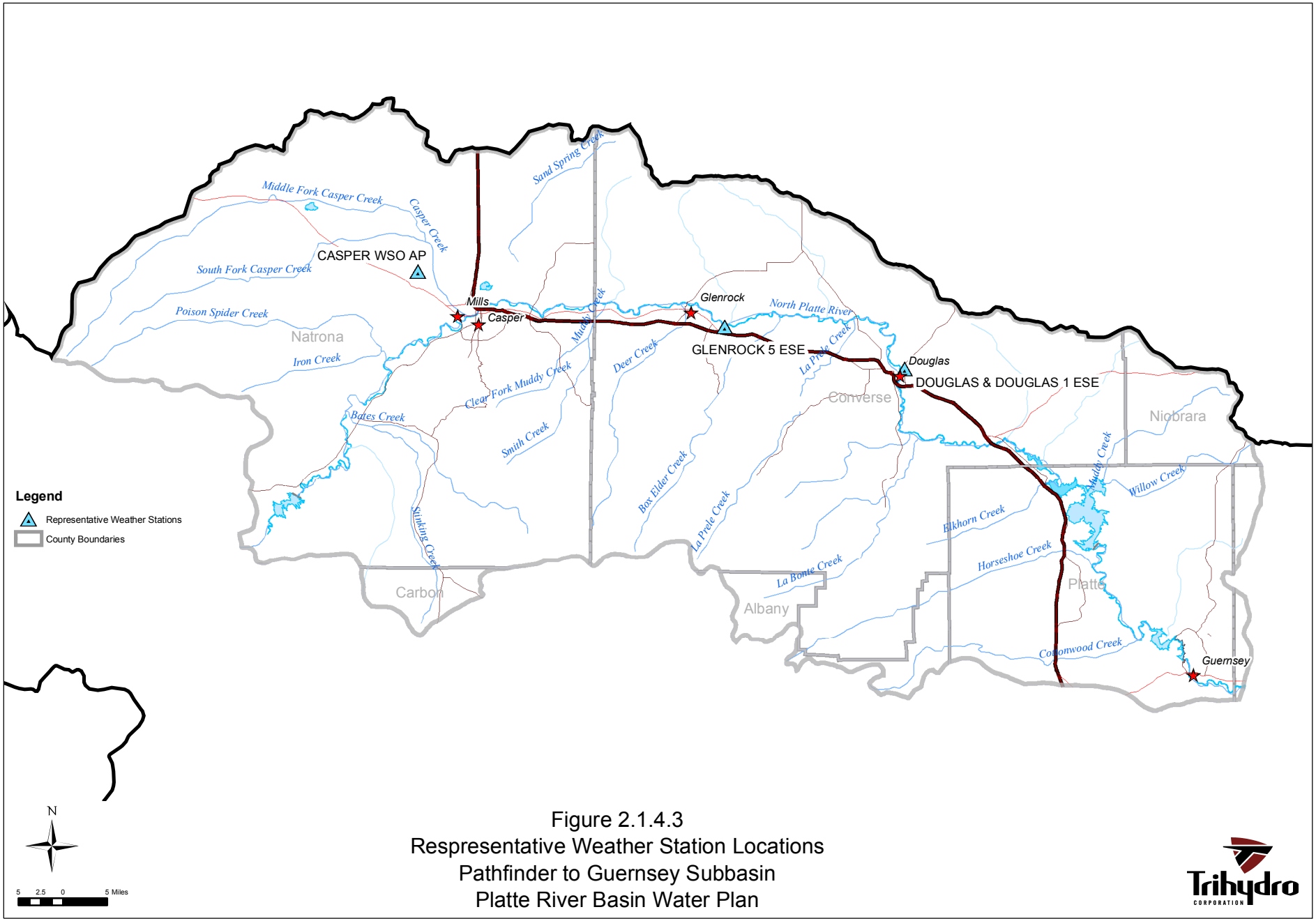
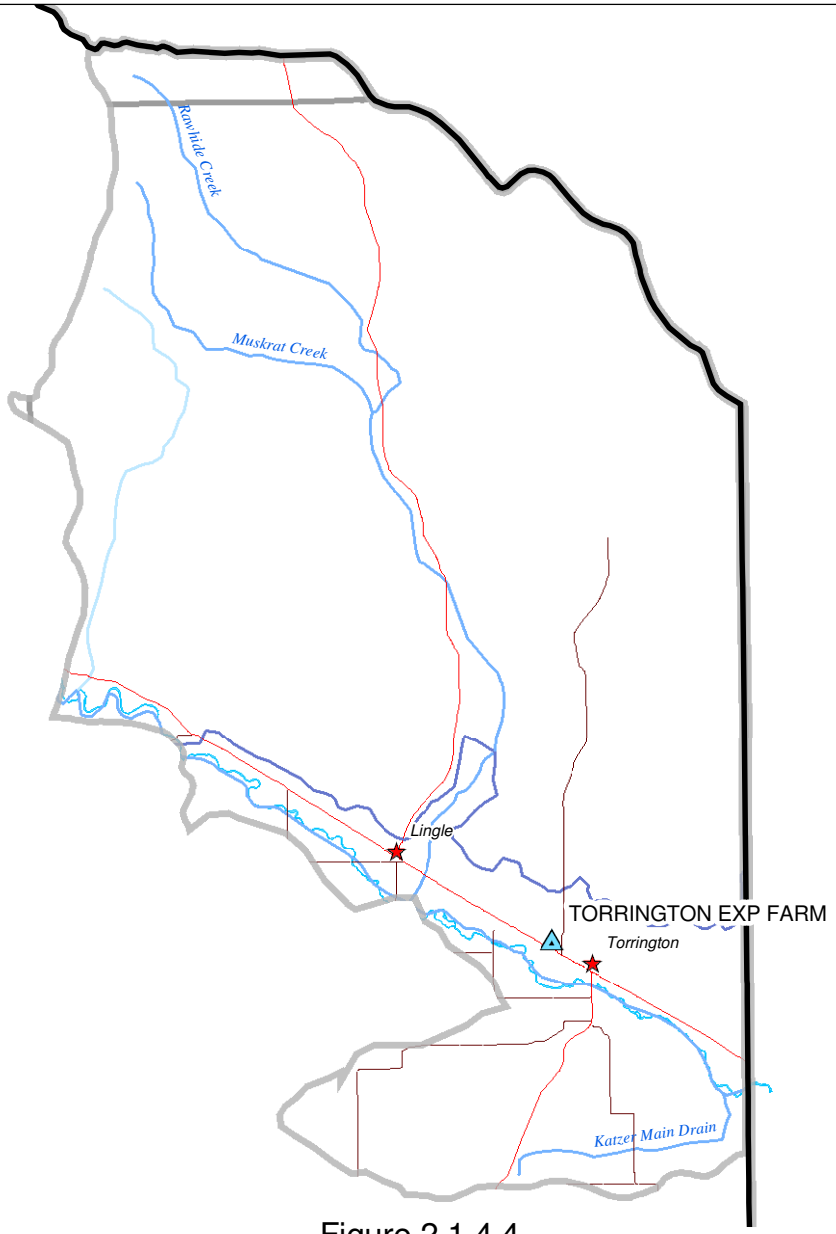


Figure 2.1.4.3
Respresentative Weather Station Locations
Pathfinder to Guernsey Subbasin
Platte River Basin Water Plan

Trihydro CORPORATION



Legend

- Representative Weather Stations
- County Boundaries

N

3 1.5 0 3 Miles

Figure 2.1.4.4
Representative Weather Station Location
Guernsey to State Line Subbasin
Platte River Basin Water Plan

Trihydro CORPORATION

Lidstone and Associates, Inc.
Engineering, Geology, & Water Resource Consulting

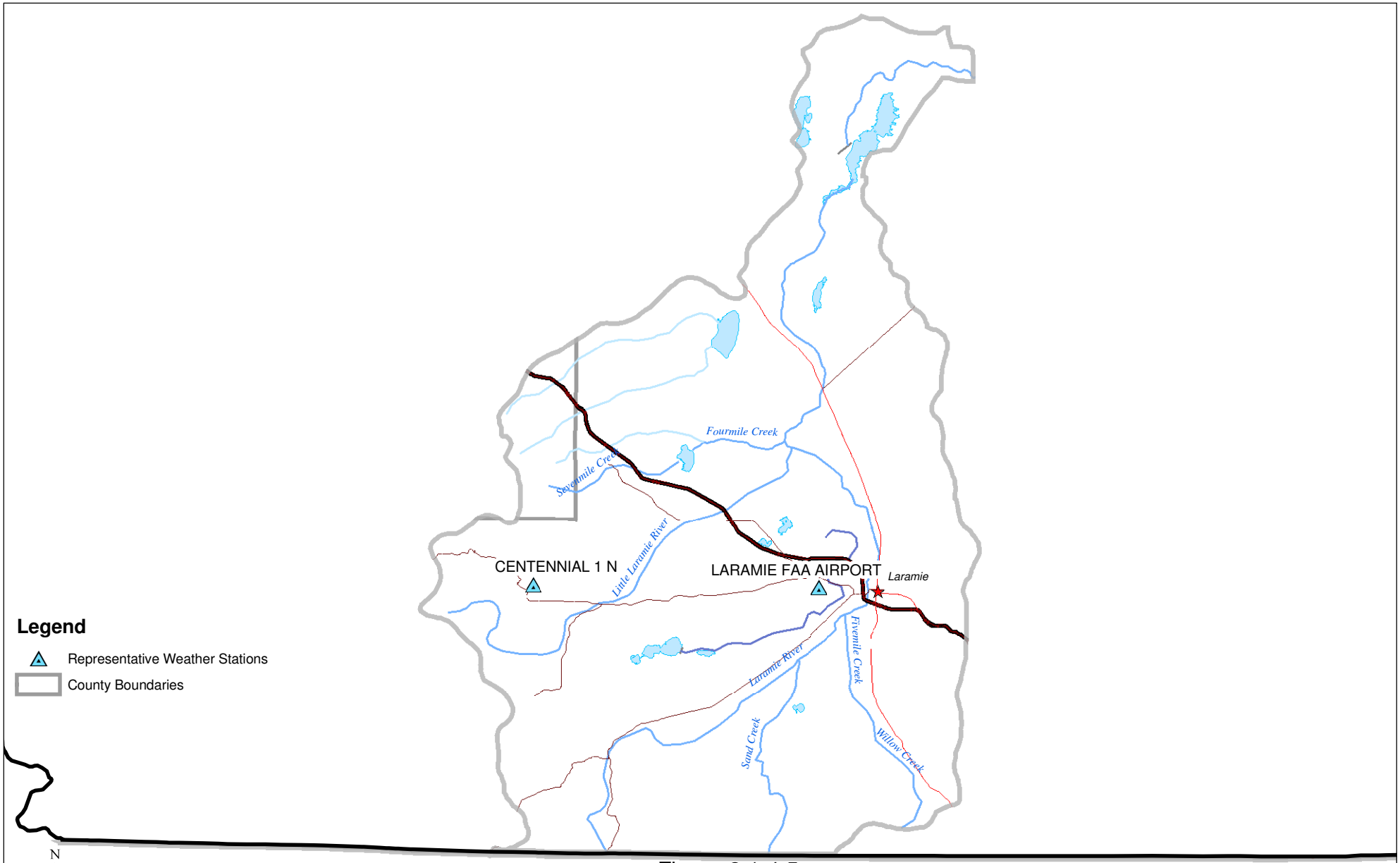


Figure 2.1.4.5
Representative Weather Station Locations
Upper Laramie Subbasin
Platte River Basin Water Plan

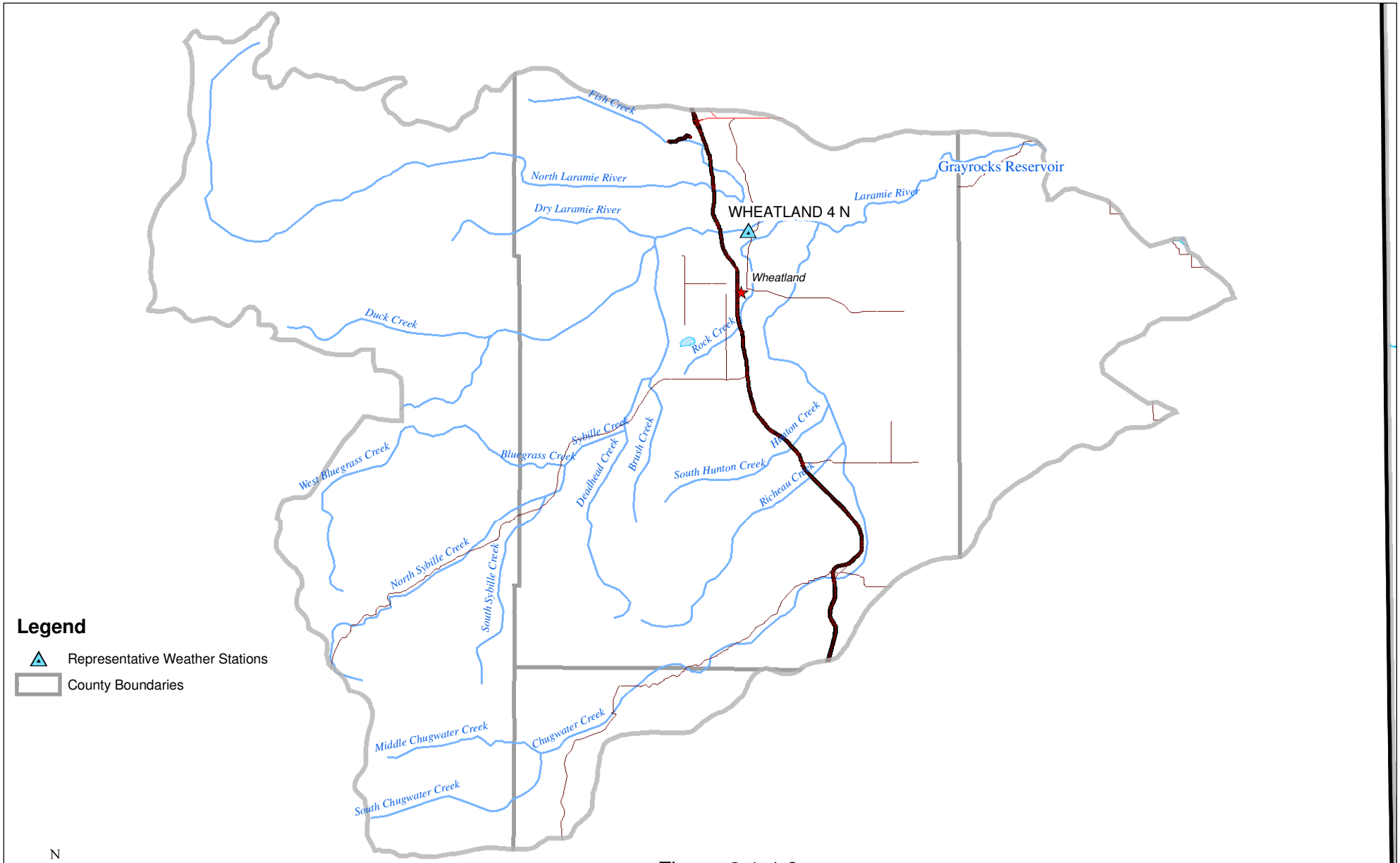


Figure 2.1.4.6
Representative Weather Station Location
Lower Laramie Subbasin
Platte River Basin Water Plan

Trihydro CORPORATION

Lidstone and Associates, Inc.
Engineering, Geology, & Water Resource Consulting

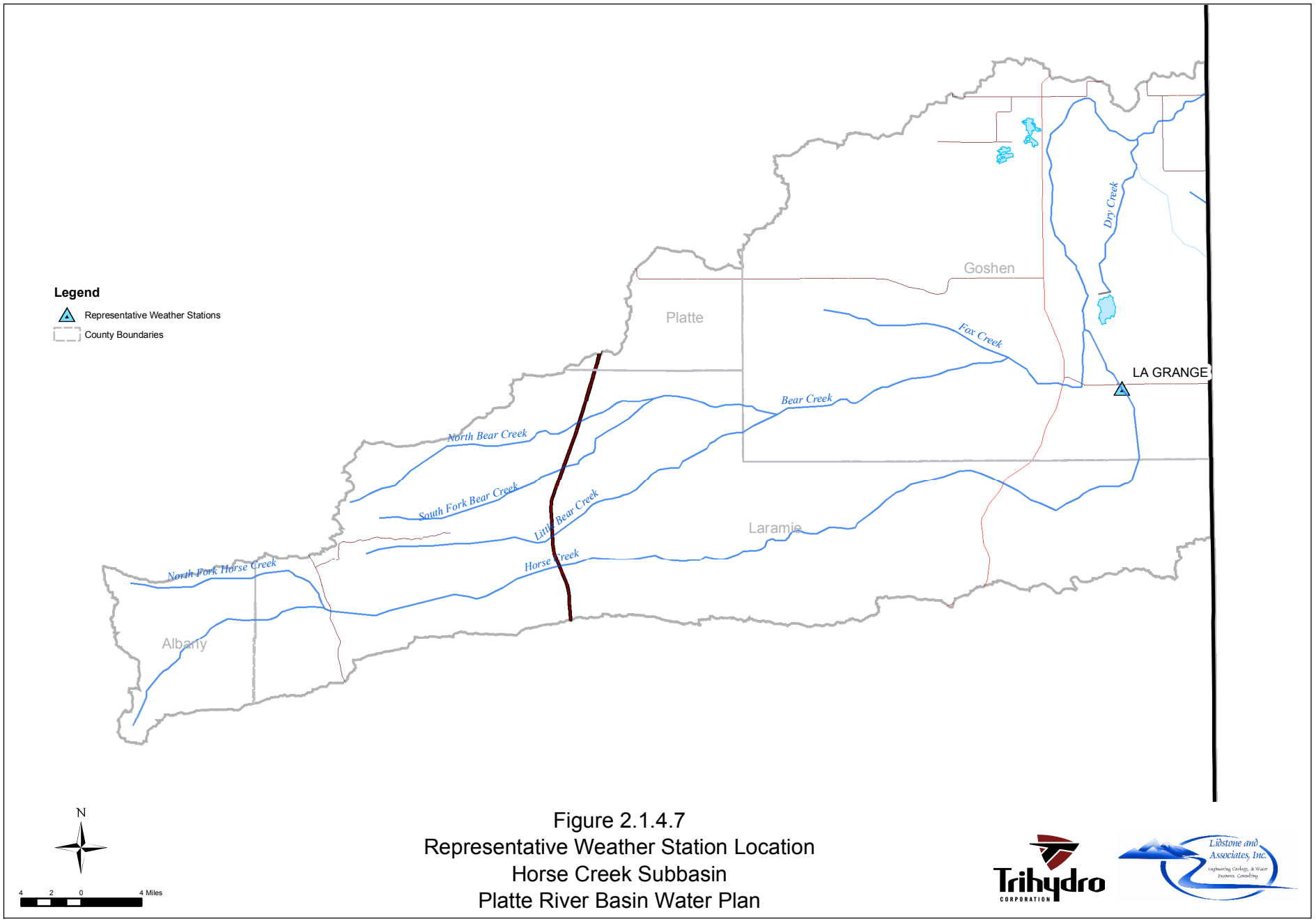


Figure 2.1.4.7
Representative Weather Station Location
Horse Creek Subbasin
Platte River Basin Water Plan

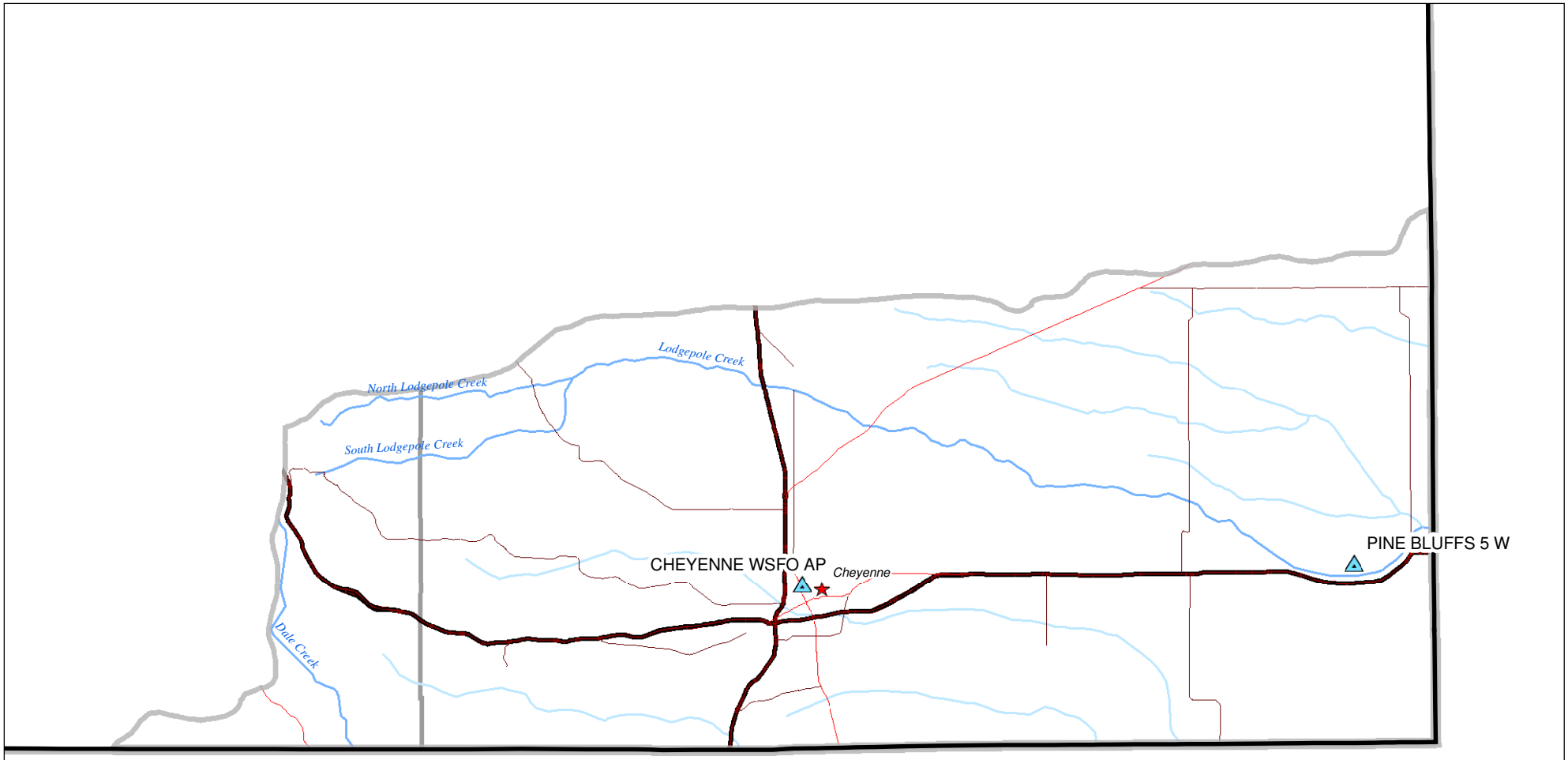


Figure 2.1.4.8
Representative Weather Station Locations
South Platte Subbasin
Platte River Basin Water Plan

Trihydro CORPORATION

Lidstone and Associates, Inc.
Engineering, Geology, & Water Resource Consulting

2.1.4.3.2 Extraterrestrial Solar Radiation, R_A

The monthly value of extraterrestrial solar radiation, R_A, during each of the six months of the irrigation season was calculated for each of the fourteen representative basin weather stations, and an average monthly value was calculated for each subbasin. Table 2.1.4.2 contains a summary of calculated monthly weather station and subbasin extraterrestrial solar radiation, R_A, values. This table contains R_A values in units of inches per month for each month of the April through September irrigation season in each of the seven Platte River Basin subbasins. Complete extraterrestrial solar radiation calculations are included in Appendix 2.1.4.A.

Table 2.1.4.2 Summary - extraterrestrial solar radiation, R_A, values by subbasin

Subbasin	Weather station	R_A (inches per month) April	May	June	July	Aug	Sept
Above Pathfinder	Encampment 10 ESE	16.52	19.74	20.24	20.42	18.30	14.36
	Saratoga 1 SSE	16.48	19.73	20.24	20.42	18.27	14.31
	Medicine Bow	16.42	19.70	20.25	20.41	18.23	14.22
	Muddy Gap	16.35	19.68	20.25	20.40	18.18	14.13
	Average, Above Pathfinder	16.44	19.71	20.25	20.41	18.25	14.26
Pathfinder to Guernsey	Casper WSO AP	16.27	19.65	20.25	20.39	18.12	14.02
	Glenrock 5 ESE	16.28	19.66	20.25	20.40	18.13	14.04
	Douglas 1 ESE	16.29	19.66	20.25	20.40	18.14	14.06
	Average, Pathfinder to Guernsey	16.28	19.66	20.25	20.40	18.13	14.04
Guernsey to State Line	Torrington Experimental Farm	16.39	19.70	20.25	20.41	18.21	14.19
Upper Laramie	Centennial 1 N	16.50	19.73	20.24	20.42	18.28	14.33
	Laramie FAA Airport	16.50	19.73	20.24	20.42	18.28	14.33
	Average, Upper Laramie	16.50	19.73	20.24	20.42	18.28	14.33
Lower Laramie	Wheatland 4 N	16.38	19.69	20.25	20.41	18.21	14.18
Horse Creek	LaGrange	16.45	19.72	20.24	20.42	18.25	14.27
South Platte	Cheyenne WSFO AP	16.52	19.74	20.24	20.42	18.30	14.37
	Pine Bluffs 5 W	16.52	19.74	20.24	20.42	18.30	14.36
	Average, South Platte	16.52	19.74	20.24	20.42	18.30	14.37

Notes:
See Appendix 2.1.4.A. for derivation of values in this table.

Extraterrestrial solar radiation, R_A, calculations include as a variable the day of the year from the Julian calendar, J. Monthly R_A values were calculated for the 15th day of each month. Each resultant mid-monthly R_A value was considered representative of the entire month. Since the variables employed to calculate R_A values included weather station latitude and days of the year, R_A values are not dependent on varying monthly or annual weather conditions or water supplies.

2.1.4.3.3 Temperature Data, T and TD

Temperature data, including average monthly temperatures, T; average monthly high temperatures; average monthly low temperatures; and the differences between average monthly high and low temperatures, TD; from the representative subbasin weather stations were obtained from the High Plains Regional Climate Center (HPRCC) at the University of Nebraska, Lincoln, Nebraska. Temperature data were obtained for the entire available period of record for each representative basin weather station. At Douglas and Pine Bluffs, data from two different weather stations located at or near each town were combined to provide one temperature data set covering as much of the 1972 through 2001 period of record as possible at these two sites. Complete tabulated temperature data for the representative weather stations as received from the HPRCC; arranged alphabetically by weather station and including a separate table for average monthly temperatures, average monthly high temperatures, and average monthly low temperatures at each weather station; are included in Appendix 2.1.4.B. Formatted tabulated temperature data from each representative weather station for the period 1951 through 2001 and for the irrigation season months of April through September are included in Appendix 2.1.4.C. In Appendix 2.1.4.C., no data are shown for months for which HPRCC data showed "-999." Some monthly HPRCC data in Appendix 2.1.4.B. included a letter "flag," such as 54.8b. The flag indicates that data from one or more days of the month were unavailable when the monthly average, average maximum, or average minimum temperatures were calculated. Flagged HPRCC data were inserted into Appendix 2.1.4.C. and report tables as numerals.

2.1.4.3.4 Wyoming Calibration Factor (WCF)

Supreme Court (2001) developed calibration factors between the Hargreaves equation (Equation 1 above) and a more detailed evapotranspiration equation, the Penman-Monteith equation, for grass reference evapotranspiration. Those calibration factors, referred to as Wyoming calibration factors (WCF), are adopted here from Supreme Court (2001) without modification. WCF values for the irrigation season months of April through September are tabulated in Table 2.1.4.3.

Table 2.1.4.3 Summary – Wyoming calibration factors (WCF)

Month	April	May	June	July	Aug	Sept
WCF	1.06	0.958	0.964	0.935	0.937	0.967

Note:
Values from Table 1, page 211, of Appendix G, Exhibit 6, Exhibit A, 2001 Modified Decree

2.1.4.3.5 Reference Evapotranspiration, ET_O, Calculations - General

Reference evapotranspiration, ET_O, values were calculated for each month of the irrigation season during the 1972 through 2001 study period and for each high flow, low flow, and normal or average stream flow year in each of the seven Platte River Basin subbasins. The following sections describe calculation of ET_O values by subbasin.

2.1.4.3.5.1 Reference Evapotranspiration, ET_O – Above Pathfinder Subbasin

Table 2.1.4.4 contains a sorted list of Above Pathfinder subbasin high, low, and normal or average flow years during the 1972 through 2001 study period. Information shown in Table 2.1.4.4 was derived from Table 3.1.1.5 in Technical Memorandum 3.1.

Table 2.1.4.4 Summary – high stream flow, low stream flow, and normal or average stream flow years - Above Pathfinder subbasin

No.	Year
1	1984
2	1983
3	1985
4	1986
5	1973
6	1997
7	1995
8	1974
9	1980
10	1982
11	1978
12	1996
13	1979
14	1999
15	1993
16	1975
17	1998
18	1988
19	1976
20	1972
21	1991
22	2000
23	1990
24	1994
25	2001
26	1987
27	1981
28	1992
29	1989
30	1977
	designates high stream flow years
	designates low stream flow years

Years which are neither shaded or outlined are normal or average stream flow years

See Table 3.1.1.5. in Technical Memorandum 3.1., Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year Determination

Tables 2.1.4.5, 2.1.4.6, and 2.1.4.7 contain reference evapotranspiration, ET_O, calculation parameters and results for high flow, low flow, and normal or average flow years, respectively, in the Above Pathfinder subbasin. Table 2.1.4.8 contains a summary of ET_O values for the Above Pathfinder subbasin for available years of record during the study period.

Table 2.1.4.5 Summary – reference evapotranspiration, ET_O, calculations - high flow years - Above Pathfinder subbasin

1984						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1984						
Encampment 10 ESE weather station	24.7	32.5	30.7	29.5	28.2	29.5
Saratoga 1 ESE weather station	24.8	31.4	30.7	32.0	31.2	31.9
Medicine Bow weather station	ND	ND	ND	ND	ND	ND
Muddy Gap weather station	21.6	31.4	32.9	33.8	30.2	33.3
Average TD (degrees Fahrenheit) - 1984	23.7	31.8	31.4	31.8	29.9	31.6
Average TD (degrees Celsius) - 1984	**13.2**	**17.7**	**17.4**	**17.7**	**16.6**	**17.6**
T - 1984						
Encampment 10 ESE weather station	30.6	48.3	53.7	61.7	61.4	51.4
Saratoga 1 ESE weather station	34.7	52.0	57.8	66.6	65.9	54.6
Medicine Bow weather station	ND	ND	ND	ND	ND	ND
Muddy Gap weather station	38.3	53.5	60.6	69.8	70.6	54.6
Average T (degrees Fahrenheit) - 1984	34.5	51.3	57.4	66.0	66.0	53.5
Average T (degrees Celsius) - 1984	**1.4**	**10.7**	**14.1**	**18.9**	**18.9**	**11.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1984 (inches per month)	**2.80**	**5.21**	**5.97**	**6.78**	**5.88**	**3.95**
1983						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1983						
Encampment 10 ESE weather station	24.7	25.9	28.3	30.9	29.0	32.7
Saratoga 1 ESE weather station	24.3	28.4	28.8	30.7	32.1	34.7
Medicine Bow weather station	ND	ND	ND	ND	ND	ND
Muddy Gap weather station	22.4	26.4	27.5	32.4	31.4	33.6
Average TD (degrees Fahrenheit) - 1983	23.8	26.9	28.2	31.3	30.8	33.7
Average TD (degrees Celsius) - 1983	**13.2**	**14.9**	**15.7**	**17.4**	**17.1**	**18.7**
T - 1983						
Encampment 10 ESE weather station	31.9	43.1	53.0	60.5	63.6	54.4
Saratoga 1 ESE weather station	34.7	46.0	57.5	66.6	67.7	57.2
Medicine Bow weather station	ND	ND	ND	ND	ND	ND
Muddy Gap weather station	35.2	47.0	59.8	68.9	72.5	60.0
Average T (degrees Fahrenheit) - 1983	33.9	45.4	56.8	65.3	67.9	57.2
Average T (degrees Celsius) - 1983	**1.1**	**7.4**	**13.8**	**18.5**	**19.9**	**14.0**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1983 (inches per month)	**2.75**	**4.22**	**5.62**	**6.65**	**6.13**	**4.36**

Table 2.1.4.5 Summary – reference evapotranspiration, ET_O, calculations - high flow years - Above Pathfinder subbasin (cont)

1985						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1985						
Encampment 10 ESE weather station	30.9	31.4	32.7	28.7	37.7	31.2
Saratoga 1 ESE weather station	31.2	33.4	34.3	31.5	37.1	30.9
Medicine Bow weather station	ND	ND	ND	ND	ND	ND
Muddy Gap weather station	31.2	31.9	35.2	32.5	36.2	28.9
Average TD (degrees Fahrenheit) - 1985	31.1	32.2	34.1	30.9	37.0	30.3
Average TD (degrees Celsius) - 1985	**17.3**	**17.9**	**18.9**	**17.2**	**20.6**	**16.8**
T - 1985						
Encampment 10 ESE weather station	40.4	48.8	55.3	61.9	58.3	47.2
Saratoga 1 ESE weather station	43.2	51.5	60.1	67.0	63.8	51.9
Medicine Bow weather station	ND	ND	ND	ND	ND	ND
Muddy Gap weather station	44.8	55.1	62.5	70.3	67.2	53.9
Average T (degrees Fahrenheit) - 1985	42.8	51.8	59.3	66.4	63.1	51.0
Average T (degrees Celsius) - 1985	**6.0**	**11.0**	**15.2**	**19.1**	**17.3**	**10.6**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1985 (inches per month)	**3.97**	**5.29**	**6.44**	**6.72**	**6.27**	**3.69**
1986						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1986						
Encampment 10 ESE weather station	27.8	31.8	35.3	31.0	32.3	28.9
Saratoga 1 ESE weather station	25.6	33.0	33.5	30.3	34.0	27.7
Medicine Bow weather station	ND	ND	ND	ND	35.9	30.8
Muddy Gap weather station	ND	29.2	32.7	30.0	35.1	28.2
Average TD (degrees Fahrenheit) - 1986	26.7	31.3	33.8	30.4	34.3	28.9
Average TD (degrees Celsius) - 1986	**14.8**	**17.4**	**18.8**	**16.9**	**19.1**	**16.1**
T - 1986						
Encampment 10 ESE weather station	39.7	46.3	56.8	58.3	59.9	49.1
Saratoga 1 ESE weather station	41.6	49.4	63.8	64.2	64.5	53.3
Medicine Bow weather station	ND	ND	ND	ND	64.2	51.6
Muddy Gap weather station	ND	51.4	68.0	66.7	67.5	54.5
Average T (degrees Fahrenheit) - 1986	40.7	49.0	62.9	63.1	64.0	52.1
Average T (degrees Celsius) - 1986	**4.8**	**9.4**	**17.2**	**17.3**	**17.8**	**11.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1986 (inches per month)	**3.48**	**4.93**	**6.81**	**6.33**	**6.12**	**3.69**

Table 2.1.4.5 Summary – reference evapotranspiration, ET_O, calculations - high flow years - Above Pathfinder subbasin (cont)

1973						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1973						
Encampment 10 ESE weather station	22.7	28.1	30.4	29.1	31.9	31.1
Saratoga 1 ESE weather station	21.8	30.6	33.1	32.5	34.1	32.0
Medicine Bow weather station	21.5	31.3	32.8	31.2	33.1	32.7
Muddy Gap weather station	19.5	ND	30.4	26.4	30.6	ND
Average TD (degrees Fahrenheit) - 1973	21.4	30.0	31.7	29.8	32.4	31.9
Average TD (degrees Celsius) - 1973	**11.9**	**16.7**	**17.6**	**16.6**	**18**	**17.7**
T - 1973						
Encampment 10 ESE weather station	32.8	46.8	55.3	61.1	63.0	52.4
Saratoga 1 ESE weather station	34.5	48.7	59.5	64.8	65.7	53.9
Medicine Bow weather station	33.4	47.8	59.2	63.2	64.3	52.6
Muddy Gap weather station	31.9	ND	60.9	65.7	68.6	ND
Average T (degrees Fahrenheit) - 1973	33.2	47.8	58.7	63.7	65.4	53.0
Average T (degrees Celsius) - 1973	**0.7**	**8.8**	**14.8**	**17.6**	**18.6**	**11.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1973 (inches per month)	**2.56**	**4.72**	**6.14**	**6.33**	**6.07**	**3.94**
1997						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1997						
Encampment 10 ESE weather station	30.6	32.8	35.7	41.3	35.6	36.5
Saratoga 1 ESE weather station	25.6	29.2	29.0	31.8	28.8	27.5
Medicine Bow weather station	25.4	31.4	32.2	35.6	31.4	31.0
Muddy Gap weather station	25.4	29.9	29.3	32.4	29.9	24.8
Average TD (degrees Fahrenheit) - 1997	26.8	30.8	31.6	35.3	31.4	30.0
Average TD (degrees Celsius) - 1997	**14.9**	**17.1**	**17.6**	**19.6**	**17.4**	**16.7**
T - 1997						
Encampment 10 ESE weather station	34.2	47.5	56.6	60.7	59.7	53.4
Saratoga 1 ESE weather station	36.8	51.1	61.3	65.8	64.2	58.0
Medicine Bow weather station	35.9	51.1	61.2	64.8	64.1	57.6
Muddy Gap weather station	38.3	53.5	63.9	68.5	67.5	61.1
Average T (degrees Fahrenheit) - 1997	36.3	50.8	60.8	65.0	63.9	57.5
Average T (degrees Celsius) - 1997	**2.4**	**10.4**	**16.0**	**18.3**	**17.7**	**14.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1997 (inches per month)	**3.13**	**5.06**	**6.37**	**7.01**	**5.82**	**4.15**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.6 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Above Pathfinder subbasin

2001						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 2001						
Encampment 10 ESE weather station	ND	ND	ND	ND	ND	ND
Saratoga 1 ESE weather station	26.1	32.3	37.7	33.3	ND	36.5
Medicine Bow weather station	26.2	29.5	37.9	34.9	34.5	38.6
Muddy Gap weather station	24.0	28.6	32.4	31.0	30.1	28.4
Average TD (degrees Fahrenheit) - 2001	25.4	30.1	36.0	33.1	32.3	34.5
Average TD (degrees Celsius) - 2001	**14.1**	**16.7**	**20.0**	**18.4**	**17.9**	**19.2**
T - 2001						
Encampment 10 ESE weather station	ND	ND	ND	ND	ND	ND
Saratoga 1 ESE weather station	44.0	52.4	52.4	69.8	ND	57.5
Medicine Bow weather station	42.6	52.1	60.7	69.9	67.8	57.1
Muddy Gap weather station	44.2	54.8	64.4	74.7	72.0	62.3
Average T (degrees Fahrenheit) - 2001	43.6	53.1	59.2	71.5	69.9	59.0
Average T (degrees Celsius) - 2001	**6.4**	**11.7**	**15.1**	**21.9**	**21.1**	**15.0**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 2001 (inches per month)	**3.64**	**5.24**	**6.61**	**7.47**	**6.47**	**4.56**
1987						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1987						
Encampment 10 ESE weather station	32.1	27.2	32.6	30.6	32.4	37.9
Saratoga 1 ESE weather station	32.1	25.9	32.2	30.0	30.8	34.9
Medicine Bow weather station	34.4	28.0	35.2	34.1	33.3	38.6
Muddy Gap weather station	31.5	27.8	32.8	30.9	33.1	35.0
Average TD (degrees Fahrenheit) - 1987	32.5	27.2	33.2	31.4	32.4	36.6
Average TD (degrees Celsius) - 1987	**18.1**	**15.1**	**18.4**	**17.4**	**18.0**	**20.3**
T - 1987						
Encampment 10 ESE weather station	42.6	49.3	56.1	62.0	57.3	50.1
Saratoga 1 ESE weather station	44.8	52.8	59.4	65.1	61.4	54.5
Medicine Bow weather station	44.3	52.7	60.0	64.6	61.2	54.0
Muddy Gap weather station	48.1	55.4	64.2	68.4	65.5	58.3
Average T (degrees Fahrenheit) - 1987	45.0	52.6	59.9	65.0	61.4	54.2
Average T (degrees Celsius) - 1987	**7.2**	**11.4**	**15.5**	**18.3**	**16.3**	**12.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1987 (inches per month)	**4.26**	**4.93**	**6.41**	**6.61**	**5.69**	**4.30**

Table 2.1.4.6 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Above Pathfinder subbasin (cont)

1981						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1981						
Encampment 10 ESE weather station	30.3	23.5	32.2	31.0	32.3	31.3
Saratoga 1 ESE weather station	29.4	24.2	32.2	32.1	33.9	32.4
Medicine Bow weather station	30.3	24.3	32.5	35.3	34.6	ND
Muddy Gap weather station	30.2	23.8	33.0	32.9	32.9	28.8
Average TD (degrees Fahrenheit) - 1981	30.1	24.0	32.5	32.8	33.4	30.8
Average TD (degrees Celsius) - 1981	**16.7**	**13.3**	**18.1**	**18.2**	**18.6**	**17.1**
T - 1981						
Encampment 10 ESE weather station	44.8	45.7	57.7	62.6	61.4	56.4
Saratoga 1 ESE weather station	46.7	49.0	62.3	66.6	64.5	60.0
Medicine Bow weather station	48.4	47.7	63.4	66.8	64.4	ND
Muddy Gap weather station	47.0	50.4	63.7	69.5	67.2	61.9
Average T (degrees Fahrenheit) - 1981	46.7	48.2	61.8	66.4	64.4	59.4
Average T (degrees Celsius) - 1981	**8.2**	**9.0**	**16.6**	**19.1**	**18.0**	**15.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1981 (inches per month)	**4.26**	**4.24**	**6.57**	**6.91**	**6.07**	**4.33**
1992						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1992						
Encampment 10 ESE weather station	29.5	30.0	30.7	31.3	33.2	31.9
Saratoga 1 ESE weather station	28.3	27.5	28.4	28.2	30.8	32.3
Medicine Bow weather station	31.7	32.7	30.9	31.8	33.9	35.8
Muddy Gap weather station	31.3	29.2	29.4	31.4	33.6	30.0
Average TD (degrees Fahrenheit) - 1992	30.2	29.9	29.9	30.7	32.9	32.5
Average TD (degrees Celsius) - 1992	**16.8**	**16.6**	**16.6**	**17.1**	**18.3**	**18.1**
T - 1992						
Encampment 10 ESE weather station	42.8	49.6	55.0	58.4	59.9	53.7
Saratoga 1 ESE weather station	47.2	54.0	58.6	62.2	63.5	56.4
Medicine Bow weather station	46.4	53.4	59.4	63.0	63.2	55.6
Muddy Gap weather station	48.6	56.2	61.7	65.1	66.4	59.9
Average T (degrees Fahrenheit) - 1992	46.3	53.3	58.7	62.2	63.3	56.4
Average T (degrees Celsius) - 1992	**7.9**	**11.8**	**14.8**	**16.8**	**17.4**	**13.6**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1992 (inches per month)	**4.22**	**5.24**	**5.96**	**6.28**	**5.92**	**4.24**

Table 2.1.4.6 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Above Pathfinder subbasin (cont)

1989						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1989						
Encampment 10 ESE weather station	26.8	31.8	31.8	33.9	31.6	33.3
Saratoga 1 ESE weather station	28.6	32.9	31.4	32.2	30.5	33.5
Medicine Bow weather station	31.7	33.7	34.2	37.3	36.5	35.5
Muddy Gap weather station	31.3	30.9	30.9	32.7	30.2	30.6
Average TD (degrees Fahrenheit) - 1989	29.6	32.3	32.1	34.0	32.2	33.2
Average TD (degrees Celsius) - 1989	**16.4**	**17.9**	**17.8**	**18.9**	**17.9**	**18.4**
T - 1989						
Encampment 10 ESE weather station	42.0	49.0	55.1	64.8	59.3	52.4
Saratoga 1 ESE weather station	44.9	52.0	59.0	67.2	63.1	55.5
Medicine Bow weather station	43.3	50.9	58.4	67.5	62.1	54.8
Muddy Gap weather station	45.8	53.9	60.7	72.0	65.9	58.0
Average T (degrees Fahrenheit) - 1989	44.0	51.5	58.3	67.9	62.6	55.2
Average T (degrees Celsius) - 1989	**6.7**	**10.8**	**14.6**	**19.9**	**17.0**	**12.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1989 (inches per month)	**3.98**	**5.25**	**6.14**	**7.19**	**5.79**	**4.18**
1977						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1977						
Encampment 10 ESE weather station	29.1	32.7	37.7	35.1	32.7	40.1
Saratoga 1 ESE weather station	28.9	33.6	38.4	33.9	33.3	38.0
Medicine Bow weather station	34.4	35.9	39.0	37.6	35.3	37.4
Muddy Gap weather station	ND	ND	ND	ND	ND	ND
Average TD (degrees Fahrenheit) - 1977	30.8	34.1	38.4	35.5	33.8	38.5
Average TD (degrees Celsius) - 1977	**17.1**	**18.9**	**21.3**	**19.7**	**18.8**	**21.4**
T - 1977						
Encampment 10 ESE weather station	41.6	48.2	59.9	63.0	59.3	53.3
Saratoga 1 ESE weather station	44.4	51.3	64.9	66.8	63.7	57.0
Medicine Bow weather station	43.2	50.8	63.7	65.2	63.0	54.5
Muddy Gap weather station	ND	ND	ND	ND	ND	ND
Average T (degrees Fahrenheit) - 1977	43.1	50.1	62.8	65.0	62.0	54.9
Average T (degrees Celsius) - 1977	**6.2**	**10.1**	**17.1**	**18.3**	**16.7**	**12.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1977 (inches per month)	**3.98**	**5.27**	**7.23**	**7.03**	**5.88**	**4.47**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.7 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Above Pathfinder subbasin

1995						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1995						
Encampment 10 ESE weather station	28.9	25.1	31.7	36.8	39.2	34.7
Saratoga 1 ESE weather station	24.3	22.1	28.3	29.9	31.3	29.3
Medicine Bow weather station	26.5	21.8	30.3	33.4	37.5	32.6
Muddy Gap weather station	23.8	24.8	29.7	ND	32.2	ND
Average TD (degrees Fahrenheit) - 1995	25.9	23.5	30.0	33.4	35.1	32.2
Average TD (degrees Celsius) - 1995	**14.4**	**13.1**	**16.7**	**18.6**	**19.5**	**17.9**
T - 1995						
Encampment 10 ESE weather station	37.1	43.2	53.7	59.9	63.4	52.7
Saratoga 1 ESE weather station	39.5	45.5	57.1	63.8	67.1	55.6
Medicine Bow weather station	39.7	45.5	45.5	64.2	66.0	54.7
Muddy Gap weather station	41.1	46.5	58.5	ND	70.5	ND
Average T (degrees Fahrenheit) - 1995	39.4	45.2	53.7	62.6	66.8	54.3
Average T (degrees Celsius) - 1995	**4.1**	**7.3**	**12.1**	**17**	**19.3**	**12.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1995 (inches per month)	**3.33**	**3.95**	**5.49**	**6.59**	**6.44**	**4.05**
1974						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1974						
Encampment 10 ESE weather station	26.1	33.4	32.0	30.2	37.2	34.9
Saratoga 1 ESE weather station	25.3	35.2	35.8	33.5	38.8	39.3
Medicine Bow weather station	ND	ND	37.3	37.4	40.1	40.1
Muddy Gap weather station	24.6	30.4	ND	30.0	31.0	33.2
Average TD (degrees Fahrenheit) - 1974	25.3	33.0	35.0	32.8	36.8	36.9
Average TD (degrees Celsius) - 1974	**14.1**	**18.3**	**19.4**	**18.2**	**20.4**	**20.5**
T - 1974						
Encampment 10 ESE weather station	38.5	49.8	58.5	63.4	58.1	50.9
Saratoga 1 ESE weather station	40.3	52.3	61.8	67.0	61.2	52.7
Medicine Bow weather station	ND	ND	61.0	65.3	60.0	51.3
Muddy Gap weather station	42.4	50.7	ND	70.0	62.2	55.0
Average T (degrees Fahrenheit) - 1974	40.4	50.9	60.4	66.4	60.4	52.5
Average T (degrees Celsius) - 1974	**4.7**	**10.5**	**15.8**	**19.1**	**15.8**	**11.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1974 (inches per month)	**3.39**	**5.26**	**6.64**	**6.91**	**5.97**	**4.19**

Table 2.1.4.7 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Above Pathfinder subbasin (cont)

1980						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1980						
Encampment 10 ESE weather station	27.1	27.2	37.2	32.4	32.9	34.4
Saratoga 1 ESE weather station	26.6	26.9	35.6	32.8	31.2	32.8
Medicine Bow weather station	ND	31.0	39.7	38.0	38.2	37.6
Muddy Gap weather station	24.1	ND	32.0	ND	ND	31.4
Average TD (degrees Fahrenheit) - 1980	25.9	28.4	36.1	34.4	34.1	34.1
Average TD (degrees Celsius) - 1980	**14.4**	**15.8**	**20.1**	**19.1**	**18.9**	**18.9**
T - 1980						
Encampment 10 ESE weather station	36.4	47.8	56.5	62.8	60.1	53.4
Saratoga 1 ESE weather station	40.4	50.2	61.4	67.7	64.6	56.4
Medicine Bow weather station	ND	49.8	61.9	66.7	62.9	55.7
Muddy Gap weather station	41.8	ND	61.9	ND	ND	58.2
Average T (degrees Fahrenheit) - 1980	39.5	49.3	60.4	65.7	62.5	55.9
Average T (degrees Celsius) - 1980	**4.2**	**9.6**	**15.8**	**18.7**	**16.9**	**13.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1980 (inches per month)	**3.35**	**4.73**	**6.76**	**7.00**	**5.93**	**4.29**
1982						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1982						
Encampment 10 ESE weather station	28.9	27.0	30.1	30.5	27.9	26.6
Saratoga 1 ESE weather station	30.9	28.4	32.5	33.0	30.9	28.9
Medicine Bow weather station	ND	ND	ND	ND	ND	ND
Muddy Gap weather station	28.2	27.1	30.0	31.8	32.6	25.8
Average TD (degrees Fahrenheit) - 1982	29.3	27.5	30.9	31.8	30.5	27.1
Average TD (degrees Celsius) - 1982	**16.3**	**15.3**	**17.2**	**17.7**	**16.9**	**15.1**
T - 1982						
Encampment 10 ESE weather station	ND	46.0	53.6	60.6	63.2	52.2
Saratoga 1 ESE weather station	38.5	49.0	56.8	65.3	67.2	55.3
Medicine Bow weather station	ND	ND	ND	ND	ND	ND
Muddy Gap weather station	39.4	50.3	58.9	69.0	71.5	55.9
Average T (degrees Fahrenheit) - 1982	39.0	48.4	56.4	65.0	67.3	54.5
Average T (degrees Celsius) - 1982	**3.9**	**9.1**	**13.6**	**18.3**	**19.6**	**12.5**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1982 (inches per month)	**3.51**	**4.57**	**5.85**	**6.67**	**6.05**	**3.73**

Table 2.1.4.7 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Above Pathfinder subbasin (cont)

1978						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1978						
Encampment 10 ESE weather station	34.0	ND	39.6	ND	36.0	38.0
Saratoga 1 ESE weather station	27.2	25.1	31.5	35.3	34.0	34.1
Medicine Bow weather station	30.0	30.7	30.7	ND	37.7	37.5
Muddy Gap weather station	ND	ND	ND	ND	ND	ND
Average TD (degrees Fahrenheit) - 1978	30.4	27.9	33.9	35.3	35.9	36.5
Average TD (degrees Celsius) - 1978	**16.9**	**15.5**	**18.8**	**19.6**	**19.9**	**20.3**
T - 1978						
Encampment 10 ESE weather station	39.4	ND	53.9	ND	60.2	54.9
Saratoga 1 ESE weather station	43.6	49.2	61.0	67.4	61.8	55.3
Medicine Bow weather station	41.3	48.5	59.7	ND	61.8	54.5
Muddy Gap weather station	ND	ND	ND	ND	ND	ND
Average T (degrees Fahrenheit) - 1978	41.4	48.9	58.2	67.4	61.3	54.9
Average T (degrees Celsius) - 1978	**5.2**	**9.4**	**14.6**	**19.7**	**16.3**	**12.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1978 (inches per month)	**3.79**	**4.65**	**6.31**	**7.29**	**5.98**	**4.36**
1996						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1996						
Encampment 10 ESE weather station	29.2	32.0	35.7	38.1	39.6	36.7
Saratoga 1 ESE weather station	26.1	27.9	32.6	33.9	36.7	30.9
Medicine Bow weather station	28.9	29.3	37.2	36.8	39.7	34.3
Muddy Gap weather station	ND	26.7	33.0	ND	35.5	30.1
Average TD (degrees Fahrenheit) - 1996	28.1	29.0	34.6	36.3	37.9	33.0
Average TD (degrees Celsius) - 1996	**15.6**	**16.1**	**19.2**	**20.2**	**21.1**	**18.3**
T - 1996						
Encampment 10 ESE weather station	40.0	48.8	57.2	62.6	60.9	50.8
Saratoga 1 ESE weather station	41.8	51.2	61.3	66.8	64.2	53.7
Medicine Bow weather station	41.4	50.2	61.2	66.8	64.1	52.7
Muddy Gap weather station	ND	51.1	64.2	ND	69.5	57.3
Average T (degrees Fahrenheit) - 1996	41.1	50.3	61.0	65.4	64.7	53.6
Average T (degrees Celsius) - 1996	**5.1**	**10.2**	**16.1**	**18.6**	**18.2**	**12.0**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1996 (inches per month)	**3.63**	**4.88**	**6.67**	**7.18**	**6.50**	**4.04**

Table 2.1.4.7 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Above Pathfinder subbasin (cont)

1979						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1979						
Encampment 10 ESE weather station	28.6	27.4	34.0	33.2	28.9	36.3
Saratoga 1 ESE weather station	26.6	28.4	34.6	34.8	30.3	38.5
Medicine Bow weather station	ND	32.7	37.0	40.0	34.5	44.6
Muddy Gap weather station	ND	26.8	ND	ND	27.6	32.1
Average TD (degrees Fahrenheit) - 1979	27.6	28.8	35.2	36.0	30.3	37.9
Average TD (degrees Celsius) - 1979	**15.3**	**16**	**19.6**	**20**	**16.8**	**21.1**
T - 1979						
Encampment 10 ESE weather station	38.4	46.3	55.0	61.7	59.5	54.6
Saratoga 1 ESE weather station	42.0	49.2	60.2	67.1	63.2	58.3
Medicine Bow weather station	ND	48.3	59.6	66.2	61.8	57.0
Muddy Gap weather station	ND	50.0	ND	ND	63.9	61.5
Average T (degrees Fahrenheit) - 1979	40.2	48.5	58.3	65.0	62.1	57.9
Average T (degrees Celsius) - 1979	**4.6**	**9.2**	**14.6**	**18.3**	**16.7**	**14.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1979 (inches per month)	**3.51**	**4.69**	**6.44**	**7.09**	**5.56**	**4.69**
1999						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1999						
Encampment 10 ESE weather station	ND	ND	ND	ND	ND	ND
Saratoga 1 ESE weather station	24.8	29.2	30.1	31.0	30.7	31.9
Medicine Bow weather station	22.7	29.9	33.1	ND	34.6	35.7
Muddy Gap weather station	22.3	25.4	27.6	31.4	29.2	ND
Average TD (degrees Fahrenheit) - 1999	23.3	28.2	30.3	31.2	31.5	33.8
Average TD (degrees Celsius) - 1999	**12.9**	**15.7**	**16.8**	**17.3**	**17.5**	**18.8**
T - 1999						
Encampment 10 ESE weather station	ND	ND	ND	ND	ND	ND
Saratoga 1 ESE weather station	39.6	49.1	59.8	68.4	64.8	53.1
Medicine Bow weather station	37.7	47.2	59.5	ND	64.8	51.7
Muddy Gap weather station	38.9	51.4	61.7	72.1	70.1	ND
Average T (degrees Fahrenheit) - 1999	38.7	49.2	60.3	70.3	66.6	52.4
Average T (degrees Celsius) - 1999	**3.7**	**9.6**	**15.7**	**21.3**	**19.2**	**11.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1999 (inches per month)	**3.10**	**4.71**	**6.16**	**7.14**	**6.09**	**4.00**

Table 2.1.4.7 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Above Pathfinder subbasin (cont)

1993						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1993						
Encampment 10 ESE weather station	22.8	27.6	29.3	33.1	30.8	31.5
Saratoga 1 ESE weather station	22.7	26.5	27.7	33.9	30.7	31.9
Medicine Bow weather station	23.8	28.5	29.1	36.9	34.7	ND
Muddy Gap weather station	23.7	27.1	28.3	32.0	32.0	31.1
Average TD (degrees Fahrenheit) - 1993	23.3	27.4	28.6	34.0	32.1	31.5
Average TD (degrees Celsius) - 1993	**12.9**	**15.2**	**15.9**	**18.9**	**17.8**	**17.5**
T - 1993						
Encampment 10 ESE weather station	35.0	48.2	54.2	59.5	60.0	51.8
Saratoga 1 ESE weather station	39.3	51.3	57.3	61.5	61.5	53.3
Medicine Bow weather station	39.8	51.3	56.4	61.8	61.5	ND
Muddy Gap weather station	41.7	54.1	57.8	62.9	64.5	56.5
Average T (degrees Fahrenheit) - 1993	39.0	51.2	56.4	61.4	61.9	53.9
Average T (degrees Celsius) - 1993	**3.9**	**10.7**	**13.6**	**16.3**	**16.6**	**12.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1993 (inches per month)	**3.12**	**4.83**	**5.62**	**6.51**	**5.71**	**3.98**
1975						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1975						
Encampment 10 ESE weather station	25.5	27.8	30.1	29.5	32.9	35.9
Saratoga 1 ESE weather station	26.5	29.0	32.6	33.4	36.9	38.1
Medicine Bow weather station	27.0	31.3	35.3	37.0	42.5	44.1
Muddy Gap weather station	22.8	28.6	28.7	29.2	31.8	32.6
Average TD (degrees Fahrenheit) - 1975	25.5	29.2	31.7	32.3	36.0	37.7
Average TD (degrees Celsius) - 1975	**14.2**	**16.2**	**17.6**	**17.9**	**20**	**20.9**
T - 1975						
Encampment 10 ESE weather station	35.0	45.7	53.4	63.0	58.9	50.5
Saratoga 1 ESE weather station	36.5	47.8	56.3	67.1	62.5	53.0
Medicine Bow weather station	36.6	46.9	55.5	65.3	61.3	51.4
Muddy Gap weather station	36.1	46.3	58.0	71.6	65.8	54.1
Average T (degrees Fahrenheit) - 1975	36.1	46.7	55.8	66.8	62.1	52.3
Average T (degrees Celsius) - 1975	**2.3**	**8.2**	**13.2**	**19.3**	**16.7**	**11.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1975 (inches per month)	**3.04**	**4.54**	**5.84**	**6.89**	**6.07**	**4.22**

Table 2.1.4.7 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Above Pathfinder subbasin (cont)

1998						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1998						
Encampment 10 ESE weather station	37.1	40.7	39.5	41.6	42.0	45.9
Saratoga 1 ESE weather station	27.6	30.6	29.8	29.8	31.2	31.4
Medicine Bow weather station	28.5	31.9	28.1	32.0	34.9	36.9
Muddy Gap weather station	25.6	ND	25.5	30.9	31.5	28.8
Average TD (degrees Fahrenheit) - 1998	29.7	34.4	30.7	33.6	34.9	35.8
Average TD (degrees Celsius) - 1998	**16.5**	**19.1**	**17.1**	**18.7**	**19.4**	**19.9**
T - 1998						
Encampment 10 ESE weather station	35.7	46.7	47.5	61.6	57.4	53.4
Saratoga 1 ESE weather station	40.4	51.8	54.8	68.1	65.1	60.0
Medicine Bow weather station	39.6	52.0	54.5	68.5	64.9	60.1
Muddy Gap weather station	42.2	ND	55.4	71.3	68.7	62.8
Average T (degrees Fahrenheit) - 1998	39.5	50.2	53.1	67.4	64.0	59.1
Average T (degrees Celsius) - 1998	**4.2**	**10.1**	**11.7**	**19.7**	**17.8**	**15.1**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1998 (inches per month)	**3.58**	**5.30**	**5.48**	**7.12**	**6.17**	**4.65**
1988						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1988						
Encampment 10 ESE weather station	32.3	31.9	33.9	33.4	32.1	30.6
Saratoga 1 ESE weather station	30.5	28.5	30.1	33.1	34.5	31.6
Medicine Bow weather station	33.9	31.5	35.2	38.4	39.2	36.2
Muddy Gap weather station	30.3	30.3	32.9	35.4	ND	33.4
Average TD (degrees Fahrenheit) - 1988	31.8	30.6	33.0	35.1	35.3	33.0
Average TD (degrees Celsius) - 1988	**17.7**	**17**	**18.3**	**19.5**	**19.6**	**18.3**
T - 1988						
Encampment 10 ESE weather station	41.0	47.9	59.5	62.1	62.7	51.8
Saratoga 1 ESE weather station	44.3	51.3	51.3	67.7	64.4	53.9
Medicine Bow weather station	43.3	51.8	65.9	67.5	64.2	53.7
Muddy Gap weather station	46.5	54.6	70.2	72.7	ND	56.1
Average T (degrees Fahrenheit) - 1988	43.8	51.4	61.7	67.5	63.8	53.9
Average T (degrees Celsius) - 1988	**6.6**	**10.8**	**16.5**	**19.7**	**17.7**	**12.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1988 (inches per month)	**4.11**	**5.12**	**6.59**	**7.27**	**6.18**	**4.07**

Table 2.1.4.7 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Above Pathfinder subbasin (cont)

1976						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1976						
Encampment 10 ESE weather station	30.1	31.3	32.1	31.3	32.9	31.8
Saratoga 1 ESE weather station	28.4	32.4	32.1	34.0	34.5	35.2
Medicine Bow weather station	21.6	36.9	37.0	39.3	ND	42.6
Muddy Gap weather station	24.7	30.2	24.8	ND	ND	ND
Average TD (degrees Fahrenheit) - 1976	26.2	32.7	31.5	34.9	33.7	36.5
Average TD (degrees Celsius) - 1976	**14.6**	**18.2**	**17.5**	**19.4**	**18.7**	**20.3**
T - 1976						
Encampment 10 ESE weather station	39.2	48.3	54.9	64.5	59.0	52.1
Saratoga 1 ESE weather station	42.3	51.6	58.2	68.7	63.4	56.2
Medicine Bow weather station	40.9	49.6	56.3	65.9	ND	52.6
Muddy Gap weather station	43.5	53.3	58.8	ND	ND	ND
Average T (degrees Fahrenheit) - 1976	41.5	50.7	57.1	66.4	61.2	53.6
Average T (degrees Celsius) - 1976	**5.3**	**10.4**	**13.9**	**19.1**	**16.2**	**12.0**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1976 (inches per month)	**3.54**	**5.22**	**5.95**	**7.13**	**5.78**	**4.26**
1972						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1972						
Encampment 10 ESE weather station	26.4	30.0	29.0	34.9	ND	31.1
Saratoga 1 ESE weather station	29.6	32.9	30.7	36.3	35.8	32.2
Medicine Bow weather station	29.9	32.9	31.6	35.1	33.5	33.9
Muddy Gap weather station	26.3	29.0	29.1	34.6	32.6	34.2
Average TD (degrees Fahrenheit) - 1972	28.1	31.2	30.1	35.2	34.0	32.9
Average TD (degrees Celsius) - 1972	**15.6**	**17.3**	**16.7**	**19.6**	**18.9**	**18.3**
T - 1972						
Encampment 10 ESE weather station	40.6	48.5	58.6	61.7	ND	53.0
Saratoga 1 ESE weather station	42.8	50.7	62.0	65.3	63.8	55.2
Medicine Bow weather station	41.1	49.5	60.7	63.2	63.1	53.4
Muddy Gap weather station	42.0	51.6	62.4	66.1	64.0	53.2
Average T (degrees Fahrenheit) - 1972	41.6	50.1	60.9	64.1	63.6	53.7
Average T (degrees Celsius) - 1972	**5.3**	**10.1**	**16.1**	**17.8**	**17.6**	**12.1**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1972 (inches per month)	**3.66**	**5.04**	**6.22**	**6.92**	**6.05**	**4.06**

Table 2.1.4.7 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Above Pathfinder subbasin (cont)

1991						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1991						
Encampment 10 ESE weather station	28.1	31.7	31.8	32.3	31.4	31.7
Saratoga 1 ESE weather station	26.3	28.8	29.1	30.2	30.7	30.8
Medicine Bow weather station	28.2	27.5	31.8	34.1	35.0	34.3
Muddy Gap weather station	23.3	24.9	30.2	31.7	32.4	31.1
Average TD (degrees Fahrenheit) - 1991	26.5	28.2	30.7	32.1	32.4	32.0
Average TD (degrees Celsius) - 1991	**14.7**	**15.7**	**17.1**	**17.8**	**18**	**17.8**
T - 1991						
Encampment 10 ESE weather station	35.6	47.4	56.7	62.4	62.9	53.6
Saratoga 1 ESE weather station	39.6	51.9	61.3	64.7	64.8	55.1
Medicine Bow weather station	39.0	51.0	60.9	64.8	64.7	54.7
Muddy Gap weather station	41.0	51.6	62.2	69.0	68.9	57.4
Average T (degrees Fahrenheit) - 1991	38.8	50.5	60.3	65.2	65.3	55.2
Average T (degrees Celsius) - 1991	**3.8**	**10.3**	**15.7**	**18.4**	**18.5**	**12.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1991 (inches per month)	**3.32**	**4.84**	**6.22**	**6.70**	**6.06**	**4.11**
2000						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 2000						
Encampment 10 ESE weather station	ND	ND	ND	ND	ND	ND
Saratoga 1 ESE weather station	32.4	32.3	37.4	36.6	32.7	33.2
Medicine Bow weather station	32.0	31.6	35.6	37.7	36.1	33.7
Muddy Gap weather station	28.1	28.2	32.9	34.9	30.8	26.9
Average TD (degrees Fahrenheit) - 2000	30.8	30.7	35.3	36.4	33.2	31.3
Average TD (degrees Celsius) - 2000	**17.1**	**17.1**	**19.6**	**20.2**	**18.4**	**17.4**
T - 2000						
Encampment 10 ESE weather station	ND	ND	ND	ND	ND	ND
Saratoga 1 ESE weather station	45.1	55.2	60.6	68.1	68.6	55.3
Medicine Bow weather station	44.9	54.0	60.2	67.6	67.3	54.3
Muddy Gap weather station	46.1	56.8	62.0	72.3	73.3	57.8
Average T (degrees Fahrenheit) - 2000	45.4	55.3	60.9	69.3	69.7	55.8
Average T (degrees Celsius) - 2000	**7.4**	**12.9**	**16.1**	**20.7**	**20.9**	**13.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 2000 (inches per month)	**4.18**	**5.51**	**6.74**	**7.59**	**6.53**	**4.10**

Table 2.1.4.7 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Above Pathfinder subbasin (cont)

1990						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1990						
Encampment 10 ESE weather station	29.0	35.3	33.8	29.0	31.6	30.5
Saratoga 1 ESE weather station	27.8	31.2	33.3	29.2	31.1	31.1
Medicine Bow weather station	29.7	32.9	36.6	32.3	36.9	34.5
Muddy Gap weather station	28.5	28.5	33.4	30.7	32.8	31.2
Average TD (degrees Fahrenheit) - 1990	28.8	32.0	34.3	30.3	33.1	31.8
Average TD (degrees Celsius) - 1990	**16.0**	**17.8**	**19.1**	**16.8**	**18.4**	**17.7**
T - 1990						
Encampment 10 ESE weather station	39.4	43.9	43.9	62.6	62.0	57.8
Saratoga 1 ESE weather station	43.7	48.7	61.6	64.9	63.9	59.8
Medicine Bow weather station	42.4	48.1	61.8	65.0	63.2	58.9
Muddy Gap weather station	45.4	49.3	63.8	68.5	67.7	62.0
Average T (degrees Fahrenheit) - 1990	42.7	47.5	57.8	65.3	64.2	59.6
Average T (degrees Celsius) - 1990	**5.9**	**8.6**	**14.3**	**18.5**	**17.9**	**15.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1990 (inches per month)	**3.80**	**4.84**	**6.30**	**6.53**	**6.02**	**4.42**
1994						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.44**	**19.71**	**20.25**	**20.41**	**18.25**	**14.26**
TD - 1994						
Encampment 10 ESE weather station	27.8	35.2	38.6	40.5	37.5	35.6
Saratoga 1 ESE weather station	27.3	31.8	34.7	33.9	33.4	33.4
Medicine Bow weather station	30.1	33.9	37.3	36.6	35.9	38.4
Muddy Gap weather station	28.4	33.0	35.6	ND	34.8	32.0
Average TD (degrees Fahrenheit) - 1994	28.4	33.5	36.6	37.0	35.4	34.9
Average TD (degrees Celsius) - 1994	**15.8**	**18.6**	**20.3**	**20.6**	**19.7**	**19.4**
T - 1994						
Encampment 10 ESE weather station	40.2	51.5	58.3	61.0	61.9	55.1
Saratoga 1 ESE weather station	43.0	54.5	62.5	65.4	65.6	56.3
Medicine Bow weather station	41.8	54.6	63.1	65.6	66.0	55.3
Muddy Gap weather station	44.4	57.0	64.6	ND	70.3	59.8
Average T (degrees Fahrenheit) - 1994	42.4	54.4	62.1	64.0	66.0	56.6
Average T (degrees Celsius) - 1994	**5.8**	**12.4**	**16.7**	**17.8**	**18.9**	**13.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1994 (inches per month)	**3.76**	**5.66**	**6.98**	**7.09**	**6.41**	**4.40**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.8 Summary – reference evapotranspiration, ET_O, values - all flow years - Above Pathfinder subbasin

High flow years (1)		Monthly reference evapotranspiration, ET_O (inches per month)					
No.	Year	Apr	May	Jun	Jul	Aug	Sep
1	1984	2.80	5.21	5.97	6.78	5.88	3.95
2	1983	2.75	4.22	5.62	6.65	6.13	4.36
3	1985	3.97	5.29	6.44	6.72	6.27	3.69
4	1986	3.48	4.93	6.81	6.33	6.12	3.69
5	1973	2.56	4.72	6.14	6.33	6.07	3.94
6	1997	3.13	5.06	6.37	7.01	5.82	4.15
	High flow averages:	**3.12**	**4.91**	**6.23**	**6.64**	**6.05**	**3.96**
Low flow years (2)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	Year	Apr	May	Jun	Jul	Aug	Sep
7	2001	3.64	5.24	6.61	7.47	6.47	4.56
8	1987	4.26	4.93	6.41	6.61	5.69	4.30
9	1981	4.26	4.24	6.57	6.91	6.07	4.33
10	1992	4.22	5.24	5.96	6.28	5.92	4.24
11	1989	3.98	5.25	6.14	7.19	5.79	4.18
12	1977	3.98	5.27	7.23	7.03	5.88	4.47
	Low flow averages:	**4.06**	**5.03**	**6.49**	**6.92**	**5.97**	**4.35**
Normal or average flow years (3)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	Year	Apr	May	Jun	Jul	Aug	Sep
13	1995	3.33	3.95	5.49	6.59	6.44	4.05
14	1974	3.39	5.26	6.64	6.91	5.97	4.19
15	1980	3.35	4.73	6.76	7.00	5.93	4.29
16	1982	3.51	4.57	5.85	6.67	6.05	3.73
17	1978	3.79	4.65	6.31	7.29	5.98	4.36
18	1996	3.63	4.88	6.67	7.18	6.50	4.04
19	1979	3.51	4.69	6.44	7.09	5.56	4.69
20	1999	3.10	4.71	6.16	7.14	6.09	4.00
21	1993	3.12	4.83	5.62	6.51	5.71	3.98
22	1975	3.04	4.54	5.84	6.89	6.07	4.22
23	1998	3.58	5.30	5.48	7.12	6.17	4.65
24	1988	4.11	5.12	6.59	7.27	6.18	4.07
25	1976	3.54	5.22	5.95	7.13	5.78	4.26
26	1972	3.66	5.04	6.22	6.92	6.05	4.06
27	1991	3.32	4.84	6.22	6.70	6.06	4.11
28	2000	4.18	5.51	6.74	7.59	6.53	4.10
29	1990	3.80	4.84	6.30	6.53	6.02	4.42
30	1994	3.76	5.66	6.98	7.09	6.41	4.40
	Normal flow year averages:	**3.54**	**4.91**	**6.24**	**6.98**	**6.08**	**4.20**

Notes:
(1) See Table 2.1.4.5.
(2) See Table 2.1.4.6.
(3) See Table 2.1.4.7.

2.1.4.3.5.2 Reference Evapotranspiration, ET_O – Pathfinder to Guernsey Subbasin

Table 2.1.4.9 contains a summary of Pathfinder to Guernsey subbasin high, low, and normal or average stream flow years during the study period. The Pathfinder to Guernsey subbasin study period is 21 years long, 1972 through 1992, inclusive, rather than the desired 30 years between 1972 and 2001, inclusive, because of a lack of stream flow data in this subbasin for the full 30 year study period. Table 2.1.4.9 contains information from Table 3.1.1.5 in Technical Memorandum 3.1.

Table 2.1.4.9 Summary – high stream flow, low stream flow, and normal or average stream flow years - Pathfinder to Guernsey subbasin

No.	Year
1	1983
2	1973
3	1984
4	1986
5	1988
6	1991
7	1972
8	1978
9	1980
10	1974
11	1976
12	1975
13	1977
14	1982
15	1979
16	1987
17	1990
18	1981
19	1992
20	1985
21	1989
	designates high stream flow year
	designates low stream flow year

Years which are neither shaded or outlined are normal or average stream flow years
See Table 3.1.1.5. in Technical Memorandum 3.1., Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year Determination

Tables 2.1.4.10, 2.1.4.11, and 2.1.4.12 contain reference evapotranspiration, ET_O, calculation parameters and values for high flow, low flow, and normal or average stream flow years, respectively, in the Pathfinder to Guernsey subbasin. Table 2.1.4.13 contains a summary of derived ET_O values for the Pathfinder to Guernsey subbasin for the available period of record during the study period.

Table 2.1.4.10 Summary – reference evapotranspiration, ET_O, calculations - high flow years - Pathfinder to Guernsey subbasin

1983						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1983						
Casper WSO AP weather station	22.6	27.3	27.2	34.7	33.9	36.0
Glenrock 5 ESE weather station	21.9	26.9	28.8	ND	ND	34.5
Douglas 1ESE/Douglas weather stations	22.8	ND	25.2	30.4	29.5	33.9
Average TD (degrees Fahrenheit) - 1983	22.4	27.1	27.1	32.6	31.7	34.8
Average TD (degrees Celsius) - 1983	**12.4**	**15.1**	**15.1**	**18.1**	**17.6**	**19.3**
T - 1983						
Casper WSO AP weather station	38.0	48.4	60.4	71.2	74.7	60.3
Glenrock 5 ESE weather station	39.7	51.4	63.2	ND	ND	61.2
Douglas 1ESE/Douglas weather stations	37.5	ND	60.1	70.1	73.6	59.6
Average T (degrees Fahrenheit) - 1983	38.4	49.9	61.2	70.7	74.2	60.4
Average T (degrees Celsius) - 1983	**3.6**	**9.9**	**16.2**	**21.5**	**23.4**	**15.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1983 (inches per month)	**2.99**	**4.66**	**5.93**	**7.34**	**6.75**	**4.61**
1973						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1973						
Casper WSO AP weather station	20.9	29.6	32.8	31.0	34.7	25.6
Glenrock 5 ESE weather station	23.3	31.8	35.2	35.3	36.4	31.4
Douglas 1ESE/Douglas weather stations	24.0	32.6	33.6	30.3	34.7	ND
Average TD (degrees Fahrenheit) - 1973	22.7	31.3	33.9	32.2	35.3	28.5
Average TD (degrees Celsius) - 1973	**12.6**	**17.4**	**18.8**	**17.9**	**19.6**	**15.8**
T - 1973						
Casper WSO AP weather station	36.1	51.1	63.0	68.4	70.6	55.0
Glenrock 5 ESE weather station	37.9	52.1	66.1	70.7	72.3	56.6
Douglas 1ESE/Douglas weather stations	36.4	50.6	61.9	68.0	69.2	ND
Average T (degrees Fahrenheit) - 1973	36.8	51.3	63.7	69.0	70.7	55.8
Average T (degrees Celsius) - 1973	**2.7**	**10.7**	**17.6**	**20.6**	**21.5**	**13.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1973 (inches per month)	**2.89**	**5.15**	**6.89**	**7.13**	**6.80**	**3.85**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.11 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Pathfinder to Guernsey subbasin

1981						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1981						
Casper WSO AP weather station	28.8	24.1	32.8	33.4	35.2	35.6
Glenrock 5 ESE weather station	29.1	22.3	31.6	32.4	32.2	34.4
Douglas 1ESE/Douglas weather stations	28.9	22.0	30.0	30.3	31.3	34.2
Average TD (degrees Fahrenheit) - 1981	28.9	22.8	31.5	32.0	32.9	34.7
Average TD (degrees Celsius) - 1981	**16.1**	**12.7**	**17.5**	**17.8**	**18.3**	**19.3**
T - 1981						
Casper WSO AP weather station	48.3	51.3	64.3	71.8	69.2	62.0
Glenrock 5 ESE weather station	51.3	53.2	67.1	73.9	70.6	63.0
Douglas 1ESE/Douglas weather stations	50.1	51.7	65.2	71.8	68.2	61.4
Average T (degrees Fahrenheit) - 1981	49.9	52.1	65.5	72.5	69.3	62.1
Average T (degrees Celsius) - 1981	**9.9**	**11.2**	**18.6**	**22.5**	**20.7**	**16.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1981 (inches per month)	**4.41**	**4.48**	**6.84**	**7.46**	**6.44**	**4.73**
1992						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1992						
Casper WSO AP weather station	32.5	31.1	30.0	29.5	32.2	35.6
Glenrock 5 ESE weather station	30.4	31.4	28.9	28.2	30.2	35.9
Douglas 1ESE/Douglas weather stations	34.1	32.9	30.1	29.9	32.5	39.0
Average TD (degrees Fahrenheit) - 1992	32.3	31.8	29.7	29.2	31.6	36.8
Average TD (degrees Celsius) - 1992	**17.9**	**17.7**	**16.5**	**16.2**	**17.6**	**20.4**
T - 1992						
Casper WSO AP weather station	49.0	56.2	63.7	67.2	68.4	61.1
Glenrock 5 ESE weather station	50.8	58.5	64.1	68.0	67.9	61.1
Douglas 1ESE/Douglas weather stations	48.7	56.5	63.9	66.5	65.9	59.4
Average T (degrees Fahrenheit) - 1992	49.5	57.1	63.9	67.2	67.4	60.5
Average T (degrees Celsius) - 1992	**9.7**	**13.9**	**17.7**	**19.6**	**19.7**	**15.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1992 (inches per month)	**4.62**	**5.78**	**6.47**	**6.60**	**6.15**	**4.74**

Table 2.1.4.11 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Pathfinder to Guernsey subbasin (cont)

1985						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1985						
Casper WSO AP weather station	30.2	31.4	33.5	33.2	36.1	27.6
Glenrock 5 ESE weather station	29.9	30.0	33.5	32.9	37.1	25.4
Douglas 1ESE/Douglas weather stations	33.4	33.3	ND	34.3	37.9	27.4
Average TD (degrees Fahrenheit) - 1985	31.2	31.6	33.5	33.5	37.0	26.8
Average TD (degrees Celsius) - 1985	**17.3**	**17.6**	**18.6**	**18.6**	**20.6**	**14.9**
T - 1985						
Casper WSO AP weather station	45.5	55.3	61.3	71.6	66.7	53.4
Glenrock 5 ESE weather station	47.5	56.4	62.0	74.5	69.6	54.7
Douglas 1ESE/Douglas weather stations	46.6	56.8	ND	71.9	66.8	54.8
Average T (degrees Fahrenheit) - 1985	46.5	56.2	61.7	72.7	67.7	54.3
Average T (degrees Celsius) - 1985	**8.1**	**13.4**	**16.5**	**22.6**	**19.8**	**12.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1985 (inches per month)	**4.28**	**5.67**	**6.64**	**7.64**	**6.67**	**3.64**
1989						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1989						
Casper WSO AP weather station	31.8	30.7	30.8	36.0	34.2	30.5
Glenrock 5 ESE weather station	29.4	27.1	30.9	34.0	30.2	31.9
Douglas 1ESE/Douglas weather stations	30.1	30.9	32.2	34.8	33.5	33.4
Average TD (degrees Fahrenheit) - 1989	30.4	29.6	31.3	34.9	32.6	31.9
Average TD (degrees Celsius) - 1989	**16.9**	**16.4**	**17.4**	**19.4**	**18.1**	**17.7**
T - 1989						
Casper WSO AP weather station	44.9	53.9	61.2	73.4	69.0	58.2
Glenrock 5 ESE weather station	47.7	54.3	62.3	72.4	68.2	58.7
Douglas 1ESE/Douglas weather stations	45.7	54.4	61.4	72.8	69.2	57.3
Average T (degrees Fahrenheit) - 1989	46.1	54.2	61.6	72.9	68.8	58.1
Average T (degrees Celsius) - 1989	**7.8**	**12.3**	**16.4**	**22.7**	**20.4**	**14.5**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1989 (inches per month)	**4.18**	**5.28**	**6.41**	**7.83**	**6.35**	**4.24**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.12 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Pathfinder to Guernsey subbasin

1984						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1984						
Casper WSO AP weather station	25.4	31.6	33.0	33.0	34.5	33.6
Glenrock 5 ESE weather station	24.1	31.3	ND	ND	29.9	ND
Douglas 1ESE/Douglas weather stations	23.0	31.1	30.6	32.4	33.5	33.9
Average TD (degrees Fahrenheit) - 1984	24.2	31.3	31.8	32.7	32.6	33.8
Average TD (degrees Celsius) - 1984	**13.4**	**17.4**	**17.7**	**18.2**	**18.1**	**18.8**
T - 1984						
Casper WSO AP weather station	39.1	54.5	61.5	70.4	71.1	52.5
Glenrock 5 ESE weather station	39.5	54.9	ND	ND	72.8	ND
Douglas 1ESE/Douglas weather stations	38.6	53.6	61.6	71.4	70.5	53.8
Average T (degrees Fahrenheit) - 1984	39.1	54.3	61.6	70.9	71.5	53.2
Average T (degrees Celsius) - 1984	**3.9**	**12.4**	**16.4**	**21.6**	**21.9**	**11.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1984 (inches per month)	**3.15**	**5.46**	**6.46**	**7.37**	**6.60**	**4.01**
1986						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1986						
Casper WSO AP weather station	27.3	31.7	31.4	32.0	34.6	25.9
Glenrock 5 ESE weather station	24.8	30.2	33.9	33.3	33.7	23.3
Douglas 1ESE/Douglas weather stations	25.9	30.9	30.2	33.7	34.3	26.8
Average TD (degrees Fahrenheit) - 1986	26.0	30.9	31.8	33.0	34.2	25.3
Average TD (degrees Celsius) - 1986	**14.4**	**17.2**	**17.7**	**18.3**	**19**	**14.1**
T - 1986						
Casper WSO AP weather station	44.4	50.9	67.4	69.0	69.3	55.4
Glenrock 5 ESE weather station	47.0	54.8	70.3	70.1	71.4	58.3
Douglas 1ESE/Douglas weather stations	44.3	51.3	65.6	68.4	68.8	55.5
Average T (degrees Fahrenheit) - 1986	45.2	52.3	67.8	69.2	69.8	56.4
Average T (degrees Celsius) - 1986	**7.3**	**11.3**	**19.9**	**20.7**	**21**	**13.6**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1986 (inches per month)	**3.78**	**5.23**	**7.12**	**7.23**	**6.61**	**3.68**

Table 2.1.4.12 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Pathfinder to Guernsey subbasin (cont)

1988						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1988						
Casper WSO AP weather station	33.5	30.9	34.5	36.2	36.3	31.3
Glenrock 5 ESE weather station	34.9	33.4	33.9	39.7	38.5	36.9
Douglas 1ESE/Douglas weather stations	36.9	32.0	35.1	35.1	37.0	35.5
Average TD (degrees Fahrenheit) - 1988	35.1	32.1	34.5	37.0	37.3	34.6
Average TD (degrees Celsius) - 1988	**19.5**	**17.8**	**19.2**	**20.6**	**20.7**	**19.2**
T - 1988						
Casper WSO AP weather station	45.9	54.1	72.5	73.5	69.8	58.0
Glenrock 5 ESE weather station	49.3	58.2	75.3	76.0	72.7	61.4
Douglas 1ESE/Douglas weather stations	46.1	55.6	70.9	72.2	69.2	57.4
Average T (degrees Fahrenheit) - 1988	47.1	56.0	72.9	73.9	70.6	58.9
Average T (degrees Celsius) - 1988	**8.4**	**13.3**	**22.7**	**23.3**	**21.4**	**14.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1988 (inches per month)	**4.59**	**5.68**	**7.97**	**8.18**	**6.97**	**4.47**
1991						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1991						
Casper WSO AP weather station	23.6	24.6	31.1	33.6	33.8	32.1
Glenrock 5 ESE weather station	22.8	22.5	26.5	31.2	29.7	29.4
Douglas 1ESE/Douglas weather stations	25.4	23.2	28.3	34.0	34.3	32.2
Average TD (degrees Fahrenheit) - 1991	23.9	23.4	28.6	32.9	32.6	31.2
Average TD (degrees Celsius) - 1991	**13.3**	**13**	**15.9**	**18.3**	**18.1**	**17.3**
T - 1991						
Casper WSO AP weather station	42.0	51.8	64.9	71.5	72.0	59.4
Glenrock 5 ESE weather station	39.8	50.6	62.0	68.2	66.7	55.4
Douglas 1ESE/Douglas weather stations	43.1	54.2	65.0	71.0	70.7	59.8
Average T (degrees Fahrenheit) - 1991	41.6	52.2	64.0	70.2	69.8	58.2
Average T (degrees Celsius) - 1991	**5.3**	**11.2**	**17.8**	**21.2**	**21.0**	**14.6**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1991 (inches per month)	**3.34**	**4.53**	**6.37**	**7.32**	**6.45**	**4.21**

Table 2.1.4.12 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Pathfinder to Guernsey subbasin (cont)

1972						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1972						
Casper WSO AP weather station	26.8	28.0	32.8	35.0	31.2	34.2
Glenrock 5 ESE weather station	29.2	29.9	34.3	40.4	35.4	39.5
Douglas 1ESE/Douglas weather stations	26.7	27.0	30.7	31.8	30.6	33.5
Average TD (degrees Fahrenheit) - 1972	27.6	28.3	32.6	35.7	32.4	35.7
Average TD (degrees Celsius) - 1972	**15.3**	**15.7**	**18.1**	**19.8**	**18.0**	**19.8**
T - 1972						
Casper WSO AP weather station	43.0	52.1	65.0	65.9	68.0	56.7
Glenrock 5 ESE weather station	45.5	55.3	66.0	68.9	69.5	57.8
Douglas 1ESE/Douglas weather stations	42.8	53.0	64.2	65.9	68.2	56.8
Average T (degrees Fahrenheit) - 1972	43.8	53.5	65.1	66.9	68.6	57.1
Average T (degrees Celsius) - 1972	**6.6**	**11.9**	**18.4**	**19.4**	**20.3**	**13.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1972 (inches per month)	**3.79**	**5.10**	**6.91**	**7.26**	**6.32**	**4.40**
1978						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1978						
Casper WSO AP weather station	26.4	23.1	31.6	33.2	30.6	33.5
Glenrock 5 ESE weather station	24.0	24.9	30.9	33.6	32.0	34.9
Douglas 1ESE/Douglas weather stations	24.2	24.4	32.6	30.4	32.9	36.7
Average TD (degrees Fahrenheit) - 1978	24.9	24.1	31.7	32.4	31.8	35.0
Average TD (degrees Celsius) - 1978	**13.8**	**13.4**	**17.6**	**18.0**	**17.7**	**19.4**
T - 1978						
Casper WSO AP weather station	44.6	49.6	63.6	69.6	66.8	60.1
Glenrock 5 ESE weather station	47.2	51.9	65.3	71.4	67.4	61.3
Douglas 1ESE/Douglas weather stations	45.7	49.8	62.5	69.4	64.9	59.6
Average T (degrees Fahrenheit) - 1978	45.8	50.4	63.8	70.1	66.4	60.3
Average T (degrees Celsius) - 1978	**7.7**	**10.2**	**17.7**	**21.2**	**19.1**	**15.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1978 (inches per month)	**3.76**	**4.44**	**6.69**	**7.26**	**6.07**	**4.61**

Table 2.1.4.12 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Pathfinder to Guernsey subbasin (cont)

1980						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1980						
Casper WSO AP weather station	29.0	28.1	37.4	35.4	34.2	35.1
Glenrock 5 ESE weather station	26.6	25.6	34.9	35.5	33.3	34.9
Douglas 1ESE/Douglas weather stations	30.8	26.9	34.3	ND	30.9	35.3
Average TD (degrees Fahrenheit) - 1980	28.8	26.9	35.5	35.5	32.8	35.1
Average TD (degrees Celsius) - 1980	**16.0**	**14.9**	**19.7**	**19.7**	**18.2**	**19.5**
T - 1980						
Casper WSO AP weather station	44.2	51.6	64.4	72.2	66.4	59.6
Glenrock 5 ESE weather station	45.6	51.5	65.6	74.4	70.2	61.9
Douglas 1ESE/Douglas weather stations	43.9	51.8	65.4	ND	66.8	59.7
Average T (degrees Fahrenheit) - 1980	44.6	51.6	65.1	73.3	67.8	60.4
Average T (degrees Celsius) - 1980	**7**	**10.9**	**18.4**	**22.9**	**19.9**	**15.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1980 (inches per month)	**3.94**	**4.80**	**7.21**	**7.92**	**6.28**	**4.63**
1974						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1974						
Casper WSO AP weather station	22.9	29.8	33.0	31.3	32.8	31.3
Glenrock 5 ESE weather station	25.2	30.5	33.9	34.1	36.5	37.0
Douglas 1ESE/Douglas weather stations	25.7	32.6	ND	34.3	34.5	36.7
Average TD (degrees Fahrenheit) - 1974	24.6	31.0	33.5	33.2	34.6	35.0
Average TD (degrees Celsius) - 1974	**13.7**	**17.2**	**18.6**	**18.4**	**19.2**	**19.4**
T - 1974						
Casper WSO AP weather station	43.0	51.4	64.9	72.5	64.4	54.3
Glenrock 5 ESE weather station	45.6	55.9	66.7	73.7	67.9	57.1
Douglas 1ESE/Douglas weather stations	43.9	52.4	ND	72.1	65.0	53.5
Average T (degrees Fahrenheit) - 1974	44.2	53.2	65.8	72.8	65.8	55.0
Average T (degrees Celsius) - 1974	**6.8**	**11.8**	**18.8**	**22.7**	**18.8**	**12.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1974 (inches per month)	**3.61**	**5.32**	**7.09**	**7.62**	**6.27**	**4.21**

Table 2.1.4.12 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Pathfinder to Guernsey subbasin (cont)

1976						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1976						
Casper WSO AP weather station	25.4	29.4	31.8	29.5	32.1	30.0
Glenrock 5 ESE weather station	24.6	30.2	30.1	ND	32.9	67.3
Douglas 1ESE/Douglas weather stations	24.7	29.4	29.5	31.2	33.9	34.7
Average TD (degrees Fahrenheit) - 1976	24.9	29.7	30.5	30.4	33.0	44.0
Average TD (degrees Celsius) - 1976	**13.8**	**16.5**	**16.9**	**16.9**	**18.3**	**24.4**
T - 1976						
Casper WSO AP weather station	44.0	53.6	60.7	72.8	68.4	59.2
Glenrock 5 ESE weather station	46.9	56.8	62.8	ND	70.5	61.9
Douglas 1ESE/Douglas weather stations	44.6	54.2	60.8	72.3	68.5	58.2
Average T (degrees Fahrenheit) - 1976	45.2	54.9	61.4	72.6	69.1	59.8
Average T (degrees Celsius) - 1976	**7.3**	**12.7**	**16.3**	**22.6**	**20.6**	**15.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1976 (inches per month)	**3.70**	**5.37**	**6.29**	**7.29**	**6.42**	**5.12**
1975						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1975						
Casper WSO AP weather station	22.0	25.1	29.4	31.3	34.0	35.5
Glenrock 5 ESE weather station	23.9	27.2	29.7	30.0	ND	35.8
Douglas 1ESE/Douglas weather stations	25.9	27.9	ND	33.0	33.6	ND
Average TD (degrees Fahrenheit) - 1975	23.9	26.7	29.6	31.4	33.8	35.7
Average TD (degrees Celsius) - 1975	**13.3**	**14.8**	**16.4**	**17.4**	**18.8**	**19.8**
T - 1975						
Casper WSO AP weather station	37.7	48.8	58.8	72.9	68.0	56.7
Glenrock 5 ESE weather station	40.8	54.0	63.5	76.2	ND	58.5
Douglas 1ESE/Douglas weather stations	39.7	50.8	ND	72.5	68.2	ND
Average T (degrees Fahrenheit) - 1975	39.4	51.2	61.2	73.9	68.1	57.6
Average T (degrees Celsius) - 1975	**4.1**	**10.7**	**16.2**	**23.3**	**20.1**	**14.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1975 (inches per month)	**3.17**	**4.75**	**6.18**	**7.52**	**6.42**	**4.45**

Table 2.1.4.12 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Pathfinder to Guernsey subbasin (cont)

1977						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1977						
Casper WSO AP weather station	26.6	29.4	32.3	31.8	31.6	36.4
Glenrock 5 ESE weather station	27.0	26.1	31.6	29.4	31.3	34.3
Douglas 1ESE/Douglas weather stations	29.5	28.5	32.8	29.5	28.9	35.8
Average TD (degrees Fahrenheit) - 1977	27.7	28.0	32.2	30.2	30.6	35.5
Average TD (degrees Celsius) - 1977	**15.4**	**15.6**	**17.9**	**16.8**	**17.0**	**19.7**
T - 1977						
Casper WSO AP weather station	46.5	55.1	69.3	71.7	66.1	60.3
Glenrock 5 ESE weather station	48.0	56.9	70.0	73.9	73.9	63.6
Douglas 1ESE/Douglas weather stations	46.3	55.3	68.4	71.0	66.2	61.1
Average T (degrees Fahrenheit) - 1977	46.9	55.8	69.2	72.2	68.7	61.7
Average T (degrees Celsius) - 1977	**8.3**	**13.2**	**20.7**	**22.3**	**20.4**	**16.5**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1977 (inches per month)	**4.07**	**5.30**	**7.31**	**7.21**	**6.15**	**4.75**
1982						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1982						
Casper WSO AP weather station	28.6	26.6	28.0	34.4	34.1	27.6
Glenrock 5 ESE weather station	27.5	24.6	23.1	32.2	31.5	27.8
Douglas 1ESE/Douglas weather stations	29.8	25.4	24.6	31.2	ND	ND
Average TD (degrees Fahrenheit) - 1982	28.6	25.5	25.2	32.6	32.8	27.7
Average TD (degrees Celsius) - 1982	**15.9**	**14.2**	**14.0**	**18.1**	**18.2**	**15.4**
T - 1982						
Casper WSO AP weather station	41.1	51.1	60.3	70.7	73.7	56.9
Glenrock 5 ESE weather station	43.1	53.3	61.0	72.4	75.5	58.6
Douglas 1ESE/Douglas weather stations	41.7	50.9	59.2	69.3	ND	ND
Average T (degrees Fahrenheit) - 1982	42.0	51.8	60.2	70.8	74.6	57.8
Average T (degrees Celsius) - 1982	**5.6**	**11.0**	**15.7**	**21.6**	**23.7**	**14.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1982 (inches per month)	**3.70**	**4.70**	**5.63**	**7.35**	**6.92**	**3.93**

Table 2.1.4.12 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Pathfinder to Guernsey subbasin (cont)

1979						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1979						
Casper WSO AP weather station	28.5	26.9	34.3	36.0	29.5	38.4
Glenrock 5 ESE weather station	27.7	26.9	31.7	33.4	27.6	36.3
Douglas 1ESE/Douglas weather stations	29.7	27.4	31.3	ND	28.2	ND
Average TD (degrees Fahrenheit) - 1979	28.6	27.1	32.4	34.7	28.4	37.4
Average TD (degrees Celsius) - 1979	**15.9**	**15.1**	**18.0**	**19.3**	**15.8**	**20.8**
T - 1979						
Casper WSO AP weather station	43.7	49.3	61.8	70.8	67.6	62.1
Glenrock 5 ESE weather station	46.8	53.3	65.7	73.6	69.3	64.1
Douglas 1ESE/Douglas weather stations	44.4	50.4	62.4	ND	67.0	ND
Average T (degrees Fahrenheit) - 1979	45.0	51.0	63.3	72.2	68.0	63.1
Average T (degrees Celsius) - 1979	**7.2**	**10.6**	**17.4**	**22.3**	**20.0**	**17.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1979 (inches per month)	**3.96**	**4.78**	**6.71**	**7.73**	**5.87**	**5.00**
1987						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1987						
Casper WSO AP weather station	31.2	27.9	34.6	33.9	33.1	34.3
Glenrock 5 ESE weather station	33.5	28.2	34.2	33.7	ND	ND
Douglas 1ESE/Douglas weather stations	33.8	29.2	34.0	34.8	32.8	37.8
Average TD (degrees Fahrenheit) - 1987	32.8	28.4	34.3	34.1	33.0	36.1
Average TD (degrees Celsius) - 1987	**18.2**	**15.8**	**19.1**	**18.9**	**18.3**	**20.1**
T - 1987						
Casper WSO AP weather station	49.7	57.4	64.8	70.7	66.1	58.6
Glenrock 5 ESE weather station	52.8	60.3	67.1	73.1	ND	ND
Douglas 1ESE/Douglas weather stations	48.3	58.2	64.1	70.7	65.9	57.8
Average T (degrees Fahrenheit) - 1987	50.3	58.6	65.3	71.5	66.0	58.2
Average T (degrees Celsius) - 1987	**10.2**	**14.8**	**18.5**	**21.9**	**18.9**	**14.6**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1987 (inches per month)	**4.74**	**5.61**	**7.12**	**7.57**	**6.13**	**4.54**

Table 2.1.4.12 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Pathfinder to Guernsey subbasin (cont)

1990						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.28**	**19.66**	**20.25**	**20.40**	**18.13**	**14.04**
TD - 1990						
Casper WSO AP weather station	27.3	31.0	35.7	31.2	33.8	33.8
Glenrock 5 ESE weather station	25.9	27.1	34.2	29.6	31.5	31.1
Douglas 1ESE/Douglas weather stations	ND	28.9	ND	30.0	34.5	35.8
Average TD (degrees Fahrenheit) - 1990	26.6	29.0	35.0	30.3	33.3	33.6
Average TD (degrees Celsius) - 1990	**14.8**	**16.1**	**19.4**	**16.8**	**18.5**	**18.7**
T - 1990						
Casper WSO AP weather station	44.3	50.5	64.6	69.8	68.5	63.2
Glenrock 5 ESE weather station	45.6	52.6	66.3	70.2	68.1	61.3
Douglas 1ESE/Douglas weather stations	ND	51.7	ND	69.7	68.3	62.9
Average T (degrees Fahrenheit) - 1990	45.0	51.6	65.5	69.9	68.3	62.5
Average T (degrees Celsius) - 1990	**7.2**	**10.9**	**18.6**	**21.1**	**20.2**	**16.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1990 (inches per month)	**3.82**	**4.99**	**7.20**	**6.99**	**6.39**	**4.69**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.13 Summary – reference evapotranspiration, ET_O, values - all flow years - Pathfinder to Guernsey subbasin

Pathfinder to Guernsey subbasin							
High flow years (1)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	**Year**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
1	1983	2.99	4.66	5.93	7.34	6.75	4.61
2	1973	2.89	5.15	6.89	7.13	6.80	3.85
	High flow averages:	**2.94**	**4.91**	**6.41**	**7.24**	**6.78**	**4.23**
Low flow years (2)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	**Year**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
3	1981	4.41	4.48	6.84	7.46	6.44	4.73
4	1992	4.62	5.78	6.47	6.60	6.15	4.74
5	1985	4.28	5.67	6.64	7.64	6.67	3.64
6	1989	4.18	5.28	6.41	7.83	6.35	4.24
	Low flow averages:	**4.37**	**5.30**	**6.59**	**7.38**	**6.40**	**4.34**
Normal or average flow years (3)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	**Year**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
7	1984	3.15	5.46	6.46	7.37	6.60	4.01
8	1986	3.78	5.23	7.12	7.23	6.61	3.68
9	1988	4.59	5.68	7.97	8.18	6.97	4.47
10	1991	3.34	4.53	6.37	7.32	6.45	4.21
11	1972	3.79	5.10	6.91	7.26	6.32	4.40
12	1978	3.76	4.44	6.69	7.26	6.07	4.61
13	1980	3.94	4.80	7.21	7.92	6.28	4.63
14	1974	3.61	5.32	7.09	7.62	6.27	4.21
15	1976	3.70	5.37	6.29	7.29	6.42	5.12
16	1975	3.17	4.75	6.18	7.52	6.42	4.45
17	1977	4.07	5.30	7.31	7.21	6.15	4.75
18	1982	3.70	4.70	5.63	7.35	6.92	3.93
19	1979	3.96	4.78	6.71	7.73	5.87	5.00
20	1987	4.74	5.61	7.12	7.57	6.13	4.54
21	1990	3.82	4.99	7.20	6.99	6.39	4.69
	Normal flow year averages:	**3.81**	**5.07**	**6.82**	**7.45**	**6.39**	**4.45**

Notes:

1. See Table 2.1.4.10.
2. See Table 2.1.4.11.
3. See Table 2.1.4.12.

2.1.4.3.5.3 Reference Evapotranspiration, ET_O – Guernsey to State Line Subbasin

Table 2.1.4.14 contains a summary of Guernsey to State Line subbasin high, low, and normal or average stream flow years during the 1972 through 2001 study period. As was the case with the Pathfinder to Guernsey subbasin, the Guernsey to State Line study period is 21 years long, 1972 through 1992, inclusive, rather than the desired 30 years between 1972 and 2001, inclusive, because of a lack of stream flow data in this subbasin for the full 30 year study period. Table 2.1.4.14 contains information from Table 3.1.1.5 in Technical Memorandum 3.1.

Table 2.1.4.14 Summary – high stream flow, low stream flow, and normal or average stream flow years - Guernsey to State Line subbasin

No.	Year
1	1986
2	1984
3	1985
4	1973
5	1974
6	1983
7	1988
8	1982
9	1987
10	1979
11	1976
12	1980
13	1977
14	1978
15	1981
16	1975
17	1991
18	1972
19	1989
20	1990
21	1992
	designates high stream flow years
	designates low stream flow years

Years which are neither shaded or outlined are normal or average stream flow years
See Table 3.1.1.5. in Technical Memorandum 3.1., Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year Determination

Tables 2.1.4.15, 2.1.4.16, and 2.1.4.17 contain reference evapotranspiration, ET_O, calculation parameters and values for high flow, low flow, and normal or average stream flow years, respectively, in the Guernsey to State Line subbasin. Table 2.1.4.18 contains a summary of ET_O values for the Guernsey to State Line subbasin for all years of available record during the study period.

Table 2.1.4.15 Summary – reference evapotranspiration, ET_O, calculations - high flow years - Guernsey to State Line subbasin

1986						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1986						
Torrington Experimental Farm weather station	26.2	29.4	30.5	33.6	36.1	29.2
TD (degrees Celsius) - 1986	**14.6**	**16.3**	**16.9**	**18.7**	**20.1**	**16.2**
T - 1986						
Torrington Experimental Farm weather station	46.4	54.6	69.0	70.9	68.9	56.3
T (degrees Celsius) - 1986	**8.0**	**12.6**	**20.6**	**21.6**	**20.5**	**13.5**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1986 (inches per month)	**3.94**	**5.33**	**7.09**	**7.48**	**6.74**	**3.98**
1984						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1984						
Torrington Experimental Farm weather station	22.4	31.5	30.9	31.2	33.4	34.1
TD (degrees Celsius) - 1984	**12.4**	**17.5**	**17.2**	**17.3**	**18.6**	**18.9**
T - 1984						
Torrington Experimental Farm weather station	40.5	57.9	65.2	72.7	72.5	55.8
T (degrees Celsius) - 1984	**4.7**	**14.4**	**18.4**	**22.6**	**22.5**	**13.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1984 (inches per month)	**3.17**	**5.85**	**6.74**	**7.38**	**6.82**	**4.25**
1985						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1985						
Torrington Experimental Farm weather station	32.6	33.4	34.7	35.7	38.9	33.5
TD (degrees Celsius) - 1985	**18.1**	**18.6**	**19.3**	**19.8**	**21.6**	**18.6**
T - 1985						
Torrington Experimental Farm weather station	49.2	59.5	64.2	71.9	67.3	54.9
T (degrees Celsius) - 1985	**9.6**	**15.3**	**17.9**	**22.2**	**19.6**	**12.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1985 (inches per month)	**4.66**	**6.20**	**7.04**	**7.81**	**6.82**	**4.15**

Table 2.1.4.15 Summary – reference evapotranspiration, ET_O, calculations - high flow years - Guernsey to State Line subbasin (cont)

1973						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1973						
Torrington Experimental Farm weather station	32.8	37.2	34.1	35.7	37.8	32.6
TD (degrees Celsius) - 1973	**18.2**	**20.7**	**18.9**	**19.8**	**21.0**	**18.1**
T - 1973						
Torrington Experimental Farm weather station	46.7	56.9	66.1	71.8	72.4	58.8
T (degrees Celsius) - 1973	**8.2**	**13.8**	**18.9**	**22.1**	**22.4**	**14.9**
Note: April and June T and TD values are the averages of 1968 through 1972 T and TD values.						
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1973 (inches per month)	**4.43**	**6.24**	**7.16**	**7.79**	**7.23**	**4.39**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.16 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Guernsey to State Line subbasin

1972						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1972						
Torrington Experimental Farm weather station	32.1	32.8	32.2	35.1	33.7	38.2
TD (degrees Celsius) - 1972	**17.8**	**18.2**	**17.9**	**19.5**	**18.7**	**21.2**
T - 1972						
Torrington Experimental Farm weather station	46.7	57.0	69.3	69.9	70.7	61.4
T (degrees Celsius) - 1972	**8.2**	**13.9**	**20.7**	**21.1**	**21.5**	**16.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1972 (inches per month)	**4.38**	**5.87**	**7.31**	**7.54**	**6.67**	**4.96**
1989						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1989						
Torrington Experimental Farm weather station	33.7	31.2	36.2	35.0	33.9	33.7
TD (degrees Celsius) - 1989	**18.7**	**17.3**	**20.1**	**19.4**	**18.8**	**18.7**
T - 1989						
Torrington Experimental Farm weather station	47.5	57.2	66.0	75.2	70.5	58.5
T (degrees Celsius) - 1989	**8.6**	**14.0**	**18.9**	**24.0**	**21.4**	**14.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1989 (inches per month)	**4.56**	**5.74**	**7.39**	**8.08**	**6.67**	**4.44**
1990						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1990						
Torrington Experimental Farm weather station	29.1	28.8	32.4	30.9	34.8	36.7
TD (degrees Celsius) - 1990	**16.2**	**16.0**	**18.0**	**17.2**	**19.3**	**20.4**
T - 1990						
Torrington Experimental Farm weather station	45.8	53.5	68.6	70.5	69.5	64.5
T (degrees Celsius) - 1990	**7.7**	**11.9**	**20.3**	**21.4**	**20.8**	**18.1**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1990 (inches per month)	**4.10**	**5.16**	**7.26**	**7.14**	**6.65**	**5.12**

Table 2.1.4.16 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Guernsey to State Line subbasin (cont)

1992						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1992						
Torrington Experimental Farm weather station	36.9	35.4	30.2	29.9	31.9	40.4
TD (degrees Celsius) - 1992	**20.5**	**19.7**	**16.8**	**16.6**	**17.7**	**22.4**
T - 1992						
Torrington Experimental Farm weather station	49.1	49.1	65.5	67.6	65.9	60.6
T (degrees Celsius) - 1992	**9.5**	**9.5**	**18.6**	**19.8**	**18.8**	**15.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1992 (inches per month)	**4.94**	**5.26**	**6.70**	**6.72**	**6.04**	**5.03**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.17 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Guernsey to State Line subbasin

1974						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1974						
Torrington Experimental Farm weather station	34.0	36.5	38.3	41.4	38.4	43.9
TD (degrees Celsius) - 1974	**18.9**	**20.3**	**21.3**	**23.0**	**21.3**	**24.4**
T - 1974						
Torrington Experimental Farm weather station	48.5	58.5	68.9	74.4	67.2	56.4
T (degrees Celsius) - 1974	**9.2**	**14.7**	**20.5**	**23.6**	**19.6**	**13.6**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1974 (inches per month)	**4.69**	**6.36**	**7.94**	**8.71**	**6.77**	**4.90**
1983						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1983						
Torrington Experimental Farm weather station	26.2	27.8	27.7	32.3	36.0	41.9
TD (degrees Celsius) - 1983	**14.6**	**15.4**	**15.4**	**17.9**	**20.0**	**23.3**
T - 1983						
Torrington Experimental Farm weather station	39.4	49.8	62.9	71.7	73.8	59.3
T (degrees Celsius) - 1983	**4.1**	**9.9**	**17.2**	**22.1**	**23.2**	**15.2**
Note: July T and TD values are averages of 1978 through 1982 T and TD values						
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1983 (inches per month)	**3.34**	**4.72**	**6.17**	**7.41**	**7.20**	**5.03**
1988						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1988						
Torrington Experimental Farm weather station	36.3	32.0	33.2	33.7	37.8	37.0
TD (degrees Celsius) - 1988	**20.2**	**17.8**	**18.4**	**18.7**	**21.0**	**20.6**
T - 1988						
Torrington Experimental Farm weather station	46.1	57.7	72.7	73.4	72.1	58.7
T (degrees Celsius) - 1988	**7.8**	**14.3**	**22.6**	**23.0**	**22.3**	**14.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1988 (inches per month)	**4.60**	**5.88**	**7.78**	**7.74**	**7.21**	**4.67**

Table 2.1.4.17 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Guernsey to State Line subbasin (cont)

1982						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1982						
Torrington Experimental Farm weather station	34.9	27.1	26.2	33.0	31.8	30.1
TD (degrees Celsius) - 1982	**19.4**	**15.1**	**14.6**	**18.3**	**17.7**	**16.7**
T - 1982						
Torrington Experimental Farm weather station	43.1	54.0	61.5	70.9	70.6	57.4
T (degrees Celsius) - 1982	**6.2**	**12.2**	**16.4**	**21.6**	**21.4**	**14.1**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1982 (inches per month)	**4.22**	**5.06**	**5.87**	**7.40**	**6.47**	**4.11**
1987						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1987						
Torrington Experimental Farm weather station	38.5	27.3	34.3	35.1	32.0	39.7
TD (degrees Celsius) - 1987	**21.4**	**15.2**	**19.1**	**19.5**	**17.8**	**22.1**
T - 1987						
Torrington Experimental Farm weather station	50.2	60.3	67.2	73.0	67.4	59.4
T (degrees Celsius) - 1987	**10.1**	**15.7**	**19.6**	**22.8**	**19.7**	**15.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1987 (inches per month)	**5.16**	**5.67**	**7.34**	**7.87**	**6.21**	**4.90**
1979						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1979						
Torrington Experimental Farm weather station	29.4	25.8	30.5	32.7	31.7	39.3
TD (degrees Celsius) - 1979	**16.3**	**14.3**	**16.9**	**18.2**	**17.6**	**21.8**
T - 1979						
Torrington Experimental Farm weather station	47.0	52.9	64.8	71.7	68.3	62.8
T (degrees Celsius) - 1979	**8.3**	**11.6**	**18.2**	**22.1**	**20.2**	**17.1**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1979 (inches per month)	**4.21**	**4.83**	**6.64**	**7.47**	**6.26**	**5.14**

Table 2.1.4.17 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Guernsey to State Line subbasin (cont)

1976						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1976						
Torrington Experimental Farm weather station	28.9	35.3	35.0	34.6	36.3	39.5
TD (degrees Celsius) - 1976	**16.1**	**19.6**	**19.4**	**19.2**	**20.2**	**21.9**
T - 1976						
Torrington Experimental Farm weather station	48.1	57.2	65.3	74.8	70.5	62.0
T (degrees Celsius) - 1976	**8.9**	**14.0**	**18.5**	**23.8**	**21.4**	**16.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1976 (inches per month)	**4.28**	**6.11**	**7.18**	**8.00**	**6.91**	**5.10**
1980						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1980						
Torrington Experimental Farm weather station	31.3	26.4	31.7	33.9	35.0	37.6
TD (degrees Celsius) - 1980	**17.4**	**14.7**	**17.6**	**18.8**	**19.4**	**20.9**
T - 1980						
Torrington Experimental Farm weather station	44.9	53.5	64.7	73.2	68.7	59.9
T (degrees Celsius) - 1980	**7.2**	**11.9**	**18.2**	**22.9**	**20.4**	**15.5**
Note: July T and TD values are averages of 1975 through 1979 T and TD values						
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1980 (inches per month)	**4.17**	**4.94**	**6.78**	**7.75**	**6.60**	**4.80**
1977						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1977						
Torrington Experimental Farm weather station	29.8	32.2	34.2	33.9	29.3	39.3
TD (degrees Celsius) - 1977	**16.6**	**17.9**	**19.0**	**18.8**	**16.3**	**21.8**
T - 1977						
Torrington Experimental Farm weather station	52.4	59.7	70.2	73.0	66.9	62.3
T (degrees Celsius) - 1977	**11.3**	**15.4**	**21.2**	**22.8**	**19.4**	**16.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1977 (inches per month)	**4.74**	**6.10**	**7.63**	**7.73**	**5.89**	**5.10**

Table 2.1.4.17 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Guernsey to State Line subbasin (cont)

1978						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1978						
Torrington Experimental Farm weather station	27.5	25.6	32.2	30.8	33.6	37.3
TD (degrees Celsius) - 1978	**15.3**	**14.2**	**17.9**	**17.1**	**18.7**	**20.7**
T - 1978						
Torrington Experimental Farm weather station	47.7	53.5	65.0	71.3	66.5	61.4
T (degrees Celsius) - 1978	**8.7**	**11.9**	**18.3**	**21.8**	**19.2**	**16.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1978 (inches per month)	**4.14**	**4.86**	**6.86**	**7.19**	**6.28**	**4.90**
1981						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1981						
Torrington Experimental Farm weather station	28.9	24.1	32.3	31.1	32.7	35.9
TD (degrees Celsius) - 1981	**16.1**	**13.4**	**17.9**	**17.3**	**18.2**	**19.9**
T - 1981						
Torrington Experimental Farm weather station	51.2	53.5	66.8	71.3	67.5	61.4
T (degrees Celsius) - 1981	**10.7**	**11.9**	**19.3**	**21.8**	**19.7**	**16.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1981 (inches per month)	**4.57**	**4.72**	**7.05**	**7.23**	**6.28**	**4.80**
1975						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1975						
Torrington Experimental Farm weather station	30.6	31.8	35.5	37.4	39.1	38.9
TD (degrees Celsius) - 1975	**17.0**	**17.7**	**19.7**	**20.8**	**21.7**	**21.6**
T - 1975						
Torrington Experimental Farm weather station	44.3	55.8	65.2	75.1	70.9	58.4
T (degrees Celsius) - 1975	**6.8**	**13.2**	**18.4**	**23.9**	**21.6**	**14.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1975 (inches per month)	**4.05**	**5.66**	**7.21**	**8.35**	**7.20**	**4.77**

Table 2.1.4.17 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Guernsey to State Line subbasin (cont)

1991						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.39**	**19.70**	**20.25**	**20.41**	**18.21**	**14.19**
TD - 1991						
Torrington Experimental Farm weather station	27.6	25.9	28.6	32.3	35.0	36.5
TD (degrees Celsius) - 1991	**15.3**	**14.4**	**15.9**	**17.9**	**19.4**	**20.3**
T - 1991						
Torrington Experimental Farm weather station	45.2	57.0	66.8	72.3	72.5	61.5
T (degrees Celsius) - 1991	**7.3**	**13.9**	**19.3**	**22.4**	**22.5**	**16.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1991 (inches per month)	**3.92**	**5.22**	**6.64**	**7.47**	**6.97**	**4.86**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.18 Summary – reference evapotranspiration, ET_O, values - all flow years - Guernsey to State Line subbasin

High flow years (1)		Monthly reference evapotranspiration, ET_O (inches per month)					
No.	**Year**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
1	1986	3.94	5.33	7.09	7.48	6.74	3.98
2	1984	3.17	5.85	6.74	7.38	6.82	4.25
3	1985	4.66	6.20	7.04	7.81	6.82	4.15
4	1973	4.43	6.24	7.16	7.79	7.23	4.39
	High flow averages:	**4.05**	**5.91**	**7.01**	**7.62**	**6.90**	**4.19**
Low flow years (2)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	**Year**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
5	1972	4.38	5.87	7.31	7.54	6.67	4.96
6	1989	4.56	5.74	7.39	8.08	6.67	4.44
7	1990	4.10	5.16	7.26	7.14	6.65	5.12
8	1992	4.94	5.26	6.70	6.72	6.04	5.03
	Low flow averages:	**4.50**	**5.51**	**7.17**	**7.37**	**6.51**	**4.89**
Normal or average flow years (3)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	**Year**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
9	1974	4.69	6.36	7.94	8.71	6.77	4.90
10	1983	3.34	4.72	6.17	7.41	7.20	5.03
11	1988	4.60	5.88	7.78	7.74	7.21	4.67
12	1982	4.22	5.06	5.87	7.40	6.47	4.11
13	1987	5.16	5.67	7.34	7.87	6.21	4.90
14	1979	4.21	4.83	6.64	7.47	6.26	5.14
15	1976	4.28	6.11	7.18	8.00	6.91	5.10
16	1980	4.17	4.94	6.78	7.75	6.60	4.80
17	1977	4.74	6.10	7.63	7.73	5.89	5.10
18	1978	4.14	4.86	6.86	7.19	6.28	4.90
19	1981	4.57	4.72	7.05	7.23	6.28	4.80
20	1975	4.05	5.66	7.21	8.35	7.20	4.77
21	1991	3.92	5.22	6.64	7.47	6.97	4.86
	Normal flow year averages:	**4.31**	**5.39**	**7.01**	**7.72**	**6.63**	**4.85**

Notes:
1. See Table 2.1.4.15.
2. See Table 2.1.4.16.
3. See Table 2.1.4.17.

2.1.4.3.5.4 Reference Evapotranspiration, ET_O – Upper Laramie Subbasin

Table 2.1.4.19 contains a summary of Upper Laramie subbasin high, low, and normal or average stream flow years during the 1972 through 2001 study period. Table 2.1.4.19 contains information from Table 3.1.1.5 in Technical Memorandum 3.1.

Table 2.1.4.19 Summary – high stream flow, low stream flow, and normal or average stream flow years - Upper Laramie subbasin

No.	Year
1	1983
2	1986
3	1984
4	1997
5	1973
6	1979
7	1996
8	1982
9	1995
10	1978
11	1980
12	1974
13	1999
14	1993
15	1985
16	1988
17	1975
18	1998
19	1972
20	1976
21	1990
22	2000
23	1991
24	1994
25	1992
26	2001
27	1987
28	1981
29	1977
30	1989
	designates high stream flow years
	designates low stream flow years

Years which are neither shaded or outlined are normal or average stream flow years
See Table 3.1.1.5. in Technical Memorandum 3.1., Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year Determination

Tables 2.1.4.20, 2.1.4.21, and 2.1.4.22 contain reference evapotranspiration, ET_O, calculation parameters and values for high flow, low flow, and normal or average stream flow years, respectively, in the Upper Laramie subbasin. Table 2.1.4.23 contains a summary of ET_O values for the Upper Laramie subbasin during all years of available record of the study period.

Table 2.1.4.20 Summary – reference evapotranspiration, ET_O, calculations - high flow years - Upper Laramie subbasin

1983						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1983						
Centennial 1 N weather station	22.8	24.4	28.2	28.1	24.1	32.9
Laramie FAA Airport weather station	20.7	24.3	26.6	30.1	30.0	32.1
Average TD (degrees Fahrenheit) - 1983	21.8	24.4	27.4	29.1	27.1	32.5
Average TD (degrees Celsius) - 1983	**12.1**	**13.6**	**15.2**	**16.2**	**15.1**	**18.1**
T - 1983						
Centennial 1 N weather station	28.8	41.7	51.9	61.0	61.1	54.1
Laramie FAA Airport weather station	28.0	41.7	53.6	63.4	64.6	55.8
Average T (degrees Fahrenheit) - 1983	28.4	41.7	52.8	62.2	62.9	55
Average T (degrees Celsius) - 1983	**-2.0**	**5.4**	**11.6**	**16.8**	**17.2**	**12.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1983 (inches per month)	**2.21**	**3.72**	**5.14**	**6.12**	**5.36**	**4.15**
1986						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1986						
Centennial 1 N weather station	25.0	28.2	30.7	29.6	30.9	27.0
Laramie FAA Airport weather station	24.8	28.3	30.5	30.8	31.6	26.9
Average TD (degrees Fahrenheit) - 1986	24.9	28.3	30.6	30.2	31.3	27
Average TD (degrees Celsius) - 1986	**13.8**	**15.7**	**17.0**	**16.8**	**17.4**	**15.0**
T - 1986						
Centennial 1 N weather station	39.2	45.1	58.3	59.0	60.0	48.9
Laramie FAA Airport weather station	39.2	45.8	60.1	61.9	61.7	50.7
Average T (degrees Fahrenheit) - 1986	39.2	45.5	59.2	60.5	60.9	49.8
Average T (degrees Celsius) - 1986	**4.0**	**7.5**	**15.1**	**15.8**	**16.1**	**9.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1986 (inches per month)	**3.26**	**4.36**	**6.09**	**6.05**	**5.57**	**3.42**

Table 2.1.4.20 Summary – reference evapotranspiration, ET_O, calculations - high flow years - Upper Laramie subbasin (cont)

1984						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1984						
Centennial 1 N weather station	25.0	29.0	28.8	30.6	27.3	30.7
Laramie FAA Airport weather station	21.8	30.5	32.4	32.7	29.1	29.8
Average TD (degrees Fahrenheit) - 1984	23.4	29.8	30.6	31.7	28.2	30.3
Average TD (degrees Celsius) - 1984	**13.0**	**16.6**	**17.0**	**17.6**	**15.7**	**16.8**
T - 1984						
Centennial 1 N weather station	31.4	48.8	54.6	61.6	60.3	50.9
Laramie FAA Airport weather station	31.0	50.3	56.0	64.7	62.9	50.6
Average T (degrees Fahrenheit) - 1984	31.2	49.6	55.3	63.2	61.6	50.8
Average T (degrees Celsius) - 1984	**-0.4**	**9.8**	**12.9**	**17.3**	**16.4**	**10.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1984 (inches per month)	**2.52**	**4.89**	**5.68**	**6.47**	**5.34**	**3.68**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.21 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Upper Laramie subbasin

1992						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1992						
Centennial 1 N weather station	ND	ND	ND	ND	ND	ND
Laramie FAA Airport weather station	28.1	27.5	27.6	28.0	29.0	31.6
Average TD (degrees Fahrenheit) - 1992	28.1	27.5	27.6	28	29	31.6
Average TD (degrees Celsius) - 1992	**15.6**	**15.3**	**15.3**	**15.6**	**16.1**	**17.6**
T - 1992						
Centennial 1 N weather station	ND	ND	ND	ND	ND	ND
Laramie FAA Airport weather station	44.0	50.0	55.4	59.8	59.7	54.8
Average T (degrees Fahrenheit) - 1992	44	50	55.4	59.8	59.7	54.8
Average T (degrees Celsius) - 1992	**6.7**	**10.0**	**13.0**	**15.4**	**15.4**	**12.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1992 (inches per month)	**3.89**	**4.73**	**5.41**	**5.76**	**5.25**	**4.08**
2001						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 2001						
Centennial 1 N weather station	24.6	28.9	31.0	27.7	28.3	28.8
Laramie FAA Airport weather station	26.2	29.0	35.6	33.5	31.3	33.5
Average TD (degrees Fahrenheit) - 2001	25.4	29	33.3	30.6	29.8	31.2
Average TD (degrees Celsius) - 2001	**14.1**	**16.1**	**18.5**	**17.0**	**16.6**	**17.3**
T - 2001						
Centennial 1 N weather station	37.9	48.3	56.7	64.4	63.6	56.0
Laramie FAA Airport weather station	39.4	48.4	59.3	67.5	64.0	56.4
Average T (degrees Fahrenheit) - 2001	38.7	48.4	58.0	66.0	63.8	56.2
Average T (degrees Celsius) - 2001	**3.7**	**9.1**	**14.4**	**18.9**	**17.7**	**13.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 2001 (inches per month)	**3.25**	**4.69**	**6.22**	**6.64**	**5.70**	**4.14**

Table 2.1.4.21 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Upper Laramie subbasin (cont)

1987						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1987						
Centennial 1 N weather station	29.8	26.9	29.9	31.6	30.6	31.8
Laramie FAA Airport weather station	31.1	25.8	31.2	32.6	29.6	34.3
Average TD (degrees Fahrenheit) - 1987	30.5	26.4	30.6	32.1	30.1	33.1
Average TD (degrees Celsius) - 1987	**16.9**	**14.7**	**17.0**	**17.8**	**16.7**	**18.4**
T - 1987						
Centennial 1 N weather station	41.8	48.7	56.4	61.1	57.7	53.6
Laramie FAA Airport weather station	40.5	49.4	57.9	62.0	59.7	52.4
Average T (degrees Fahrenheit) - 1987	41.2	49.1	57.2	61.6	58.7	53.0
Average T (degrees Celsius) - 1987	**5.1**	**9.5**	**14.0**	**16.4**	**14.8**	**11.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1987 (inches per month)	**3.79**	**4.55**	**5.88**	**6.34**	**5.25**	**4.03**
1981						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1981						
Centennial 1 N weather station	26.5	22.5	29.6	28.8	28.7	30.1
Laramie FAA Airport weather station	27.6	21.4	30.1	30.8	30.1	31.6
Average TD (degrees Fahrenheit) - 1981	27.1	22	29.9	29.8	29.4	30.9
Average TD (degrees Celsius) - 1981	**15.1**	**12.2**	**16.6**	**16.6**	**16.3**	**17.2**
T - 1981						
Centennial 1 N weather station	43.2	44.3	57.4	61.6	59.1	54.1
Laramie FAA Airport weather station	44.1	44.6	59.6	63.5	60.5	56.0
Average T (degrees Fahrenheit) - 1981	43.7	44.5	58.5	62.6	59.8	55.1
Average T (degrees Celsius) - 1981	**6.5**	**6.9**	**14.7**	**17.0**	**15.4**	**12.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1981 (inches per month)	**3.80**	**3.75**	**5.94**	**6.23**	**5.28**	**4.04**

Table 2.1.4.21 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Upper Laramie subbasin (cont)

1977						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1977						
Centennial 1 N weather station	ND	ND	29.8	29.0	27.6	30.7
Laramie FAA Airport weather station	27.2	30.4	33.0	32.7	29.8	33.1
Average TD (degrees Fahrenheit) - 1977	27.2	30.4	31.4	30.9	28.7	31.9
Average TD (degrees Celsius) - 1977	**15.1**	**16.9**	**17.4**	**17.2**	**15.9**	**17.7**
T - 1977						
Centennial 1 N weather station	ND	ND	60.2	61.4	58.4	54.1
Laramie FAA Airport weather station	39.9	48.7	62.4	65.1	61.0	55.9
Average T (degrees Fahrenheit) - 1977	39.9	48.7	61.3	63.3	59.7	55.0
Average T (degrees Celsius) - 1977	**4.4**	**9.3**	**16.3**	**17.4**	**15.4**	**12.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1977 (inches per month)	**3.47**	**4.84**	**6.38**	**6.41**	**5.22**	**4.10**
1989						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1989						
Centennial 1 N weather station	27.8	30.6	32.1	32.4	32.6	33.8
Laramie FAA Airport weather station	27.9	29.4	30.9	34.6	31.7	31.3
Average TD (degrees Fahrenheit) - 1989	27.9	30	31.5	33.5	32.2	32.6
Average TD (degrees Celsius) - 1989	**15.5**	**16.7**	**17.5**	**18.6**	**17.9**	**18.1**
T - 1989						
Centennial 1 N weather station	40.4	48.3	54.0	63.7	58.6	52.1
Laramie FAA Airport weather station	40.3	47.9	55.1	64.7	61.0	52.6
Average T (degrees Fahrenheit) - 1989	40.4	48.1	54.6	64.2	59.8	52.4
Average T (degrees Celsius) - 1989	**4.7**	**8.9**	**12.6**	**17.9**	**15.4**	**11.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1989 (inches per month)	**3.56**	**4.74**	**5.71**	**6.76**	**5.53**	**3.95**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.22 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Upper Laramie subbasin

1997						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1997						
Centennial 1 N weather station	25.9	29.3	28.3	ND	ND	25.4
Laramie FAA Airport weather station	23.4	27.8	27.5	32.1	28.2	26.8
Average TD (degrees Fahrenheit) - 1997	24.7	28.6	27.9	32.1	28.2	26.1
Average TD (degrees Celsius) - 1997	**13.7**	**15.9**	**15.5**	**17.8**	**15.7**	**14.5**
T - 1997						
Centennial 1 N weather station	31.5	46.4	56.9	ND	ND	54
Laramie FAA Airport weather station	31.7	48.0	58.9	63.2	62.4	55.9
Average T (degrees Fahrenheit) - 1997	31.6	47.2	57.9	63.2	62.4	55
Average T (degrees Celsius) - 1997	**-0.2**	**8.4**	**14.4**	**17.3**	**16.9**	**12.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1997 (inches per month)	**2.62**	**4.54**	**5.69**	**6.50**	**5.42**	**3.71**
1973						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1973						
Centennial 1 N weather station	ND	ND	ND	ND	ND	ND
Laramie FAA Airport weather station	21.6	28.2	30.2	28.6	30.3	26.9
Average TD (degrees Fahrenheit) - 1973	21.6	28.2	30.2	28.6	30.3	26.9
Average TD (degrees Celsius) - 1973	**12.0**	**15.7**	**16.8**	**15.9**	**16.8**	**14.9**
T - 1973						
Centennial 1 N weather station	ND	ND	ND	ND	ND	ND
Laramie FAA Airport weather station	30.8	46.1	57.2	61.5	63.6	51.5
Average T (degrees Fahrenheit) - 1973	30.8	46.1	57.2	61.5	63.6	51.5
Average T (degrees Celsius) - 1973	**-0.7**	**7.8**	**14.0**	**16.4**	**17.6**	**10.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1973 (inches per month)	**2.38**	**4.41**	**5.85**	**5.99**	**5.72**	**3.52**

Table 2.1.4.22 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Upper Laramie subbasin (cont)

1979						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1979						
Centennial 1 N weather station	23.2	24.7	27.4	29.9	26.8	32.5
Laramie FAA Airport weather station	28.3	28.9	33.8	34.8	29.7	35.3
Average TD (degrees Fahrenheit) - 1979	25.8	26.8	30.6	32.4	28.3	33.9
Average TD (degrees Celsius) - 1979	**14.3**	**14.9**	**17.0**	**18.0**	**15.7**	**18.8**
T - 1979						
Centennial 1 N weather station	37.1	43.9	55.2	61.9	58.4	54.3
Laramie FAA Airport weather station	39.3	45.5	57.1	64.8	61.1	56.6
Average T (degrees Fahrenheit) - 1979	38.2	44.7	56.2	63.4	59.8	55.5
Average T (degrees Celsius) - 1979	**3.4**	**7.1**	**13.4**	**17.4**	**15.4**	**13.1**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1979 (inches per month)	**3.22**	**4.18**	**5.77**	**6.56**	**5.18**	**4.27**
1996						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1996						
Centennial 1 N weather station	25.0	26.4	30.5	28.3	28.6	30.2
Laramie FAA Airport weather station	25.6	27.4	32.5	32.0	34.4	29.7
Average TD (degrees Fahrenheit) - 1996	25.3	26.9	31.5	30.2	31.5	30
Average TD (degrees Celsius) - 1996	**14.1**	**14.9**	**17.5**	**16.8**	**17.5**	**16.7**
T - 1996						
Centennial 1 N weather station	37.0	46.8	56.8	62.0	60.0	48.2
Laramie FAA Airport weather station	37.8	48.4	58.6	64.6	61.6	51.2
Average T (degrees Fahrenheit) - 1996	37.4	47.6	57.7	63.3	60.8	49.7
Average T (degrees Celsius) - 1996	**3.0**	**8.7**	**14.3**	**17.4**	**16.0**	**9.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1996 (inches per month)	**3.14**	**4.45**	**6.03**	**6.34**	**5.57**	**3.59**

Table 2.1.4.22 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Upper Laramie subbasin (cont)

1982						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1982						
Centennial 1 N weather station	23.9	24.1	27.4	27.0	27.1	25.2
Laramie FAA Airport weather station	31.4	25.6	30.4	35.3	30.4	25.5
Average TD (degrees Fahrenheit) - 1982	27.7	24.9	28.9	31.2	28.8	25.4
Average TD (degrees Celsius) - 1982	**15.4**	**13.8**	**16.1**	**17.3**	**16.0**	**14.1**
T - 1982						
Centennial 1 N weather station	34.2	44.5	51.9	60.2	61.5	50.2
Laramie FAA Airport weather station	36.1	46.1	54.4	62.3	64.9	52.1
Average T (degrees Fahrenheit) - 1982	35.2	45.3	53.2	61.3	63.2	51.2
Average T (degrees Celsius) - 1982	**1.8**	**7.4**	**11.8**	**16.3**	**17.3**	**10.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1982 (inches per month)	**3.09**	**4.07**	**5.33**	**6.23**	**5.53**	**3.41**
1995						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1995						
Centennial 1 N weather station	24.2	21.6	28.3	27.6	ND	25.9
Laramie FAA Airport weather station	25.0	20.5	26.4	30.4	32.8	27.6
Average TD (degrees Fahrenheit) - 1995	24.6	21.1	27.4	29	32.8	26.8
Average TD (degrees Celsius) - 1995	**13.7**	**11.7**	**15.2**	**16.1**	**18.2**	**14.9**
T - 1995						
Centennial 1 N weather station	34.8	41.2	52.3	58.6	ND	50.7
Laramie FAA Airport weather station	35.8	42.8	53.9	61.3	65.1	52.3
Average T (degrees Fahrenheit) - 1995	35.3	42	53.1	60	65.1	51.5
Average T (degrees Celsius) - 1995	**1.8**	**5.6**	**11.7**	**15.6**	**18.4**	**10.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1995 (inches per month)	**2.92**	**3.48**	**5.16**	**5.89**	**6.08**	**3.52**

Table 2.1.4.22 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Upper Laramie subbasin (cont)

1978						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1978						
Centennial 1 N weather station	23.7	24.5	30.3	31.4	31.6	31.5
Laramie FAA Airport weather station	26.0	26.2	33.8	35.7	34.9	35.6
Average TD (degrees Fahrenheit) - 1978	24.9	25.4	32.1	33.6	33.3	33.6
Average TD (degrees Celsius) - 1978	**13.8**	**14.1**	**17.8**	**18.7**	**18.5**	**18.7**
T - 1978						
Centennial 1 N weather station	39.0	43.8	54.5	61.7	57.5	52.1
Laramie FAA Airport weather station	40.1	45.4	57.7	65.3	60.8	54.3
Average T (degrees Fahrenheit) - 1978	39.6	44.6	56.1	63.5	59.2	53.2
Average T (degrees Celsius) - 1978	**4.2**	**7.0**	**13.4**	**17.5**	**15.1**	**11.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1978 (inches per month)	**3.29**	**4.05**	**5.91**	**6.70**	**5.57**	**4.08**
1980						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1980						
Centennial 1 N weather station	23.6	25.3	32.3	29.4	31.1	28.5
Laramie FAA Airport weather station	27.9	26.7	36.5	33.2	33.8	32.8
Average TD (degrees Fahrenheit) - 1980	25.8	26	34.4	31.3	32.5	30.7
Average TD (degrees Celsius) - 1980	**14.3**	**14.4**	**19.1**	**17.4**	**18.1**	**17.1**
T - 1980						
Centennial 1 N weather station	33.9	45.0	56.8	62.8	58.3	53.2
Laramie FAA Airport weather station	36.3	47.0	60.1	66.4	61.7	55.5
Average T (degrees Fahrenheit) - 1980	35.1	46	58.5	64.6	60	54.4
Average T (degrees Celsius) - 1980	**1.7**	**7.8**	**14.7**	**18.1**	**15.6**	**12.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1980 (inches per month)	**2.97**	**4.22**	**6.37**	**6.58**	**5.60**	**3.98**

Table 2.1.4.22 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Upper Laramie subbasin (cont)

1974						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1974						
Centennial 1 N weather station	ND	ND	ND	ND	ND	ND
Laramie FAA Airport weather station	24.4	31.7	33.2	32.3	35.2	34.0
Average TD (degrees Fahrenheit) - 1974	24.4	31.7	33.2	32.3	35.2	34
Average TD (degrees Celsius) - 1974	**13.6**	**17.6**	**18.4**	**17.9**	**19.6**	**18.9**
T - 1974						
Centennial 1 N weather station	ND	ND	ND	ND	ND	ND
Laramie FAA Airport weather station	36.4	49.3	58.2	63.6	59.2	49.1
Average T (degrees Fahrenheit) - 1974	36.4	49.3	58.2	63.6	59.2	49.1
Average T (degrees Celsius) - 1974	**2.4**	**9.6**	**14.6**	**17.6**	**15.1**	**9.5**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1974 (inches per month)	**3.00**	**5.00**	**6.24**	**6.58**	**5.74**	**3.78**
1999						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1999						
Centennial 1 N weather station	ND	26.4	29.6	26.4	25.6	29.5
Laramie FAA Airport weather station	21.6	26.9	28.8	31.1	29.9	30.8
Average TD (degrees Fahrenheit) - 1999	21.6	26.7	29.2	28.8	27.8	30.2
Average TD (degrees Celsius) - 1999	**12.0**	**14.8**	**16.2**	**16.0**	**15.4**	**16.8**
T - 1999						
Centennial 1 N weather station	ND	43.3	53.6	61.6	59.0	48.3
Laramie FAA Airport weather station	34.2	45.8	55.8	65.0	62.7	49.9
Average T (degrees Fahrenheit) - 1999	34.2	44.6	54.7	63.3	60.9	49.1
Average T (degrees Celsius) - 1999	**1.2**	**7.0**	**12.6**	**17.4**	**16.1**	**9.5**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1999 (inches per month)	**2.65**	**4.15**	**5.49**	**6.18**	**5.24**	**3.57**

Table 2.1.4.22 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Upper Laramie subbasin (cont)

1993						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1993						
Centennial 1 N weather station	25.8	28.6	27.0	31.3	29.2	29.0
Laramie FAA Airport weather station	23.7	27.8	28.6	32.1	29.7	29.1
Average TD (degrees Fahrenheit) - 1993	24.8	28.2	27.8	31.7	29.5	29.1
Average TD (degrees Celsius) - 1993	**13.8**	**15.7**	**15.4**	**17.6**	**16.4**	**16.2**
T - 1993						
Centennial 1 N weather station	35.0	47.5	52.2	57.2	57.1	49.8
Laramie FAA Airport weather station	36.9	48.4	53.9	60.2	59.9	50.7
Average T (degrees Fahrenheit) - 1993	36.0	48.0	53.1	58.7	58.5	50.3
Average T (degrees Celsius) - 1993	**2.2**	**8.9**	**11.7**	**14.8**	**14.7**	**10.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1993 (inches per month)	**2.99**	**4.60**	**5.20**	**6.01**	**5.19**	**3.59**
1985						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1985						
Centennial 1 N weather station	26.5	30.2	28.7	26.7	34.7	29.7
Laramie FAA Airport weather station	28.8	29.6	32.2	32.4	36.8	28.9
Average TD (degrees Fahrenheit) - 1985	27.7	29.9	30.5	29.6	35.8	29.3
Average TD (degrees Celsius) - 1985	**15.4**	**16.6**	**16.9**	**16.4**	**19.9**	**16.3**
T - 1985						
Centennial 1 N weather station	41.0	47.8	52.8	60.6	59.5	46.9
Laramie FAA Airport weather station	39.9	49.7	58.2	64.0	61.6	49.3
Average T (degrees Fahrenheit) - 1985	40.5	48.8	55.5	62.3	60.6	48.1
Average T (degrees Celsius) - 1985	**4.7**	**9.3**	**13.1**	**16.8**	**15.9**	**8.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1985 (inches per month)	**3.55**	**4.80**	**5.70**	**6.15**	**5.92**	**3.44**

Table 2.1.4.22 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Upper Laramie subbasin (cont)

1988						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1988						
Centennial 1 N weather station	29.2	27.9	30.5	33.5	34.9	31.7
Laramie FAA Airport weather station	29.8	29.9	31.8	33.0	33.7	31.8
Average TD (degrees Fahrenheit) - 1988	29.5	28.9	31.2	33.3	34.3	31.8
Average TD (degrees Celsius) - 1988	**16.4**	**16.1**	**17.3**	**18.5**	**19.1**	**17.7**
T - 1988						
Centennial 1 N weather station	39.7	47.7	60.5	63.2	61.4	50.9
Laramie FAA Airport weather station	40.4	48.0	63.4	65.1	62.0	52.5
Average T (degrees Fahrenheit) - 1988	40.1	47.9	62	64.2	61.7	51.7
Average T (degrees Celsius) - 1988	**4.5**	**8.8**	**16.7**	**17.9**	**16.5**	**10.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1988 (inches per month)	**3.63**	**4.64**	**6.44**	**6.74**	**5.91**	**3.85**
1975						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1975						
Centennial 1 N weather station	ND	ND	ND	ND	ND	ND
Laramie FAA Airport weather station	25.9	25.9	30.9	31.0	34.3	34.4
Average TD (degrees Fahrenheit) - 1975	25.9	25.9	30.9	31	34.3	34.4
Average TD (degrees Celsius) - 1975	**14.4**	**14.4**	**17.2**	**17.2**	**19.1**	**19.1**
T - 1975						
Centennial 1 N weather station	ND	ND	ND	ND	ND	ND
Laramie FAA Airport weather station	33.5	44.2	53.9	64.3	61.2	51.1
Average T (degrees Fahrenheit) - 1975	33.5	44.2	53.9	64.3	61.2	51.1
Average T (degrees Celsius) - 1975	**0.8**	**6.8**	**12.2**	**17.9**	**16.2**	**10.6**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1975 (inches per month)	**2.84**	**4.06**	**5.58**	**6.50**	**5.85**	**3.96**

Table 2.1.4.22 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Upper Laramie subbasin (cont)

1998						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1998						
Centennial 1 N weather station	ND	ND	28.0	25.9	ND	27.2
Laramie FAA Airport weather station	27.1	30.4	27.4	29.3	30.3	31.6
Average TD (degrees Fahrenheit) - 1998	27.1	30.4	27.7	27.6	30.3	29.4
Average TD (degrees Celsius) - 1998	**15.1**	**16.9**	**15.4**	**15.3**	**16.8**	**16.3**
T - 1998						
Centennial 1 N weather station	ND	ND	49.3	63.0	ND	56.5
Laramie FAA Airport weather station	37.0	49.3	52.7	65.5	62.8	59.2
Average T (degrees Fahrenheit) - 1998	37.0	49.3	51	64.3	62.8	57.9
Average T (degrees Celsius) - 1998	**2.8**	**9.6**	**10.6**	**17.9**	**17.1**	**14.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1998 (inches per month)	**3.22**	**4.90**	**5.00**	**6.13**	**5.64**	**4.14**
1972						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1972						
Centennial 1 N weather station	ND	ND	ND	ND	ND	ND
Laramie FAA Airport weather station	27.6	29.1	28.4	31.6	31.2	28.8
Average TD (degrees Fahrenheit) - 1972	27.6	29.1	28.4	31.6	31.2	28.8
Average TD (degrees Celsius) - 1972	**15.3**	**16.2**	**15.8**	**17.6**	**17.3**	**16.0**
T - 1972						
Centennial 1 N weather station	ND	ND	ND	ND	ND	ND
Laramie FAA Airport weather station	38.8	47.5	59.2	61.8	61.3	53.5
Average T (degrees Fahrenheit) - 1972	38.8	47.5	59.2	61.8	61.3	53.5
Average T (degrees Celsius) - 1972	**3.8**	**8.6**	**15.1**	**16.6**	**16.3**	**11.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1972 (inches per month)	**3.40**	**4.62**	**5.87**	**6.34**	**5.59**	**3.79**

Table 2.1.4.22 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Upper Laramie subbasin (cont)

1976						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1976						
Centennial 1 N weather station	ND	ND	ND	ND	ND	ND
Laramie FAA Airport weather station	26.1	30.5	33.1	33.1	33.5	33.9
Average TD (degrees Fahrenheit) - 1976	26.1	30.5	33.1	33.1	33.5	33.9
Average TD (degrees Celsius) - 1976	**14.5**	**16.9**	**18.4**	**18.4**	**18.6**	**18.8**
T - 1976						
Centennial 1 N weather station	ND	ND	ND	ND	ND	ND
Laramie FAA Airport weather station	39.1	47.4	56.2	66.0	61.4	53.1
Average T (degrees Fahrenheit) - 1976	39.1	47.4	56.2	66	61.4	53.1
Average T (degrees Celsius) - 1976	**3.9**	**8.6**	**13.4**	**18.9**	**16.3**	**11.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1976 (inches per month)	**3.32**	**4.72**	**6.01**	**6.91**	**5.79**	**4.08**
1990						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1990						
Centennial 1 N weather station	26.3	30.1	32.9	29.8	32.4	30.0
Laramie FAA Airport weather station	27.1	30.1	34.6	27.6	31.8	28.7
Average TD (degrees Fahrenheit) - 1990	26.7	30.1	33.8	28.7	32.1	29.4
Average TD (degrees Celsius) - 1990	**14.8**	**16.7**	**18.8**	**15.9**	**17.8**	**16.3**
T - 1990						
Centennial 1 N weather station	39.9	45.2	58.1	59.0	59.6	55.4
Laramie FAA Airport weather station	39.0	45.0	59.2	61.2	60.7	56.2
Average T (degrees Fahrenheit) - 1990	39.5	45.1	58.7	60.1	60.2	55.8
Average T (degrees Celsius) - 1990	**4.2**	**7.3**	**14.8**	**15.6**	**15.7**	**13.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1990 (inches per month)	**3.40**	**4.46**	**6.34**	**5.85**	**5.57**	**3.99**

Table 2.1.4.22 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Upper Laramie subbasin (cont)

2000						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 2000						
Centennial 1 N weather station	27.6	ND	31.2	29.1	29.1	32.0
Laramie FAA Airport weather station	29.2	28.7	32.5	34.3	32.0	32.2
Average TD (degrees Fahrenheit) - 2000	28.4	28.7	31.9	31.7	30.6	32.1
Average TD (degrees Celsius) - 2000	**15.8**	**15.9**	**17.7**	**17.6**	**17.0**	**17.8**
T - 2000						
Centennial 1 N weather station	39.7	ND	54.7	64.2	63.9	52.9
Laramie FAA Airport weather station	41.8	50.9	57.6	66.1	65.5	53.1
Average T (degrees Fahrenheit) - 2000	40.8	50.9	56.2	65.2	64.7	53
Average T (degrees Celsius) - 2000	**4.9**	**10.5**	**13.4**	**18.4**	**18.2**	**11.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 2000 (inches per month)	**3.63**	**4.91**	**5.89**	**6.67**	**5.85**	**3.97**
1991						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1991						
Centennial 1 N weather station	25.8	30.1	30.7	30.3	29.3	30.3
Laramie FAA Airport weather station	25.9	27.1	28.8	28.7	29.0	31.2
Average TD (degrees Fahrenheit) - 1991	25.9	28.6	29.8	29.5	29.2	30.8
Average TD (degrees Celsius) - 1991	**14.4**	**15.9**	**16.6**	**16.4**	**16.2**	**17.1**
T - 1991						
Centennial 1 N weather station	36.0	47.5	55.9	60.5	60.2	52.7
Laramie FAA Airport weather station	35.5	48.2	57.2	61.9	61.7	52.4
Average T (degrees Fahrenheit) - 1991	35.8	47.9	56.6	61.2	61	52.6
Average T (degrees Celsius) - 1991	**2.1**	**8.8**	**13.7**	**16.2**	**16.1**	**11.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1991 (inches per month)	**3.04**	**4.61**	**5.76**	**6.05**	**5.38**	**3.85**

Table 2.1.4.22 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Upper Laramie subbasin (cont)

1994						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.50**	**19.73**	**20.24**	**20.42**	**18.28**	**14.33**
TD - 1994						
Centennial 1 N weather station	24.8	29.0	30.3	29.8	29.3	30.7
Laramie FAA Airport weather station	26.4	29.6	35.4	33.1	32.5	34.0
Average TD (degrees Fahrenheit) - 1994	25.6	29.3	32.9	31.5	30.9	32.4
Average TD (degrees Celsius) - 1994	**14.2**	**16.3**	**18.3**	**17.5**	**17.2**	**18.0**
T - 1994						
Centennial 1 N weather station	38.1	50.9	58.8	61.8	62.3	54.1
Laramie FAA Airport weather station	38.3	51.1	60.7	63.2	63.6	54.3
Average T (degrees Fahrenheit) - 1994	38.2	51.0	59.8	62.5	63	54.2
Average T (degrees Celsius) - 1994	**3.4**	**10.6**	**15.4**	**16.9**	**17.2**	**12.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1994 (inches per month)	**3.21**	**4.98**	**6.37**	**6.37**	**5.72**	**4.07**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.23 Summary – reference evapotranspiration, ET_O, values - all flow years - Upper Laramie subbasin

High flow years (1)		Monthly reference evapotranspiration, ET_O (inches per month)					
No.	**Year**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
1	1983	2.21	3.72	5.14	6.12	5.36	4.15
2	1986	3.26	4.36	6.09	6.05	5.57	3.42
3	1984	2.52	4.89	5.68	6.47	5.34	3.68
	High flow averages:	**2.66**	**4.32**	**5.64**	**6.21**	**5.42**	**3.75**
Low flow years (2)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	**Year**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
4	1992	3.89	4.73	5.41	5.76	5.25	4.08
5	2001	3.25	4.69	6.22	6.64	5.70	4.14
6	1987	3.79	4.55	5.88	6.34	5.25	4.03
7	1981	3.80	3.75	5.94	6.23	5.28	4.04
8	1977	3.47	4.84	6.38	6.41	5.22	4.10
9	1989	3.56	4.74	5.71	6.76	5.53	3.95
	Low flow averages:	**3.63**	**4.55**	**5.92**	**6.36**	**5.37**	**4.06**
Normal or average flow years (3)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	**Year**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
10	1997	2.62	4.54	5.69	6.50	5.42	3.71
11	1973	2.38	4.41	5.85	5.99	5.72	3.52
12	1979	3.22	4.18	5.77	6.56	5.18	4.27
13	1996	3.14	4.45	6.03	6.34	5.57	3.59
14	1982	3.09	4.07	5.33	6.23	5.53	3.41
15	1995	2.92	3.48	5.16	5.89	6.08	3.52
16	1978	3.29	4.05	5.91	6.70	5.57	4.08
17	1980	2.97	4.22	6.37	6.58	5.60	3.98
18	1974	3.00	5.00	6.24	6.58	5.74	3.78
19	1999	2.65	4.15	5.49	6.18	5.24	3.57
20	1993	2.99	4.60	5.20	6.01	5.19	3.59
21	1985	3.55	4.80	5.70	6.15	5.92	3.44
22	1988	3.63	4.64	6.44	6.74	5.91	3.85
23	1975	2.84	4.06	5.58	6.50	5.85	3.96
24	1998	3.22	4.90	5.00	6.13	5.64	4.14
25	1972	3.40	4.62	5.87	6.34	5.59	3.79
26	1976	3.32	4.72	6.01	6.91	5.79	4.08
27	1990	3.40	4.46	6.34	5.85	5.57	3.99
28	2000	3.63	4.91	5.89	6.67	5.85	3.97
29	1991	3.04	4.61	5.76	6.05	5.38	3.85
30	1994	3.21	4.98	6.37	6.37	5.72	4.07
	Normal flow year averages:	**3.12**	**4.47**	**5.81**	**6.35**	**5.62**	**3.82**

Notes:
1. See Table 2.1.4.20.
2. See Table 2.1.4.21.
3. See Table 2.1.4.22.

2.1.4.3.5.5 Reference Evapotranspiration, ET_O – Lower Laramie Subbasin

Table 2.1.4.24 contains a summary of Lower Laramie subbasin high, low, and normal or average stream flow years during the study period. The Lower Laramie subbasin study period is 22 years long, 1980 through 2001, inclusive, rather than the desired 30 years between 1972 and 2001, inclusive, because of a lack of stream flow data in this subbasin for the full 30 year study period. Table 2.1.4.24 contains information from Table 3.1.1.5 in Technical Memorandum 3.1.

Table 2.1.4.24 Summary – high stream flow, low stream flow, and normal or average stream flow years - Lower Laramie subbasin

No.	Year
1	1983
2	1984
3	1995
4	1986
5	1980
6	1999
7	1991
8	2000
9	1993
10	2001
11	1985
12	1988
13	1997
14	1996
15	1987
16	1982
17	1998
18	1981
19	1990
20	1994
21	1992
22	1989
	designates high stream flow years
	designates low stream flow years

Years which are neither shaded or outlined are normal or average stream flow years
See Table 3.1.1.5. in Technical Memorandum 3.1., Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year Determination

Tables 2.1.4.25, 2.1.4.26, and 2.1.4.27 contain reference evapotranspiration, ET_O, calculation parameters and values for high flow, low flow, and normal or average stream flow years, respectively, in the Lower Laramie subbasin. Table 2.1.4.28 contains a summary of ET_O values for the Lower Laramie subbasin for years of available record during the study period.

Table 2.1.4.25 Summary – reference evapotranspiration, ET_O, calculations - high flow years - Lower Laramie subbasin

1983						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1983						
Wheatland 4N weather station	24.3	28.1	27.9	33.7	35.3	39.6
TD (degrees Celsius) - 1983	**13.5**	**15.6**	**15.5**	**18.7**	**19.6**	**22.0**
T - 1983						
Wheatland 4N weather station	40.2	50.9	63.3	72.9	75.4	63.3
T (degrees Celsius) - 1983	**4.6**	**10.5**	**17.4**	**22.7**	**24.1**	**17.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1983 (inches per month)	**3.29**	**4.85**	**6.22**	**7.69**	**7.28**	**5.21**
1984						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1984						
Wheatland 4N weather station	25.4	35.3	34.8	35.8	32.7	33.4
TD (degrees Celsius) - 1984	**14.1**	**19.6**	**19.3**	**19.9**	**18.2**	**18.6**
T - 1983						
Wheatland 4N weather station	40.9	57.6	65.6	73.0	71.9	57.9
T (degrees Celsius) - 1984	**4.9**	**14.2**	**18.7**	**22.8**	**22.2**	**14.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1984 (inches per month)	**3.40**	**6.15**	**7.20**	**7.95**	**6.70**	**4.38**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.26 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Lower Laramie subbasin

1990						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1990						
Wheatland 4N weather station	29.6	31.0	34.7	30.6	33.2	34.2
TD (degrees Celsius) - 1990	**16.4**	**17.2**	**19.3**	**17.0**	**18.4**	**19.0**
T - 1990						
Wheatland 4N weather station	47.5	54.1	68.4	70.4	69.1	65.0
T (degrees Celsius) - 1990	**8.6**	**12.3**	**20.2**	**21.3**	**20.6**	**18.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1990 (inches per month)	**4.27**	**5.42**	**7.50**	**7.08**	**6.46**	**4.96**
1994						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1994						
Wheatland 4N weather station	32.5	32.5	34.6	32.6	35.7	36.3
TD (degrees Celsius) - 1994	**18.1**	**18.1**	**19.2**	**18.1**	**19.8**	**20.2**
T - 1994						
Wheatland 4N weather station	47.9	61.5	69.2	70.2	72.1	63.3
T (degrees Celsius) - 1994	**8.8**	**16.4**	**20.7**	**21.2**	**22.3**	**17.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1994 (inches per month)	**4.52**	**6.31**	**7.57**	**7.28**	**7.00**	**4.99**
1992						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1992						
Wheatland 4N weather station	34.5	31.8	30.0	29.8	32.4	37.9
TD (degrees Celsius) - 1992	**19.2**	**17.7**	**16.7**	**16.6**	**18.0**	**21.1**
T - 1992						
Wheatland 4N weather station	50.9	59.4	65.2	67.7	68.1	63.4
T (degrees Celsius) - 1992	**10.5**	**15.2**	**18.4**	**19.8**	**20.1**	**17.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1992 (inches per month)	**4.95**	**6.02**	**6.64**	**6.72**	**6.31**	**5.10**

Table 2.1.4.26 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Lower Laramie subbasin (cont)

1989						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1989						
Wheatland 4N weather station	31.8	32.4	33.0	35.7	34.1	34.0
TD (degrees Celsius) - 1989	**17.7**	**18.0**	**18.3**	**19.8**	**18.9**	**18.9**
T - 1989						
Wheatland 4N weather station	48.9	57.2	64.6	74.9	70.8	61.1
T (degrees Celsius) - 1989	**9.4**	**14.0**	**18.1**	**23.8**	**21.6**	**16.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1989 (inches per month)	**4.57**	**5.85**	**6.90**	**8.12**	**6.72**	**4.66**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.27 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Lower Laramie subbasin

1995						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1995						
Wheatland 4N weather station	27.1	21.0	27.3	32.7	36.2	31.0
TD (degrees Celsius) - 1995	**15.1**	**11.7**	**15.2**	**18.2**	**20.1**	**17.2**
T - 1995						
Wheatland 4N weather station	44.7	49.9	62.0	70.4	70.4	60.5
T (degrees Celsius) - 1995	**7.1**	**9.9**	**16.7**	**21.3**	**21.3**	**15.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1995 (inches per month)	**3.86**	**4.11**	**6.04**	**7.32**	**6.88**	**4.39**
1986						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1995						
Wheatland 4N weather station	28.5	34.6	32.5	35.3	35.5	27.3
TD (degrees Celsius) - 1995	**15.8**	**19.2**	**18.1**	**19.6**	**19.7**	**15.2**
T - 1995						
Wheatland 4N weather station	47.5	55.1	69.1	71.0	70.8	59.1
T (degrees Celsius) - 1995	**8.6**	**12.8**	**20.6**	**21.7**	**21.6**	**15.1**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1995 (inches per month)	**4.19**	**5.82**	**7.34**	**7.68**	**6.86**	**4.05**
1980						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1980						
Wheatland 4N weather station	29.8	29.1	40.7	37.2	34.1	37.9
TD (degrees Celsius) - 1980	**16.6**	**16.2**	**22.6**	**20.7**	**18.9**	**21.1**
T - 1980						
Wheatland 4N weather station	46.4	54.9	67.5	74.5	68.5	61.3
T (degrees Celsius) - 1980	**8.0**	**12.7**	**19.7**	**23.6**	**20.3**	**16.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1980 (inches per month)	**4.20**	**5.33**	**8.00**	**8.27**	**6.50**	**4.94**

Table 2.1.4.27 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Lower Laramie subbasin (cont)

1999						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1999						
Wheatland 4N weather station	24.7	28.1	29.4	33.3	31.6	32.8
TD (degrees Celsius) - 1999	**13.7**	**15.6**	**16.3**	**18.5**	**17.6**	**18.2**
T - 1999						
Wheatland 4N weather station	43.4	54.3	64.1	73.8	72.8	57.7
T (degrees Celsius) - 1999	**6.3**	**12.4**	**17.8**	**23.2**	**22.7**	**14.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1999 (inches per month)	**3.56**	**5.17**	**6.45**	**7.74**	**6.67**	**4.32**
1991						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1991						
Wheatland 4N weather station	26.5	25.6	27.8	32.3	31.3	33.8
TD (degrees Celsius) - 1991	**14.7**	**14.2**	**15.4**	**17.9**	**17.4**	**18.8**
T - 1991						
Wheatland 4N weather station	46.0	56.7	66.2	70.9	70.9	61.2
T (degrees Celsius) - 1991	**7.8**	**13.7**	**19.0**	**21.6**	**21.6**	**16.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1991 (inches per month)	**3.92**	**5.15**	**6.48**	**7.32**	**6.45**	**4.65**
2000						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 2000						
Wheatland 4N weather station	31.8	32.7	36.5	37.2	34.6	35.1
TD (degrees Celsius) - 2000	**17.7**	**18.2**	**20.3**	**20.7**	**19.2**	**19.5**
T - 2000						
Wheatland 4N weather station	48.1	58.7	66.0	75.0	75.0	61.7
T (degrees Celsius) - 2000	**8.9**	**14.8**	**18.9**	**23.9**	**23.9**	**16.5**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 2000 (inches per month)	**4.49**	**6.03**	**7.42**	**8.33**	**7.17**	**4.78**

Table 2.1.4.27 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Lower Laramie subbasin (cont)

1993						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1993						
Wheatland 4N weather station	27.6	29.8	28.9	32.9	32.9	31.8
TD (degrees Celsius) - 1993	**15.3**	**16.6**	**16.1**	**18.3**	**18.3**	**17.7**
T - 1993						
Wheatland 4N weather station	46.8	57.2	61.4	68.7	69.4	58.3
T (degrees Celsius) - 1993	**8.2**	**14.0**	**16.3**	**20.4**	**20.8**	**14.6**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1993 (inches per month)	**4.06**	**5.62**	**6.14**	**7.17**	**6.48**	**4.30**
2001						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 2001						
Wheatland 4N weather station	26.6	29.4	34.6	37.3	40.2	38.0
TD (degrees Celsius) - 2001	**14.8**	**16.3**	**19.2**	**20.7**	**22.3**	**21.1**
T - 2001						
Wheatland 4N weather station	38.0	56.4	69.7	76.3	73.6	63.1
T (degrees Celsius) - 2001	**3.3**	**13.6**	**20.9**	**24.6**	**23.1**	**17.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 2001 (inches per month)	**3.24**	**5.50**	**7.61**	**8.47**	**7.58**	**5.08**
1985						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1985						
Wheatland 4N weather station	34.4	33.6	35.1	35.5	38.6	30.8
TD (degrees Celsius) - 1985	**19.1**	**18.7**	**19.5**	**19.7**	**21.4**	**17.1**
T - 1985						
Wheatland 4N weather station	49.4	59.8	65.0	72.5	68.9	56.7
T (degrees Celsius) - 1985	**9.7**	**15.4**	**18.3**	**22.5**	**20.5**	**13.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1985 (inches per month)	**4.80**	**6.23**	**7.16**	**7.85**	**6.95**	**4.11**

Table 2.1.4.27 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Lower Laramie subbasin (cont)

1988						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1988						
Wheatland 4N weather station	34.9	33.8	32.0	32.8	36.3	35.7
TD (degrees Celsius) - 1988	**19.4**	**18.8**	**17.8**	**18.2**	**20.2**	**19.8**
T - 1988						
Wheatland 4N weather station	48.9	57.9	73.5	73.1	71.6	60.4
T (degrees Celsius) - 1988	**9.4**	**14.4**	**23.1**	**22.8**	**22.0**	**15.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1988 (inches per month)	**4.78**	**6.06**	**7.75**	**7.60**	**7.02**	**4.72**
1997						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1997						
Wheatland 4N weather station	27.6	32.0	29.4	32.9	30.7	29.5
TD (degrees Celsius) - 1997	**15.3**	**17.8**	**16.3**	**18.3**	**17.1**	**16.4**
T - 1997						
Wheatland 4N weather station	41.2	56.4	67.3	72.3	70.5	64.1
T (degrees Celsius) - 1997	**5.1**	**13.6**	**19.6**	**22.4**	**21.4**	**17.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1977 (inches per month)	**3.58**	**5.75**	**6.78**	**7.55**	**6.36**	**4.55**
1996						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1996						
Wheatland 4N weather station	31.8	27.6	34.0	32.3	35.7	35.6
TD (degrees Celsius) - 1996	**17.7**	**15.3**	**18.9**	**17.9**	**19.8**	**19.8**
T - 1996						
Wheatland 4N weather station	48.7	54.9	67.8	72.7	70.9	60.4
T (degrees Celsius) - 1996	**9.3**	**12.7**	**19.9**	**22.6**	**21.6**	**15.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1976 (inches per month)	**4.55**	**5.18**	**7.36**	**7.50**	**6.88**	**4.72**

Table 2.1.4.27 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Lower Laramie subbasin (cont)

1987						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1987						
Wheatland 4N weather station	37.1	27.2	35.1	34.3	32.9	37.9
TD (degrees Celsius) - 1987	**20.6**	**15.1**	**19.5**	**19.1**	**18.3**	**21.1**
T - 1987						
Wheatland 4N weather station	50.9	60.2	66.6	72.5	68.8	61.6
T (degrees Celsius) - 1987	**10.5**	**15.7**	**19.2**	**22.5**	**20.4**	**16.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1987 (inches per month)	**5.13**	**5.65**	**7.34**	**7.73**	**6.41**	**4.95**
1982						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1982						
Wheatland 4N weather station	34.5	27.3	29.9	37.5	33.5	29.3
TD (degrees Celsius) - 1982	**19.2**	**15.2**	**16.6**	**20.8**	**18.6**	**16.3**
T - 1982						
Wheatland 4N weather station	44.2	54.0	62.0	71.8	73.0	60.1
T (degrees Celsius) - 1982	**6.8**	**12.2**	**16.7**	**22.1**	**22.8**	**15.6**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1982 (inches per month)	**4.30**	**5.07**	**6.31**	**7.99**	**6.87**	**4.25**
1998						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1998						
Wheatland 4N weather station	30.2	30.6	28.6	31.6	32.6	35.5
TD (degrees Celsius) - 1998	**16.8**	**17.0**	**15.9**	**17.6**	**18.1**	**19.7**
T - 1998						
Wheatland 4N weather station	46.2	57.6	61.6	74.5	71.2	67.0
T (degrees Celsius) - 1998	**7.9**	**14.2**	**16.4**	**23.6**	**21.8**	**19.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1998 (inches per month)	**4.21**	**5.72**	**6.12**	**7.62**	**6.61**	**5.21**

Table 2.1.4.27 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Lower Laramie subbasin (cont)

1981						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.38**	**19.69**	**20.25**	**20.41**	**18.21**	**14.18**
TD - 1981						
Wheatland 4N weather station	32.1	25.0	37.1	34.3	35.4	40.0
TD (degrees Celsius) - 1981	**17.8**	**13.9**	**20.6**	**19.1**	**19.7**	**22.2**
T - 1981						
Wheatland 4N weather station	52.7	53.6	67.4	73.4	68.5	63.0
T (degrees Celsius) - 1981	**11.5**	**12.0**	**19.7**	**23.0**	**20.3**	**17.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1981 (inches per month)	**4.94**	**4.82**	**7.64**	**7.83**	**6.64**	**5.20**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.28 Summary – reference evapotranspiration, ET_O, values - all flow years - Lower Laramie subbasin

High flow years (1)		Monthly reference evapotranspiration, ET_O (inches per month)					
No.	**Year**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
1	1983	3.29	4.85	6.22	7.69	7.28	5.21
2	1984	3.40	6.15	7.20	7.95	6.70	4.38
	High flow averages:	**3.35**	**5.50**	**6.71**	**7.82**	**6.99**	**4.80**
Low flow years (2)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	**Year**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
4	1990	4.27	5.42	7.50	7.08	6.46	4.96
5	1994	4.52	6.31	7.57	7.28	7.00	4.99
6	1992	4.95	6.02	6.64	6.72	6.31	5.10
7	1989	4.57	5.85	6.90	8.12	6.72	4.66
	Low flow averages:	**4.58**	**5.90**	**7.15**	**7.30**	**6.62**	**4.93**
Normal or average flow years (3)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	**Year**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
8	1995	3.86	4.11	6.04	7.32	6.88	4.39
9	1986	4.19	5.82	7.34	7.68	6.86	4.05
10	1980	4.20	5.33	8.00	8.27	6.50	4.94
11	1999	3.56	5.17	6.45	7.74	6.67	4.32
12	1991	3.92	5.15	6.48	7.32	6.45	4.65
13	2000	4.49	6.03	7.42	8.33	7.17	4.78
14	1993	4.06	5.62	6.14	7.17	6.48	4.30
15	2001	3.24	5.50	7.61	8.47	7.58	5.08
16	1985	4.80	6.23	7.16	7.85	6.95	4.11
17	1988	4.78	6.06	7.75	7.60	7.02	4.72
18	1997	3.58	5.75	6.78	7.55	6.36	4.55
19	1996	4.55	5.18	7.36	7.50	6.88	4.72
20	1987	5.13	5.65	7.34	7.73	6.41	4.95
21	1982	4.30	5.07	6.31	7.99	6.87	4.25
22	1998	4.21	5.72	6.12	7.62	6.61	5.21
23	1981	4.94	4.82	7.64	7.83	6.64	5.20
	Normal flow year averages:	**4.24**	**5.45**	**7.00**	**7.75**	**6.77**	**4.64**

Notes:
1. See Table 2.1.4.25.
2. See Table 2.1.4.26.
3. See Table 2.1.4.27.

2.1.4.3.5.6 Reference Evapotranspiration, ET_O – Horse Creek Subbasin

Table 2.1.4.29 contains a summary of Lower Laramie subbasin high, low, and normal or average stream flow years during the study period. The Horse Creek subbasin study period is 21 years long, 1972 through 1992, inclusive, rather than the desired 30 years between 1972 and 2001, inclusive, because of a lack of stream flow data in this subbasin for the full 30 year study period. Table 2.1.4.29 contains information from Table 3.1.1.5 in Technical Memorandum 3.1.

Table 2.1.4.29 Summary – high stream flow, low stream flow, and normal or average stream flow years - Horse Creek subbasin

No.	Year
1	1986
2	1984
3	1985
4	1973
5	1974
6	1983
7	1988
8	1982
9	1987
10	1979
11	1976
12	1980
13	1977
14	1978
15	1981
16	1975
17	1991
18	1972
19	1989
20	1990
21	1992
	designates high stream flow years
	designates low stream flow years

Years which are neither shaded or outlined are normal or average stream flow years

See Table 3.1.1.5. in Technical Memorandum 3.1., Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year

Horse Creek subbasin high, low, and normal or average flows and years are those derived for the Guernsey to State Line subbasin due to the lack of adequate Horse Creek subbasin gauging data.

Tables 2.1.4.30, 2.1.4.31, and 2.1.4.32 contain reference evapotranspiration, ET_O, calculation parameters and values for high flow, low flow, and normal or average stream flow years, respectively, in the Horse Creek subbasin. Table 2.1.4.33 contains a summary of ET_O values for the Horse Creek subbasin for available years of record during the study period.

Table 2.1.4.30 Summary – reference evapotranspiration, ET_O, calculations - high flow years - Horse Creek subbasin

1986						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1986						
LaGrange weather station	29.5	34.5	36.2	37.8	36.3	31.0
TD (degrees Celsius) - 1986	**16.4**	**19.2**	**20.1**	**21.0**	**20.2**	**17.2**
T - 1986						
LaGrange weather station	45.2	51.7	66.6	69.4	68.5	56.0
T (degrees Celsius) - 1986	**7.3**	**10.9**	**19.2**	**20.8**	**20.3**	**13.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1986 (inches per month)	**4.08**	**5.46**	**7.44**	**7.77**	**6.73**	**4.09**
1984						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1984						
LaGrange weather station	25.5	34.5	34.5	34.3	34.5	34.6
TD (degrees Celsius) - 1984	**14.2**	**19.2**	**19.2**	**19.1**	**19.2**	**19.2**
T - 1984						
LaGrange weather station	38.9	56.5	63.0	71.3	70.3	54.9
T (degrees Celsius) - 1984	**3.8**	**13.6**	**17.2**	**21.8**	**21.3**	**12.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1984 (inches per month)	**3.26**	**5.98**	**6.88**	**7.60**	**6.74**	**4.24**
1985						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1985						
LaGrange weather station	33.2	34.7	35.4	34.9	39.0	33.2
TD (degrees Celsius) - 1985	**18.4**	**19.3**	**19.7**	**19.4**	**21.7**	**18.4**
T - 1985						
LaGrange weather station	49.3	57.9	63.6	72.1	67.8	55.2
T (degrees Celsius) - 1985	**9.6**	**14.4**	**17.6**	**22.3**	**19.9**	**12.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1985 (inches per month)	**4.71**	**6.15**	**7.05**	**7.76**	**6.91**	**4.18**

Table 2.1.4.30 Summary – reference evapotranspiration, ET_O, calculations - high flow years - Horse Creek subbasin (cont)

1973						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1973						
LaGrange weather station	24.9	33.1	34.4	32.4	37.5	28.2
TD (degrees Celsius) - 1973	**13.8**	**18.4**	**19.1**	**18.0**	**20.8**	**15.7**
T - 1973						
LaGrange weather station	39.7	51.5	65.1	69.5	70.7	55.5
T (degrees Celsius) - 1973	**4.3**	**10.8**	**18.4**	**20.8**	**21.5**	**13.1**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1973 (inches per month)	**3.29**	**5.33**	**7.10**	**7.19**	**7.05**	**3.89**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.31 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Horse Creek subbasin

1972						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1972						
LaGrange weather station	27.7	30.5	31.5	33.1	32.7	36.5
TD (degrees Celsius) - 1972	**15.4**	**16.9**	**17.5**	**18.4**	**18.2**	**20.3**
T - 1972						
LaGrange weather station	44.4	54.1	66.0	68.9	68.5	58.9
T (degrees Celsius) - 1972	**6.9**	**12.3**	**18.9**	**20.5**	**20.3**	**14.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1972 (inches per month)	**3.89**	**5.38**	**6.89**	**7.21**	**6.39**	**4.68**
1989						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1989						
LaGrange weather station	33.2	34.1	32.3	35.5	32.4	34.3
TD (degrees Celsius) - 1989	**18.4**	**18.9**	**17.9**	**19.7**	**18.0**	**19.1**
T - 1989						
LaGrange weather station	47.7	56.6	64.1	73.7	69.0	60.0
T (degrees Celsius) - 1989	**8.7**	**13.7**	**17.8**	**23.2**	**20.6**	**15.6**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1989 (inches per month)	**4.56**	**5.95**	**6.76**	**7.99**	**6.41**	**4.63**
1990						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1990						
LaGrange weather station	29.5	29.0	34.1	30.7	34.7	34.0
TD (degrees Celsius) - 1990	**16.4**	**16.1**	**18.9**	**17.1**	**19.3**	**18.9**
T - 1990						
LaGrange weather station	47.0	53.5	68.0	68.6	68.9	64.4
T (degrees Celsius) - 1990	**8.3**	**11.9**	**20.0**	**20.3**	**20.5**	**18.0**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1990 (inches per month)	**4.24**	**5.18**	**7.37**	**6.92**	**6.62**	**4.94**

Table 2.1.4.31 Summary – reference evapotranspiration, ET_O, calculations - low flow years - Horse Creek subbasin (cont)

1992						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1992						
LaGrange weather station	35.2	34.7	31.4	32.5	32.2	36.7
TD (degrees Celsius) - 1992	**19.6**	**19.3**	**17.4**	**18.1**	**17.9**	**20.4**
T - 1992						
LaGrange weather station	50.3	59.4	64.9	68.2	67.0	63.3
T (degrees Celsius) - 1992	**10.2**	**15.2**	**18.3**	**20.1**	**19.4**	**17.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1992 (inches per month)	**4.97**	**6.30**	**6.76**	**7.08**	**6.19**	**5.05**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.32 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Horse Crek subbasin

1974						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1974						
LaGrange weather station	27.9	35.0	35.7	37.9	36.4	37.5
TD (degrees Celsius) - 1974	**15.5**	**19.4**	**19.8**	**21.1**	**20.2**	**20.8**
T - 1974						
LaGrange weather station	44.3	55.9	66.8	73.0	66.0	54.1
T (degrees Celsius) - 1974	**6.8**	**13.3**	**19.3**	**22.8**	**18.9**	**12.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1974 (inches per month)	**3.88**	**5.95**	**7.41**	**8.19**	**6.49**	**4.36**
1983						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1983						
LaGrange weather station	27.2	31.6	29.0	36.5	33.5	39.7
TD (degrees Celsius) - 1983	**15.1**	**17.6**	**16.1**	**20.3**	**18.6**	**22.1**
T - 1983						
LaGrange weather station	39.3	50.1	60.8	71.0	74.0	60.1
T (degrees Celsius) - 1983	**4.1**	**10.1**	**16.0**	**21.7**	**23.3**	**15.6**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1983 (inches per month)	**3.41**	**5.09**	**6.09**	**7.82**	**6.97**	**4.98**
1988						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1988						
LaGrange weather station	37.8	33.3	37.9	34.2	35.9	35.6
TD (degrees Celsius) - 1988	**21.0**	**18.5**	**21.1**	**19.0**	**19.9**	**19.8**
T - 1988						
LaGrange weather station	47.4	54.9	71.3	72.6	72.0	60.4
T (degrees Celsius) - 1988	**8.6**	**12.7**	**21.8**	**22.6**	**22.2**	**15.8**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1988 (inches per month)	**4.85**	**5.70**	**8.16**	**7.73**	**7.02**	**4.75**

Table 2.1.4.32 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Horse Crek subbasin (cont)

1982						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1982						
LaGrange weather station	35.4	31.0	30.2	36.9	33.1	31.2
TD (degrees Celsius) - 1982	**19.7**	**17.2**	**16.8**	**20.5**	**18.4**	**17.3**
T - 1982						
LaGrange weather station	42.8	53.4	59.8	70.2	70.9	58.9
T (degrees Celsius) - 1982	**6.0**	**11.9**	**15.4**	**21.2**	**21.6**	**14.9**
Note: May TD and T values are averages of 1977 through 1981 TD and T values						
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1982 (inches per month)	**4.24**	**5.35**	**6.11**	**7.75**	**6.65**	**4.32**
1987						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1987						
LaGrange weather station	38.2	31.4	33.7	37.0	33.5	44.1
TD (degrees Celsius) - 1987	**21.2**	**17.4**	**18.7**	**20.6**	**18.6**	**24.5**
T - 1987						
LaGrange weather station	48.1	58.3	66.6	72.0	69.0	59.6
T (degrees Celsius) - 1987	**8.9**	**14.6**	**19.2**	**22.2**	**20.6**	**15.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1987 (inches per month)	**4.93**	**5.87**	**7.18**	**7.97**	**6.51**	**5.20**
1979						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1979						
LaGrange weather station	27.9	30.0	33.5	35.7	29.4	37.4
TD (degrees Celsius) - 1979	**15.5**	**16.7**	**18.6**	**19.8**	**16.3**	**20.8**
T - 1979						
LaGrange weather station	50.0	53.0	63.9	72.0	68.3	62.5
T (degrees Celsius) - 1979	**10.0**	**11.7**	**17.7**	**22.2**	**20.2**	**16.9**
Note: May, June, and July TD and T values are averages of 1974 through 1978 TD and T values.						
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1979 (inches per month)	**4.39**	**5.24**	**6.87**	**7.82**	**6.03**	**5.02**

Table 2.1.4.32 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Horse Crek subbasin (cont)

1976						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1976						
LaGrange weather station	25.2	28.9	31.3	34.9	35.8	34.4
TD (degrees Celsius) - 1976	**14.0**	**16.1**	**17.4**	**19.4**	**19.9**	**19.1**
T - 1976						
LaGrange weather station	42.3	50.3	59.4	70.6	65.4	56.9
T (degrees Celsius) - 1976	**5.7**	**10.2**	**15.2**	**21.4**	**18.6**	**13.8**
Note: July TD and T values are averages of 1971 through 1975 TD and T values.						
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1976 (inches per month)	**3.53**	**4.88**	**6.18**	**7.58**	**6.39**	**4.38**
1980						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1980						
LaGrange weather station	28.1	27.9	33.1	37.8	39.0	37.3
TD (degrees Celsius) - 1980	**15.6**	**15.5**	**18.4**	**21.0**	**21.7**	**20.7**
T - 1980						
LaGrange weather station	44.6	53.7	63.4	72.2	65.9	60.1
T (degrees Celsius) - 1980	**7.0**	**12.1**	**17.4**	**22.3**	**18.8**	**15.6**
Note: April and June TD and T values are averages of 1975 through 1979 TD and T values.						
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1980 (inches per month)	**3.93**	**5.11**	**6.78**	**8.07**	**6.71**	**4.82**
1977						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1977						
LaGrange weather station	28.0	29.6	30.4	31.3	36.5	39.0
TD (degrees Celsius) - 1977	**15.6**	**16.4**	**16.9**	**17.4**	**20.3**	**21.7**
T - 1977						
LaGrange weather station	44.4	55.0	68.0	71.4	68.0	62.5
T (degrees Celsius) - 1977	**6.9**	**12.8**	**20.0**	**21.9**	**20.0**	**16.9**
Note: August TD and T values are averages of 1972 through 1976 TD and T values.						
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1977 (inches per month)	**3.91**	**5.38**	**6.97**	**7.27**	**6.70**	**5.13**

Table 2.1.4.32 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Horse Crek subbasin (cont)

1978						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1978						
LaGrange weather station	27.4	27.5	35.8	36.7	37.2	39.7
TD (degrees Celsius) - 1978	**15.2**	**15.3**	**19.9**	**20.4**	**20.7**	**22.1**
T - 1978						
LaGrange weather station	46.8	51.9	63.9	72.0	67.1	61.7
T (degrees Celsius) - 1978	**8.2**	**11.1**	**17.7**	**22.2**	**19.5**	**16.5**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1978 (inches per month)	**4.07**	**4.91**	**7.11**	**7.93**	**6.67**	**5.12**
1981						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1981						
LaGrange weather station	31.9	28.8	34.9	33.6	35.7	35.7
TD (degrees Celsius) - 1981	**17.7**	**16.0**	**19.4**	**18.7**	**19.8**	**19.8**
T - 1981						
LaGrange weather station	51.4	52.8	65.3	71.4	68.2	62.2
T (degrees Celsius) - 1981	**10.8**	**11.6**	**18.5**	**21.9**	**20.1**	**16.8**
Note: May T and TD values are averages of 1973 through 1977 May T and TD values						
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1981 (inches per month)	**4.83**	**5.11**	**7.18**	**7.54**	**6.63**	**4.89**
1975						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1975						
LaGrange weather station	31.8	29.0	34.5	37.6	40.2	37.4
TD (degrees Celsius) - 1975	**17.7**	**16.1**	**19.2**	**20.9**	**22.3**	**20.8**
T - 1975						
LaGrange weather station	39.6	51.8	61.6	72.9	69.2	54.9
T (degrees Celsius) - 1975	**4.2**	**11.0**	**16.4**	**22.7**	**20.7**	**12.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1975 (inches per month)	**3.71**	**5.02**	**6.72**	**8.13**	**7.15**	**4.41**

Table 2.1.4.32 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - Horse Crek subbasin (cont)

1991						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.45**	**19.72**	**20.24**	**20.42**	**18.25**	**14.27**
TD - 1991						
LaGrange weather station	28.4	30.8	29.4	33.4	33.7	32.4
TD (degrees Celsius) - 1991	**15.8**	**17.1**	**16.3**	**18.6**	**18.7**	**18.0**
T - 1975						
LaGrange weather station	45.7	57.5	66.3	70.5	71.4	61.0
T (degrees Celsius) - 1991	**7.6**	**14.2**	**19.1**	**21.4**	**21.9**	**16.1**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1991 (inches per month)	**4.05**	**5.75**	**6.69**	**7.42**	**6.75**	**4.56**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.33 Summary – reference evapotranspiration, ET_O, values - all flow years - Horse Creek subbasin

High flow years (1)		Monthly reference evapotranspiration, ET_O (inches per month)					
No.	Year	Apr	May	Jun	Jul	Aug	Sep
1	1986	4.08	5.46	7.44	7.77	6.73	4.09
2	1984	3.26	5.98	6.88	7.60	6.74	4.24
3	1985	4.71	6.15	7.05	7.76	6.91	4.18
4	1973	3.29	5.33	7.10	7.19	7.05	3.89
	High flow averages:	**3.84**	**5.73**	**7.12**	**7.58**	**6.86**	**4.10**
Low flow years (2)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	Year	Apr	May	Jun	Jul	Aug	Sep
5	1972	3.89	5.38	6.89	7.21	6.39	4.68
6	1989	4.56	5.95	6.76	7.99	6.41	4.63
7	1990	4.24	5.18	7.37	6.92	6.62	4.94
8	1992	4.97	6.30	6.76	7.08	6.19	5.05
	Low flow averages:	**4.42**	**5.70**	**6.95**	**7.30**	**6.40**	**4.83**
Normal or average flow years (3)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	Year	Apr	May	Jun	Jul	Aug	Sep
9	1974	3.88	5.95	7.41	8.19	6.49	4.36
10	1983	3.41	5.09	6.09	7.82	6.97	4.98
11	1988	4.85	5.70	8.16	7.73	7.02	4.75
12	1982	4.24	5.35	6.11	7.75	6.65	4.32
13	1987	4.93	5.87	7.18	7.97	6.51	5.20
14	1979	4.39	5.24	6.87	7.82	6.03	5.02
15	1976	3.53	4.88	6.18	7.58	6.39	4.38
16	1980	3.93	5.11	6.78	8.07	6.71	4.82
17	1977	3.91	5.38	6.97	7.27	6.70	5.13
18	1978	4.07	4.91	7.11	7.93	6.67	5.12
19	1981	4.83	5.11	7.18	7.54	6.63	4.89
20	1975	3.71	5.02	6.72	8.13	7.15	4.41
21	1991	4.05	5.75	6.69	7.42	6.75	4.56
	Normal flow year averages:	**4.13**	**5.34**	**6.88**	**7.79**	**6.67**	**4.76**

Notes:

1. See Table 2.1.4.30.
2. See Table 2.1.4.31.
3. See Table 2.1.4.32.

2.1.4.3.5.7 Reference Evapotranspiration, ET_O – South Platte Subbasin

Table 2.1.4.34 contains a summary of South Platte subbasin high, low, and normal or average stream flow years during the study period. The South Platte subbasin study period is 21 years long, 1972 through 1992, inclusive, rather than the desired 30 years between 1972 and 2001, inclusive, because of a lack of stream flow data in this subbasin for the full 30 year study period. Table 2.1.4.34 contains information from Table 3.1.1.5 in Technical Memorandum 3.1.

Table 2.1.4.34 Summary – high stream flow, low stream flow, and normal or average stream flow years - South Platte subbasin

No.	Year
1	1986
2	1984
3	1985
4	1973
5	1974
6	1983
7	1988
8	1982
9	1987
10	1979
11	1976
12	1980
13	1977
14	1978
15	1981
16	1975
17	1991
18	1972
19	1989
20	1990
21	1992
	designates high stream flow years
	designates low stream flow years
Years and annual flows which are neither shaded or outlined are normal or average stream flow years and flows	
See Table 3.1.1.5. in Technical Memorandum 3.1., Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year	
South Platte subbasin high, low, and normal or average flows and years are those derived for the Guernsey to State Line subbasin due to the lack of adequate South Platte subbasin gauging data.	

Tables 2.1.4.35, 2.1.4.36, and 2.1.4.37 contain reference evapotranspiration, ET_O, calculation parameters and values for high flow, low flow, and normal or average stream flow years, respectively, in the South Platte subbasin. Table 2.1.4.38 contains a summary of ET_O values for the South Platte subbasin for years of available record during the study period.

Table 2.1.4.35 Summary – reference evapotranspiration, ET_O, calculations - high flow years - South Platte subbasin

1986						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1986						
Cheyenne WSFO AP weather station	22.9	25.8	26.7	29.7	28.0	23.2
Pine Bluffs 5 W/Pine Bluffs weather stations	26.3	28.5	28.8	32.0	31.0	27.6
Average TD (degrees Fahrenheit) - 1986	24.6	27.2	27.8	30.9	29.5	25.4
Average TD (degrees Celsius) - 1986	**13.7**	**15.1**	**15.4**	**17.2**	**16.4**	**14.1**
T - 1986						
Cheyenne WSFO AP weather station	43.9	50.6	64.5	68.5	67.0	55.3
Pine Bluffs 5 W/Pine Bluffs weather stations	45.9	53.9	67.8	71.7	69.5	57.5
Average T (degrees Fahrenheit) - 1986	44.9	52.3	66.2	70.1	68.3	56.4
Average T (degrees Celsius) - 1986	**7.2**	**11.3**	**19.0**	**21.2**	**20.2**	**13.6**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1986 (inches per month)	**3.73**	**4.92**	**6.48**	**7.10**	**6.07**	**3.77**
1984						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1984						
Cheyenne WSFO AP weather station	20.2	27.6	26.2	28.3	25.4	26.9
Pine Bluffs 5 W/Pine Bluffs weather stations	22.6	31.0	32.0	31.6	31.0	32.6
Average TD (degrees Fahrenheit) - 1984	21.4	29.3	29.1	30	28.2	29.8
Average TD (degrees Celsius) - 1984	**11.9**	**16.3**	**16.2**	**16.7**	**15.7**	**16.6**
T - 1984						
Cheyenne WSFO AP weather station	35.7	53.6	59.4	68.4	66.6	52.9
Pine Bluffs 5 W/Pine Bluffs weather stations	37.9	56.0	62.6	71.1	70.8	54.8
Average T (degrees Fahrenheit) - 1984	36.8	54.8	61	69.8	68.7	53.9
Average T (degrees Celsius) - 1984	**2.7**	**12.7**	**16.1**	**21.0**	**20.4**	**12.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1984 (inches per month)	**2.85**	**5.36**	**6.12**	**6.96**	**5.97**	**3.91**

Table 2.1.4.35 Summary – reference evapotranspiration, ET_O, calculations - high flow years - South Platte subbasin (cont)

1985						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1985						
Cheyenne WSFO AP weather station	25.5	27.8	30.1	26.0	30.1	24.8
Pine Bluffs 5 W/Pine Bluffs weather stations	29.8	32.3	33.0	32.5	37.0	30.9
Average TD (degrees Fahrenheit) - 1985	27.7	30.1	31.6	29.3	33.6	27.9
Average TD (degrees Celsius) - 1985	**15.4**	**16.7**	**17.6**	**16.3**	**18.7**	**15.5**
T - 1985						
Cheyenne WSFO AP weather station	45.5	54.3	61.1	69.3	66.7	52.8
Pine Bluffs 5 W/Pine Bluffs weather stations	48.5	57.3	63.4	71.2	68.5	55.0
Average T (degrees Fahrenheit) - 1985	47	55.8	62.3	70.3	67.6	53.9
Average T (degrees Celsius) - 1985	**8.3**	**13.2**	**16.8**	**21.3**	**19.8**	**12.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1985 (inches per month)	**4.13**	**5.51**	**6.51**	**6.93**	**6.41**	**3.77**
1973						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1973						
Cheyenne WSFO AP weather station	18.1	26.0	28.0	24.8	26.5	21.9
Pine Bluffs 5 W/Pine Bluffs weather stations	25.2	28.6	ND	ND	ND	ND
Average TD (degrees Fahrenheit) - 1973	21.7	27.3	28	24.8	26.5	21.9
Average TD (degrees Celsius) - 1973	**12.1**	**15.2**	**15.6**	**13.8**	**14.7**	**12.2**
T - 1973						
Cheyenne WSFO AP weather station	37.3	51.4	62.9	65.8	68.4	54.1
Pine Bluffs 5 W/Pine Bluffs weather stations	41.1	53.0	ND	ND	ND	ND
Average T (degrees Fahrenheit) - 1973	39.2	52.2	62.9	65.8	68.4	54.1
Average T (degrees Celsius) - 1973	**4.0**	**11.2**	**17.2**	**18.8**	**20.2**	**12.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1973 (inches per month)	**3.05**	**4.92**	**6.20**	**5.97**	**5.75**	**3.36**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.36 Summary – reference evapotranspiration, ET_O, calculations - low flow years - South Platte subbasin

1972						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1972						
Cheyenne WSFO AP weather station	24.5	25.2	25.5	27.5	26.6	26.1
Pine Bluffs 5 W/Pine Bluffs weather stations	25.5	27.9	30.3	32.2	29.6	32.6
Average TD (degrees Fahrenheit) - 1972	25.0	26.6	27.9	29.9	28.1	29.4
Average TD (degrees Celsius) - 1972	**13.9**	**14.8**	**15.5**	**16.6**	**15.6**	**16.3**
T - 1972						
Cheyenne WSFO AP weather station	42.5	51.2	63.1	64.3	64.6	56.6
Pine Bluffs 5 W/Pine Bluffs weather stations	44.8	53.1	65.9	66.9	66.8	58.7
Average T (degrees Fahrenheit) - 1972	43.7	52.2	64.5	65.6	65.7	57.7
Average T (degrees Celsius) - 1972	**6.5**	**11.2**	**18.1**	**18.7**	**18.7**	**14.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1972 (inches per month)	**3.65**	**4.85**	**6.34**	**6.53**	**5.69**	**4.14**
1989						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1989						
Cheyenne WSFO AP weather station	25.5	26.9	25.3	30.0	27.1	27.6
Pine Bluffs 5 W/Pine Bluffs weather stations	30.9	30.0	28.4	35.7	29.6	30.3
Average TD (degrees Fahrenheit) - 1989	28.2	28.5	26.9	32.9	28.4	29
Average TD (degrees Celsius) - 1989	**15.7**	**15.8**	**14.9**	**18.3**	**15.8**	**16.1**
T - 1989						
Cheyenne WSFO AP weather station	44.3	54.2	60.3	70.6	67.0	57.5
Pine Bluffs 5 W/Pine Bluffs weather stations	44.1	53.9	60.1	71.6	66.4	57.5
Average T (degrees Fahrenheit) - 1989	44.2	54.1	60.2	71.1	66.7	57.5
Average T (degrees Celsius) - 1989	**6.8**	**12.3**	**15.7**	**21.7**	**19.3**	**14.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1989 (inches per month)	**3.93**	**5.20**	**5.80**	**7.42**	**5.82**	**4.10**

Table 2.1.4.36 Summary – reference evapotranspiration, ET_O, calculations - low flow years - South Platte subbasin (cont)

1990						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1990						
Cheyenne WSFO AP weather station	24.5	25.9	29.4	24.8	27.5	27.1
Pine Bluffs 5 W/Pine Bluffs weather stations	28.1	28.1	31.0	29.2	32.6	31.5
Average TD (degrees Fahrenheit) - 1990	26.3	27	30.2	27	30.1	29.3
Average TD (degrees Celsius) - 1990	**14.6**	**15.0**	**16.8**	**15.0**	**16.7**	**16.3**
T - 1990						
Cheyenne WSFO AP weather station	42.8	49.3	64.1	65.0	66.4	62.2
Pine Bluffs 5 W/Pine Bluffs weather stations	43.3	49.7	65.5	66.7	66.6	62.0
Average T (degrees Fahrenheit) - 1990	43.1	49.5	64.8	65.9	66.5	62.1
Average T (degrees Celsius) - 1990	**6.2**	**9.7**	**18.2**	**18.8**	**19.2**	**16.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1990 (inches per month)	**3.69**	**4.63**	**6.62**	**6.22**	**5.96**	**4.45**
1992						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1992						
Cheyenne WSFO AP weather station	28.1	27.0	26.0	26.0	25.8	29.9
Pine Bluffs 5 W/Pine Bluffs weather stations	34.5	33.0	ND	28.3	30.2	35.3
Average TD (degrees Fahrenheit) - 1992	31.3	30	26	27.2	28	32.6
Average TD (degrees Celsius) - 1992	**17.4**	**16.7**	**14.4**	**15.1**	**15.6**	**18.1**
T - 1992						
Cheyenne WSFO AP weather station	48.6	55.0	60.8	64.6	63.8	60.0
Pine Bluffs 5 W/Pine Bluffs weather stations	46.9	57.1	ND	65.6	64.0	59.7
Average T (degrees Fahrenheit) - 1992	47.8	56.1	60.8	65.1	63.9	59.9
Average T (degrees Celsius) - 1992	**8.8**	**13.4**	**16.0**	**18.4**	**17.7**	**15.5**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1992 (inches per month)	**4.47**	**5.55**	**5.76**	**6.18**	**5.53**	**4.53**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.37 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - South Platte subbasin

1974						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1974						
Cheyenne WSFO AP weather station	22.2	27.4	24.3	26.8	26.8	25.9
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	ND	ND	ND	ND	ND
Average TD (degrees Fahrenheit) - 1974	22.2	27.4	24.3	26.8	26.8	25.9
Average TD (degrees Celsius) - 1974	**12.3**	**15.2**	**13.5**	**14.9**	**14.9**	**14.4**
T - 1974						
Cheyenne WSFO AP weather station	43.3	55.0	64.0	70.1	65.2	55.2
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	ND	ND	ND	ND	ND
Average T (degrees Fahrenheit) - 1974	43.3	55	64	70.1	65.2	55.2
Average T (degrees Celsius) - 1974	**6.3**	**12.8**	**17.8**	**21.2**	**18.4**	**12.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1974 (inches per month)	**3.40**	**5.19**	**5.87**	**6.61**	**5.51**	**3.72**
1983						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1983						
Cheyenne WSFO AP weather station	20.8	22.5	22.8	27.5	27.6	31.7
Pine Bluffs 5 W/Pine Bluffs weather stations	23.3	25.8	26.3	33.6	31.7	36.6
Average TD (degrees Fahrenheit) - 1983	22.1	24.2	24.6	30.6	29.7	34.2
Average TD (degrees Celsius) - 1983	**12.3**	**13.4**	**13.7**	**17.0**	**16.5**	**19.0**
T - 1983						
Cheyenne WSFO AP weather station	34.8	47.4	57.3	67.8	70.2	58.9
Pine Bluffs 5 W/Pine Bluffs weather stations	38.4	48.9	61.0	71.0	74.0	59.5
Average T (degrees Fahrenheit) - 1983	36.6	48.2	59.2	69.4	72.1	59.2
Average T (degrees Celsius) - 1983	**2.6**	**9.0**	**15.1**	**20.8**	**22.3**	**15.1**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1983 (inches per month)	**2.88**	**4.27**	**5.46**	**6.99**	**6.42**	**4.58**

Table 2.1.4.37 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - South Platte subbasin (cont)

1988						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1988						
Cheyenne WSFO AP weather station	29.4	26.3	27.4	29.7	28.8	27.9
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	30.2	31.7	35.0	34.0	34.7
Average TD (degrees Fahrenheit) - 1988	29.4	28.3	29.6	32.4	31.4	31.3
Average TD (degrees Celsius) - 1988	**16.3**	**15.7**	**16.4**	**18.0**	**17.4**	**17.4**
T - 1988						
Cheyenne WSFO AP weather station	44.4	53.2	67.4	69.6	68.7	57.5
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	54.4	69.0	69.7	69.6	57.7
Average T (degrees Fahrenheit) - 1988	44.4	53.8	68.2	69.7	69.2	57.6
Average T (degrees Celsius) - 1988	**6.9**	**12.1**	**20.1**	**20.9**	**20.7**	**14.2**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1988 (inches per month)	**4.02**	**5.15**	**6.89**	**7.21**	**6.33**	**4.27**
1982						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1982						
Cheyenne WSFO AP weather station	28.8	24.1	24.2	26.4	25.5	23.5
Pine Bluffs 5 W/Pine Bluffs weather stations	33.0	27.7	29.1	32.6	32.0	28.4
Average TD (degrees Fahrenheit) - 1982	30.9	25.9	26.7	29.5	28.8	$26.0
Average TD (degrees Celsius) - 1982	**17.2**	**14.4**	**14.8**	**16.4**	**16.0**	**14.4**
T - 1982						
Cheyenne WSFO AP weather station	41.8	50.5	57.5	67.7	69.0	56.6
Pine Bluffs 5 W/Pine Bluffs weather stations	41.8	52.6	60.2	70.3	70.5	58.1
Average T (degrees Fahrenheit) - 1982	41.8	51.6	58.9	69	69.8	57.4
Average T (degrees Celsius) - 1982	**5.4**	**10.9**	**14.9**	**20.6**	**21.0**	**14.1**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1982 (inches per month)	**3.88**	**4.74**	**5.65**	**6.83**	**6.12**	**3.87**

Table 2.1.4.37 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - South Platte subbasin (cont)

1987						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1987						
Cheyenne WSFO AP weather station	29.0	22.7	26.7	28.6	26.4	30.3
Pine Bluffs 5 W/Pine Bluffs weather stations	32.7	23.2	29.9	32.1	27.9	32.9
Average TD (degrees Fahrenheit) - 1987	30.9	23	28.3	30.4	27.2	31.6
Average TD (degrees Celsius) - 1987	**17.2**	**12.8**	**15.7**	**16.9**	**15.1**	**17.6**
T - 1987						
Cheyenne WSFO AP weather station	46.7	54.5	63.3	69.2	64.9	57.9
Pine Bluffs 5 W/Pine Bluffs weather stations	49.7	57.1	66.5	71.7	65.9	58.2
Average T (degrees Fahrenheit) - 1987	48.2	55.8	64.9	70.5	65.4	58.1
Average T (degrees Celsius) - 1987	**9.0**	**13.2**	**18.3**	**21.4**	**18.6**	**14.5**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1987 (inches per month)	**4.48**	**4.82**	**6.42**	**7.08**	**5.58**	**4.33**
1979						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1979						
Cheyenne WSFO AP weather station	26.1	21.7	26.0	29.0	25.4	30.5
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	ND	ND	ND	31.4	34.1
Average TD (degrees Fahrenheit) - 1979	26.1	21.7	26	29	28.4	32.3
Average TD (degrees Celsius) - 1979	**14.5**	**12.1**	**14.4**	**16.1**	**15.8**	**17.9**
T - 1979						
Cheyenne WSFO AP weather station	44.9	49.9	61.5	69.9	65.9	62.8
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	ND	ND	ND	65.9	63.6
Average T (degrees Fahrenheit) - 1979	44.9	49.9	61.5	69.9	65.9	63.2
Average T (degrees Celsius) - 1979	**7.2**	**9.9**	**16.4**	**21.1**	**18.8**	**17.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1979 (inches per month)	**3.83**	**4.19**	**5.82**	**6.85**	**5.74**	**4.75**

Table 2.1.4.37 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - South Platte subbasin (cont)

1976						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1976						
Cheyenne WSFO AP weather station	23.2	24.8	27.4	28.2	27.4	26.8
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	ND	ND	ND	ND	ND
Average TD (degrees Fahrenheit) - 1976	23.2	24.8	27.4	28.2	27.4	26.8
Average TD (degrees Celsius) - 1976	**12.9**	**13.8**	**15.2**	**15.7**	**15.2**	**14.9**
T - 1976						
Cheyenne WSFO AP weather station	42.7	51.1	59.7	69.2	65.0	57.7
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	ND	ND	ND	ND	ND
Average T (degrees Fahrenheit) - 1976	42.7	51.1	59.7	69.2	65	57.7
Average T (degrees Celsius) - 1976	**5.9**	**10.6**	**15.4**	**20.7**	**18.3**	**14.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1976 (inches per month)	**3.43**	**4.59**	**5.81**	**6.70**	**5.55**	**3.96**
1980						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1980						
Cheyenne WSFO AP weather station	23.5	21.9	31.9	28.9	28.7	30.9
Pine Bluffs 5 W/Pine Bluffs weather stations	27.8	27.7	37.2	35.5	34.5	36.5
Average TD (degrees Fahrenheit) - 1980	25.7	24.8	34.6	32.2	31.6	33.7
Average TD (degrees Celsius) - 1980	**14.3**	**13.8**	**19.2**	**17.9**	**17.6**	**18.7**
T - 1980						
Cheyenne WSFO AP weather station	42.3	51.1	65.5	71.4	66.4	60.4
Pine Bluffs 5 W/Pine Bluffs weather stations	42.7	51.1	65.9	73.3	68.4	60.8
Average T (degrees Fahrenheit) - 1980	42.5	51.1	65.7	72.4	67.4	60.6
Average T (degrees Celsius) - 1980	**5.8**	**10.6**	**18.7**	**22.4**	**19.7**	**15.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1980 (inches per month)	**3.59**	**4.59**	**7.18**	**7.47**	**6.20**	**4.66**

Table 2.1.4.37 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - South Platte subbasin (cont)

1977						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1977						
Cheyenne WSFO AP weather station	23.9	25.8	26.4	26.7	24.0	30.5
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	ND	ND	ND	ND	ND
Average TD (degrees Fahrenheit) - 1977	23.9	25.8	26.4	26.7	24	30.5
Average TD (degrees Celsius) - 1977	**13.3**	**14.3**	**14.7**	**14.8**	**13.3**	**16.9**
T - 1977						
Cheyenne WSFO AP weather station	44.7	53.4	65.2	68.2	63.5	60.6
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	ND	ND	ND	ND	ND
Average T (degrees Fahrenheit) - 1977	44.7	53.4	65.2	68.2	63.5	60.6
Average T (degrees Celsius) - 1977	**7.1**	**11.9**	**18.4**	**20.1**	**17.5**	**15.9**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1977 (inches per month)	**3.66**	**4.89**	**6.23**	**6.40**	**5.08**	**4.43**
1978						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1978						
Cheyenne WSFO AP weather station	23.8	22.9	28.6	29.6	28.4	29.5
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	ND	ND	ND	ND	ND
Average TD (degrees Fahrenheit) - 1978	23.8	22.9	28.6	29.6	28.4	29.5
Average TD (degrees Celsius) - 1978	**13.2**	**12.7**	**15.9**	**16.4**	**15.8**	**16.4**
T - 1978						
Cheyenne WSFO AP weather station	43.9	49.0	61.0	68.7	64.3	59.5
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	ND	ND	ND	ND	ND
Average T (degrees Fahrenheit) - 1978	43.9	49	61	68.7	64.3	59.5
Average T (degrees Celsius) - 1978	**6.6**	**9.4**	**16.1**	**20.4**	**17.9**	**15.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1978 (inches per month)	**3.57**	**4.22**	**6.07**	**6.79**	**5.60**	**4.28**

Table 2.1.4.37 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - South Platte subbasin (cont)

1981						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1981						
Cheyenne WSFO AP weather station	28.1	20.3	27.9	25.7	25.2	28.0
Pine Bluffs 5 W/Pine Bluffs weather stations	30.9	26.1	32.5	32.2	31.1	34.3
Average TD (degrees Fahrenheit) - 1981	29.5	23.2	30.2	29	28.2	31.2
Average TD (degrees Celsius) - 1981	**16.4**	**12.9**	**16.8**	**16.1**	**15.7**	**17.3**
T - 1981						
Cheyenne WSFO AP weather station	50.1	50.5	63.7	69.0	65.2	61.2
Pine Bluffs 5 W/Pine Bluffs weather stations	49.9	51.5	65.5	70.1	68.0	61.9
Average T (degrees Fahrenheit) - 1981	50.0	51.0	64.6	69.6	66.6	61.6
Average T (degrees Celsius) - 1981	**10.0**	**10.6**	**18.1**	**20.9**	**19.2**	**16.4**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1981 (inches per month)	**4.53**	**4.44**	**6.60**	**6.82**	**5.78**	**4.55**
1975						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1975						
Cheyenne WSFO AP weather station	24.3	23.6	26.8	27.0	30.0	29.3
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	ND	ND	ND	ND	ND
Average TD (degrees Fahrenheit) - 1975	24.3	23.6	26.8	27	30	29.3
Average TD (degrees Celsius) - 1975	**13.5**	**13.1**	**14.9**	**15.0**	**16.7**	**16.3**
T - 1975						
Cheyenne WSFO AP weather station	37.5	48.4	57.9	67.3	66.3	56.0
Pine Bluffs 5 W/Pine Bluffs weather stations	ND	ND	ND	ND	ND	ND
Average T (degrees Fahrenheit) - 1975	37.5	48.4	57.9	67.3	66.3	56
Average T (degrees Celsius) - 1975	**3.1**	**9.1**	**14.4**	**19.6**	**19.1**	**13.3**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1975 (inches per month)	**3.09**	**4.23**	**5.58**	**6.36**	**5.95**	**4.01**

Table 2.1.4.37 Summary – reference evapotranspiration, ET_O, calculations - normal or average flow years - South Platte subbasin (cont)

1991						
Irrigation season month:	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
RA, extraterrestrial solar radiation (inches per month) (1)	**16.52**	**19.74**	**20.24**	**20.42**	**18.30**	**14.37**
TD - 1991						
Cheyenne WSFO AP weather station	22.9	24.2	24.6	27.6	25.7	26.7
Pine Bluffs 5 W/Pine Bluffs weather stations	28.0	28.0	28.1	ND	30.9	32.6
Average TD (degrees Fahrenheit) - 1991	25.5	26.1	26.4	27.6	28.3	29.7
Average TD (degrees Celsius) - 1991	**14.2**	**14.5**	**14.7**	**15.3**	**15.7**	**16.5**
T - 1991						
Cheyenne WSFO AP weather station	41.0	52.4	62.5	67.7	67.6	58.0
Pine Bluffs 5 W/Pine Bluffs weather stations	42.7	54.6	63.9	ND	68.5	58.9
Average T (degrees Fahrenheit) - 1991	41.9	53.5	63.2	67.7	68.1	58.5
Average T (degrees Celsius) - 1991	**5.5**	**11.9**	**17.3**	**19.8**	**20.1**	**14.7**
WCF, Wyoming calibration factor (2)	**1.06**	**0.958**	**0.964**	**0.935**	**0.937**	**0.967**
ET_O, reference evapotranspiration - 1991 (inches per month)	**3.54**	**4.92**	**6.04**	**6.46**	**5.92**	**4.22**

Notes:
(1) See Table 2.1.4.2. and Appendix 2.1.4.A.
(2) See Table 2.1.4.3.

Table 2.1.4.38 Summary – reference evapotranspiration, ET_O, values - all flow years - South Platte subbasin

High flow years (1)		Monthly reference evapotranspiration, ET_O (inches per month)					
No.	Year	Apr	May	Jun	Jul	Aug	Sep
1	1986	3.73	4.92	6.48	7.10	6.07	3.77
2	1984	2.85	5.36	6.12	6.96	5.97	3.91
3	1985	4.13	5.51	6.51	6.93	6.41	3.77
4	1973	3.05	4.92	6.20	5.97	5.75	3.36
	High flow averages:	**3.44**	**5.18**	**6.33**	**6.74**	**6.05**	**3.70**
Low flow years (2)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	Year	Apr	May	Jun	Jul	Aug	Sep
5	1972	3.65	4.85	6.34	6.53	5.69	4.14
6	1989	3.93	5.20	5.80	7.42	5.82	4.10
7	1990	3.69	4.63	6.62	6.22	5.96	4.45
8	1992	4.47	5.55	5.76	6.18	5.53	4.53
	Low flow averages:	**3.94**	**5.06**	**6.13**	**6.59**	**5.75**	**4.31**
Normal or average flow years (3)		**Monthly reference evapotranspiration, ET_O (inches per month)**					
No.	Year	Apr	May	Jun	Jul	Aug	Sep
9	1974	3.40	5.19	5.87	6.61	5.51	3.72
10	1983	2.88	4.27	5.46	6.99	6.42	4.58
11	1988	4.02	5.15	6.89	7.21	6.33	4.27
12	1982	3.88	4.74	5.65	6.83	6.12	3.87
13	1987	4.48	4.82	6.42	7.08	5.58	4.33
14	1979	3.83	4.19	5.82	6.85	5.74	4.75
15	1976	3.43	4.59	5.81	6.70	5.55	3.96
16	1980	3.59	4.59	7.18	7.47	6.20	4.66
17	1977	3.66	4.89	6.23	6.40	5.08	4.43
18	1978	3.57	4.22	6.07	6.79	5.60	4.28
19	1981	4.53	4.44	6.60	6.82	5.78	4.55
20	1975	3.09	4.23	5.58	6.36	5.95	4.01
21	1991	3.54	4.92	6.04	6.46	5.92	4.22
	Normal flow year averages:	**3.68**	**4.63**	**6.12**	**6.81**	**5.83**	**4.28**

Notes:
(1) See Table 2.1.4.35.
(2) See Table 2.1.4.36.
(3) See Table 2.1.4.37.

2.1.4.4 Crop Coefficients (K_{CO})

Crop coefficients, K_{CO}, are unitless, crop-specific numerical values that are combined with reference evapotranspiration, ET_O, to calculate maximum monthly evapotranspiration, $ET_{C(MAX)}$, for specific crops in units of inches per month. Crop coefficients are determined for each month of the irrigation season and vary for individual crops. Table 2.1.4.39 summarizes crop coefficients, organized by Platte River Basin subbasin, that were used for basin plan irrigation water consumptive use calculations. Many of the Table 2.1.4.39 crop coefficients were taken directly from Supreme Court (2001). Some basin plan crop coefficients that were not included in Supreme Court (2001) were obtained from "Consumptive Use and Consumptive Irrigation Requirements in Wyoming" (Pochop and others, 1992).

Table 2.1.4.39 Summary - monthly crop coefficients, K_{co}

Crop	Applicable subbasins	Monthly average grass reference crop coefficients (K_{CO}) Apr	May	Jun	Jul	Aug	Sep
Winter wheat	Upper basin (1)	0.410	0.820	1.170	1.010	0.500	--
	Lower basin (2)	0.540	1.110	1.150	0.690	--	--
Spring wheat	Upper basin (1)	--	0.570	1.130	1.050	0.560	--
	Lower basin (2)	0.440	0.880	1.180	0.770	--	--
Barley (11)	all	0.467	0.977	1.193	0.893	0.339	0.250
Oats (11)	all	0.467	0.977	1.193	0.893	0.339	0.250
Dry beans	all	0.250	0.250	0.887	1.183	0.577	0.250
Sugar beets	all	0.430	0.480	0.820	1.100	1.100	0.860
Corn	all	0.250	0.397	1.152	1.253	1.009	0.417
Alfalfa	above Pathfinder, Upper Laramie (3)	0.330	0.509	1.144	0.808	0.478	0.478
	Pathfinder to Guernsey (4)	0.701	1.029	0.889	1.049	0.431	0.419
	all other subbasins (5)	0.701	1.029	0.889	1.049	0.558	0.501
Other hay	above Pathfinder, Upper Laramie (3)	0.383	0.577	1.028	0.660	0.559	0.559
	Pathfinder to Guernsey (6)	0.500	0.702	1.043	1.093	0.469	0.508
	all other subbasins (7)	0.500	0.702	1.043	1.093	0.685	0.742
Irrigated pasture	above Pathfinder, Upper Laramie (8)	0.383	0.536	0.745	0.707	0.482	0.482
	Pathfinder to Guernsey (9)	0.300	0.461	0.731	0.772	0.529	0.529
	all other subbasins (10)	0.300	0.461	0.731	0.772	0.772	0.772

Notes:

(1) Above Pathfinder and Upper Laramie subbasins - crop coefficients from Table 7., p. 14, "Consumptive Use and Consumptive Irrigation Requirements in Wyoming," Larry Pochop and others, 1992, and are italicized above.

(2) Pathfinder to Guernsey, Guernsey to State Line, Lower Laramie, Horse Creek, and South Platte subbasins - crop coefficients from Table 7., p. 14, "Consumptive Use and Consumptive Irrigation Requirements in Wyoming," Larry Pochop and others, 1992, and

(3) Assumes one cutting, continued irrigation for pasture after cutting; July, August, and September values calibrated to derive unit consumptive use values very similar to those derived from consumptive use data in the Final Settlement Stipulation (Supr

(4) Assumes two cuttings, continued irrigation after second cutting for pasture; August and September values calibrated to derive unit consumptive use values very similar to those derived from consumptive use data in the Final Settlement Stipulation (Sup

(5) Assumes two cuttings, continued irrigation after cutting for pasture

(6) Assumes one cutting, continued irrigation after second cutting for pasture; August and September values calibrated to derive unit consumptive use values very similar to those derived from consumptive use data in the Final Settlement Stipulation (Supr

(7) Assumes one cutting, continued irrigation after cutting for pasture

(8) Assumes pasture is not harvested; July, August, and September values calibrated to derive unit consumptive use values very similar to those derived from consumptive use data in the Final Settlement Stipulation (Supreme Court, 2001)

(9) Assumes pasture is not harvested; August and September values calibrated to derive unit consumptive use values very similar to those derived from consumptive use data in the Final Settlement Stipulation (Supreme Court, 2001)

(10) Assumes pasture is not harvested.

(11) Crop coefficients are those for "small grains" in Appendix G, 2001 Modified North Platte Decree

Crop coefficient calibration

Monthly Supreme Court (2001) crop coefficients for alfalfa, other hay, and irrigated pasture and for the months of July, August, and September in the Above Pathfinder subbasin and for the months of August and September in the Pathfinder to Guernsey subbasin were calibrated before application to basin plan consumptive use calculations. The goals of this calibration were to:

- incorporate into basin plan consumptive use calculations Supreme Court (2001) consideration of reduced annual subbasin consumptive use based on a shorter irrigation seasons in portions of these two subbasins, and
- generate basin plan unit consumptive use values, CU_W, for these subbasins that were very similar to corresponding unit consumptive use values derived from Supreme Court (2001) and subsequent Wyoming State Engineer's Office data.

Calibrated basin plan Above Pathfinder subbasin alfalfa, other hay, and irrigated pasture crop coefficients were also applied to basin plan Upper Laramie subbasin consumptive use calculations because of the topographic, climatologic, and agricultural similarities between these two subbasins. Supreme Court (2001) lists two sets each of monthly consumptive use values for alfalfa, other hay, and irrigated pasture in the Above Pathfinder and Pathfinder to Guernsey subbasins. These multiple crop coefficient sets were incorporated into Supreme Court (2001) consumptive use calculations to account for shortened irrigation seasons and differing cultivation practices in portions of each of these two subbasins. Because of the breadth of basin plan consumptive use calculations, basin plan calculations utilized a single set of calibrated monthly crop coefficients for alfalfa, other hay, and irrigated pasture. Calibrating by adjusting downward in value the late irrigation season basin plan alfalfa, other hay, and irrigated pasture monthly crop coefficients for the Above Pathfinder and Pathfinder to Guernsey subbasins to account for shorter irrigation seasons and differing cultivation practices in parts of these subbasins was reasonable and appropriate. Notes at the bottom of Table 2.1.4.39. describe the sources of all basin plan crop coefficients.

2.1.4.5 Maximum Evapotranspiration, $ET_{C(max)}$, Values for Individual Crops

Maximum monthly evapotransporation, $ET_{C(max)}$, in units of inches of water for each crop and each month during the irrigation season was calculated as the product of reference evapotranspiration, ET_O, for grass and the appropriate monthly crop coefficient, K_{CO}, using the equation:

$ET_{c(max)} = ET_o \times K_{co(mo),}$ where: (Equation 2)

$ET_{c(max)}$ = maximum monthly evapotranspiration for a given crop, in units of inches per month,

ET_o = reference monthly evapotranspiration for grass in the subbasin and during the month under consideration, in units of inches per month (see Section 2.1.4.3.), and

$K_{co(mo)}$ = the coefficient for a given crop during a given month of the irrigation season in a specific Platte River Basin subbasin, a unitless value (see Section 2.1.4.4.).

2.1.4.5.1. Maximum Crop Evapotranspiration, $ET_{C(max)}$ - Above Pathfinder Subbasin

Table 2.1.4.40 summarizes maximum evapotranspiration calculations for each crop and each month during high, low, and normal or average stream flow years of available record during 1972 through 2001 irrigation seasons in the Above Pathfinder subbasin.

Table 2.1.4.40 Summary – maximum crop evapotranspiration - Above Pathfinder subbasin

Row		Crop coefficients, K_{CO} (1)					
		Apr	May	Jun	Jul	Aug	Sep
A	winter wheat	0.410	0.820	1.170	1.010	0.500	--
B	spring wheat	--	0.570	1.130	1.050	0.560	--
C	barley	0.467	0.977	1.193	0.893	0.339	0.250
D	oats	0.467	0.977	1.193	0.893	0.339	0.250
E	dry beans	0.250	0.250	0.887	1.183	0.577	0.250
F	sugar beets	0.430	0.480	0.820	1.100	1.100	0.860
G	corn	0.250	0.397	1.152	1.253	1.009	0.417
H	alfalfa	0.330	0.509	1.144	0.808	0.478	0.478
I	other hay	0.383	0.577	1.028	0.660	0.559	0.559
J	irrigated pasture	0.383	0.536	0.745	0.707	0.482	0.482

High flow years (2)

1984

Row	Parameter	Apr	May	Jun	Jul	Aug	Sep
a	**Reference evapotranspiration, ET_O (inches per month) (2)**	**2.80**	**5.21**	**5.97**	**6.78**	**5.88**	**3.95**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	1.15	4.27	6.98	6.85	2.94	--
a x B	spring wheat	--	2.97	6.75	7.12	3.29	--
a x C	barley	1.31	5.09	7.12	6.05	1.99	0.99
a x D	oats	1.31	5.09	7.12	6.05	1.99	0.99
a x E	dry beans	0.70	1.30	5.30	8.02	3.39	0.99
a x F	sugar beets	1.20	2.50	4.90	7.46	6.47	3.40
a x G	corn	0.70	2.07	6.88	8.50	5.93	1.65
a x H	alfalfa	0.92	2.65	6.83	5.48	2.81	1.89
a x I	other hay	1.07	3.01	6.14	4.47	3.29	2.21
a x J	irrigated pasture	1.07	2.79	4.45	4.79	2.83	1.90

1983

Row	Parameter	Apr	May	Jun	Jul	Aug	Sep
b	**Reference evapotranspiration, ET_O (inches per month) (2)**	**2.75**	**4.22**	**5.62**	**6.65**	**6.13**	**4.36**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	1.13	3.46	6.58	6.72	3.07	--
b x B	spring wheat	--	2.41	6.35	6.98	3.43	--
b x C	barley	1.28	4.12	6.70	5.94	2.08	1.09
b x D	oats	1.28	4.12	6.70	5.94	2.08	1.09
b x E	dry beans	0.69	1.06	4.98	7.87	3.54	1.09
b x F	sugar beets	1.18	2.03	4.61	7.32	6.74	3.75
b x G	corn	0.69	1.68	6.47	8.33	6.19	1.82
b x H	alfalfa	0.91	2.15	6.43	5.37	2.93	2.08
b x I	other hay	1.05	2.43	5.78	4.39	3.43	2.44
b x J	irrigated pasture	1.05	2.26	4.19	4.70	2.95	2.10

Table 2.1.4.40 Summary – maximum crop evapotranspiration - Above Pathfinder subbasin (cont)

1985							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
c	**(inches per month) (2)**	**3.97**	**5.29**	**6.44**	**6.72**	**6.27**	**3.69**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	1.63	4.34	7.53	6.79	3.14	--
c x B	spring wheat	--	3.02	7.28	7.06	3.51	--
c x C	barley	1.85	5.17	7.68	6.00	2.13	0.92
c x D	oats	1.85	5.17	7.68	6.00	2.13	0.92
c x E	dry beans	0.99	1.32	5.71	7.95	3.62	0.92
c x F	sugar beets	1.71	2.54	5.28	7.39	6.90	3.17
c x G	corn	0.99	2.10	7.42	8.42	6.33	1.54
c x H	alfalfa	1.31	2.69	7.37	5.43	3.00	1.76
c x I	other hay	1.52	3.05	6.62	4.44	3.50	2.06
c x J	irrigated pasture	1.52	2.84	4.80	4.75	3.02	1.78
1986							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
d	**(inches per month) (2)**	**3.48**	**4.93**	**6.81**	**6.33**	**6.12**	**3.69**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	1.43	4.04	7.97	6.39	3.06	--
d x B	spring wheat	--	2.81	7.70	6.65	3.43	--
d x C	barley	1.63	4.82	8.12	5.65	2.07	0.92
d x D	oats	1.63	4.82	8.12	5.65	2.07	0.92
d x E	dry beans	0.87	1.23	6.04	7.49	3.53	0.92
d x F	sugar beets	1.50	2.37	5.58	6.96	6.73	3.17
d x G	corn	0.87	1.96	7.85	7.93	6.18	1.54
d x H	alfalfa	1.15	2.51	7.79	5.11	2.93	1.76
d x I	other hay	1.33	2.84	7.00	4.18	3.42	2.06
d x J	irrigated pasture	1.33	2.64	5.07	4.48	2.95	1.78
1973							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
e	**(inches per month) (2)**	**2.56**	**4.72**	**6.14**	**6.33**	**6.07**	**3.94**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
e x A	winter wheat	1.05	3.87	7.18	6.39	3.04	--
e x B	spring wheat	--	2.69	6.94	6.65	3.40	--
e x C	barley	1.20	4.61	7.33	5.65	2.06	0.99
e x D	oats	1.20	4.61	7.33	5.65	2.06	0.99
e x E	dry beans	0.64	1.18	5.45	7.49	3.50	0.99
e x F	sugar beets	1.10	2.27	5.03	6.96	6.68	3.39
e x G	corn	0.64	1.87	7.07	7.93	6.12	1.64
e x H	alfalfa	0.84	2.40	7.02	5.11	2.90	1.88
e x I	other hay	0.98	2.72	6.31	4.18	3.39	2.20
e x J	irrigated pasture	0.98	2.53	4.57	4.48	2.93	1.90

Table 2.1.4.40 Summary – maximum crop evapotranspiration - Above Pathfinder subbasin (cont)

Row	Parameter	Apr	May	Jun	Jul	Aug	Sep
	1997						
	Reference evapotranspiration, ET_O						
f	**(inches per month) (2)**	**3.13**	**5.06**	**6.37**	**7.01**	**5.82**	**4.15**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
f x A	winter wheat	1.28	4.15	7.45	7.08	2.91	--
f x B	spring wheat	--	2.88	7.20	7.36	3.26	--
f x C	barley	1.46	4.94	7.60	6.26	1.97	1.04
f x D	oats	1.46	4.94	7.60	6.26	1.97	1.04
f x E	dry beans	0.78	1.27	5.65	8.29	3.36	1.04
f x F	sugar beets	1.35	2.43	5.22	7.71	6.40	3.57
f x G	corn	0.78	2.01	7.34	8.78	5.87	1.73
f x H	alfalfa	1.03	2.58	7.29	5.66	2.78	1.98
f x I	other hay	1.20	2.92	6.55	4.63	3.25	2.32
f x J	irrigated pasture	1.20	2.71	4.75	4.96	2.81	2.00
	Low flow years (2)						
	2001						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
a	**(inches per month) (2)**	**3.64**	**5.24**	**6.61**	**7.47**	**6.47**	**4.56**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	1.49	4.30	7.73	7.54	3.24	--
a x B	spring wheat	--	2.99	7.47	7.84	3.62	--
a x C	barley	1.70	5.12	7.89	6.67	2.19	1.14
a x D	oats	1.70	5.12	7.89	6.67	2.19	1.14
a x E	dry beans	0.91	1.31	5.86	8.84	3.73	1.14
a x F	sugar beets	1.57	2.52	5.42	8.22	7.12	3.92
a x G	corn	0.91	2.08	7.61	9.36	6.53	1.90
a x H	alfalfa	1.20	2.67	7.56	6.04	3.09	2.18
a x I	other hay	1.39	3.02	6.80	4.93	3.62	2.55
a x J	irrigated pasture	1.39	2.81	4.92	5.28	3.12	2.20
	1987						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
b	**(inches per month) (2)**	**4.26**	**4.93**	**6.41**	**6.61**	**5.69**	**4.30**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	1.75	4.04	7.50	6.68	2.85	--
b x B	spring wheat	--	2.81	7.24	6.94	3.19	--
b x C	barley	1.99	4.82	7.65	5.90	1.93	1.08
b x D	oats	1.99	4.82	7.65	5.90	1.93	1.08
b x E	dry beans	1.07	1.23	5.69	7.82	3.28	1.08
b x F	sugar beets	1.83	2.37	5.26	7.27	6.26	3.70
b x G	corn	1.07	1.96	7.38	8.28	5.74	1.79
b x H	alfalfa	1.41	2.51	7.33	5.34	2.72	2.06
b x I	other hay	1.63	2.84	6.59	4.36	3.18	2.40
b x J	irrigated pasture	1.63	2.64	4.78	4.67	2.74	2.07

Table 2.1.4.40 Summary – maximum crop evapotranspiration - Above Pathfinder subbasin (cont)

1981							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
c	**(inches per month) (2)**	**4.26**	**4.24**	**6.57**	**6.91**	**6.07**	**4.33**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	1.75	3.48	7.69	6.98	3.04	--
c x B	spring wheat	--	2.42	7.42	7.26	3.40	--
c x C	barley	1.99	4.14	7.84	6.17	2.06	1.08
c x D	oats	1.99	4.14	7.84	6.17	2.06	1.08
c x E	dry beans	1.07	1.06	5.83	8.17	3.50	1.08
c x F	sugar beets	1.83	2.04	5.39	7.60	6.68	3.72
c x G	corn	1.07	1.68	7.57	8.66	6.12	1.81
c x H	alfalfa	1.41	2.16	7.52	5.58	2.90	2.07
c x I	other hay	1.63	2.45	6.75	4.56	3.39	2.42
c x J	irrigated pasture	1.63	2.27	4.89	4.89	2.93	2.09
1992							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
d	**(inches per month) (2)**	**4.22**	**5.24**	**5.96**	**6.28**	**5.92**	**4.24**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	1.73	4.30	6.97	6.34	2.96	--
d x B	spring wheat	--	2.99	6.73	6.59	3.32	--
d x C	barley	1.97	5.12	7.11	5.61	2.01	1.06
d x D	oats	1.97	5.12	7.11	5.61	2.01	1.06
d x E	dry beans	1.06	1.31	5.29	7.43	3.42	1.06
d x F	sugar beets	1.81	2.52	4.89	6.91	6.51	3.65
d x G	corn	1.06	2.08	6.87	7.87	5.97	1.77
d x H	alfalfa	1.39	2.67	6.82	5.07	2.83	2.03
d x I	other hay	1.62	3.02	6.13	4.14	3.31	2.37
d x J	irrigated pasture	1.62	2.81	4.44	4.44	2.85	2.04
1989							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
e	**(inches per month) (2)**	**3.98**	**5.25**	**6.14**	**7.19**	**5.79**	**4.18**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
e x A	winter wheat	1.63	4.31	7.18	7.26	2.90	--
e x B	spring wheat	--	2.99	6.94	7.55	3.24	--
e x C	barley	1.86	5.13	7.33	6.42	1.96	1.05
e x D	oats	1.86	5.13	7.33	6.42	1.96	1.05
e x E	dry beans	1.00	1.31	5.45	8.51	3.34	1.05
e x F	sugar beets	1.71	2.52	5.03	7.91	6.37	3.59
e x G	corn	1.00	2.08	7.07	9.01	5.84	1.74
e x H	alfalfa	1.31	2.67	7.02	5.81	2.77	2.00
e x I	other hay	1.52	3.03	6.31	4.75	3.24	2.34
e x J	irrigated pasture	1.52	2.81	4.57	5.08	2.79	2.01

Table 2.1.4.40 Summary – maximum crop evapotranspiration - Above Pathfinder subbasin (cont)

1977							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
f	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.98**	**5.27**	**7.23**	**7.03**	**5.88**	**4.47**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
f x A	winter wheat	1.63	4.32	8.46	7.10	2.94	--
f x B	spring wheat	--	3.00	8.17	7.38	3.29	--
f x C	barley	1.86	5.15	8.63	6.28	1.99	1.12
f x D	oats	1.86	5.15	8.63	6.28	1.99	1.12
f x E	dry beans	1.00	1.32	6.41	8.32	3.39	1.12
f x F	sugar beets	1.71	2.53	5.93	7.73	6.47	3.84
f x G	corn	1.00	2.09	8.33	8.81	5.93	1.86
f x H	alfalfa	1.31	2.68	8.27	5.68	2.81	2.14
f x I	other hay	1.52	3.04	7.43	4.64	3.29	2.50
f x J	irrigated pasture	1.52	2.82	5.39	4.97	2.83	2.15
Normal or average flow years (2)							
1995							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
a	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.33**	**3.95**	**5.49**	**6.59**	**6.44**	**4.05**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	1.37	3.24	6.42	6.66	3.22	--
a x B	spring wheat	--	2.25	6.20	6.92	3.61	--
a x C	barley	1.56	3.86	6.55	5.88	2.18	1.01
a x D	oats	1.56	3.86	6.55	5.88	2.18	1.01
a x E	dry beans	0.83	0.99	4.87	7.80	3.72	1.01
a x F	sugar beets	1.43	1.90	4.50	7.25	7.08	3.48
a x G	corn	0.83	1.57	6.32	8.26	6.50	1.69
a x H	alfalfa	1.10	2.01	6.28	5.32	3.08	1.94
a x I	other hay	1.28	2.28	5.64	4.35	3.60	2.26
a x J	irrigated pasture	1.28	2.12	4.09	4.66	3.10	1.95

Table 2.1.4.40 Summary – maximum crop evapotranspiration - Above Pathfinder subbasin (cont)

Row	Parameter	Apr	May	Jun	Jul	Aug	Sep
	1974						
b	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.39**	**5.26**	**6.64**	**6.91**	**5.97**	**4.19**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	1.39	4.31	7.77	6.98	2.99	--
b x B	spring wheat	--	3.00	7.50	7.26	3.34	--
b x C	barley	1.58	5.14	7.92	6.17	2.02	1.05
b x D	oats	1.58	5.14	7.92	6.17	2.02	1.05
b x E	dry beans	0.85	1.32	5.89	8.17	3.44	1.05
b x F	sugar beets	1.46	2.52	5.44	7.60	6.57	3.60
b x G	corn	0.85	2.09	7.65	8.66	6.02	1.75
b x H	alfalfa	1.12	2.68	7.60	5.58	2.85	2.00
b x I	other hay	1.30	3.04	6.83	4.56	3.34	2.34
b x J	irrigated pasture	1.30	2.82	4.95	4.89	2.88	2.02
	1980						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
c	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.35**	**4.73**	**6.76**	**7.00**	**5.93**	**4.29**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	1.37	3.88	7.91	7.07	2.97	--
c x B	spring wheat	--	2.70	7.64	7.35	3.32	--
c x C	barley	1.56	4.62	8.06	6.25	2.01	1.07
c x D	oats	1.56	4.62	8.06	6.25	2.01	1.07
c x E	dry beans	0.84	1.18	6.00	8.28	3.42	1.07
c x F	sugar beets	1.44	2.27	5.54	7.70	6.52	3.69
c x G	corn	0.84	1.88	7.79	8.77	5.98	1.79
c x H	alfalfa	1.11	2.41	7.73	5.66	2.83	2.05
c x I	other hay	1.28	2.73	6.95	4.62	3.31	2.40
c x J	irrigated pasture	1.28	2.54	5.04	4.95	2.86	2.07
	1982						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
d	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.51**	**4.57**	**5.85**	**6.67**	**6.05**	**3.73**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	1.44	3.75	6.84	6.74	3.03	--
d x B	spring wheat	--	2.60	6.61	7.00	3.39	--
d x C	barley	1.64	4.46	6.98	5.96	2.05	0.93
d x D	oats	1.64	4.46	6.98	5.96	2.05	0.93
d x E	dry beans	0.88	1.14	5.19	7.89	3.49	0.93
d x F	sugar beets	1.51	2.19	4.80	7.34	6.66	3.21
d x G	corn	0.88	1.81	6.74	8.36	6.10	1.56
d x H	alfalfa	1.16	2.33	6.69	5.39	2.89	1.78
d x I	other hay	1.34	2.64	6.01	4.40	3.38	2.09
d x J	irrigated pasture	1.34	2.45	4.36	4.72	2.92	1.80

Table 2.1.4.40 Summary – maximum crop evapotranspiration - Above Pathfinder subbasin (cont)

1978							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
e	**(inches per month) (2)**	**3.79**	**4.65**	**6.31**	**7.29**	**5.98**	**4.36**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
e x A	winter wheat	1.55	3.81	7.38	7.36	2.99	--
e x B	spring wheat	--	2.65	7.13	7.65	3.35	--
e x C	barley	1.77	4.54	7.53	6.51	2.03	1.09
e x D	oats	1.77	4.54	7.53	6.51	2.03	1.09
e x E	dry beans	0.95	1.16	5.60	8.62	3.45	1.09
e x F	sugar beets	1.63	2.23	5.17	8.02	6.58	3.75
e x G	corn	0.95	1.85	7.27	9.13	6.03	1.82
e x H	alfalfa	1.25	2.37	7.22	5.89	2.86	2.08
e x I	other hay	1.45	2.68	6.49	4.81	3.34	2.44
e x J	irrigated pasture	1.45	2.49	4.70	5.15	2.88	2.10
1996							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
f	**(inches per month) (2)**	**3.63**	**4.88**	**6.67**	**7.18**	**6.50**	**4.04**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
f x A	winter wheat	1.49	4.00	7.80	7.25	3.25	--
f x B	spring wheat	--	2.78	7.54	7.54	3.64	--
f x C	barley	1.70	4.77	7.96	6.41	2.20	1.01
f x D	oats	1.70	4.77	7.96	6.41	2.20	1.01
f x E	dry beans	0.91	1.22	5.92	8.49	3.75	1.01
f x F	sugar beets	1.56	2.34	5.47	7.90	7.15	3.47
f x G	corn	0.91	1.94	7.68	9.00	6.56	1.68
f x H	alfalfa	1.20	2.48	7.63	5.80	3.11	1.93
f x I	other hay	1.39	2.82	6.86	4.74	3.63	2.26
f x J	irrigated pasture	1.39	2.62	4.97	5.08	3.13	1.95
1979							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
g	**(inches per month) (2)**	**3.51**	**4.69**	**6.44**	**7.09**	**5.56**	**4.69**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
g x A	winter wheat	1.44	3.85	7.53	7.16	2.78	--
g x B	spring wheat	--	2.67	7.28	7.44	3.11	--
g x C	barley	1.64	4.58	7.68	6.33	1.88	1.17
g x D	oats	1.64	4.58	7.68	6.33	1.88	1.17
g x E	dry beans	0.88	1.17	5.71	8.39	3.21	1.17
g x F	sugar beets	1.51	2.25	5.28	7.80	6.12	4.03
g x G	corn	0.88	1.86	7.42	8.88	5.61	1.96
g x H	alfalfa	1.16	2.39	7.37	5.73	2.66	2.24
g x I	other hay	1.34	2.71	6.62	4.68	3.11	2.62
g x J	irrigated pasture	1.34	2.51	4.80	5.01	2.68	2.26

Table 2.1.4.40 Summary – maximum crop evapotranspiration - Above Pathfinder subbasin (cont)

1999							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
h	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.10**	**4.71**	**6.16**	**7.14**	**6.09**	**4.00**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
h x A	winter wheat	1.27	3.86	7.21	7.21	3.05	--
h x B	spring wheat	--	2.68	6.96	7.50	3.41	--
h x C	barley	1.45	4.60	7.35	6.38	2.06	1.00
h x D	oats	1.45	4.60	7.35	6.38	2.06	1.00
h x E	dry beans	0.78	1.18	5.46	8.45	3.51	1.00
h x F	sugar beets	1.33	2.26	5.05	7.85	6.70	3.44
h x G	corn	0.78	1.87	7.10	8.95	6.14	1.67
h x H	alfalfa	1.02	2.40	7.05	5.77	2.91	1.91
h x I	other hay	1.19	2.72	6.33	4.71	3.40	2.24
h x J	irrigated pasture	1.19	2.52	4.59	5.05	2.94	1.93
1993							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
i	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.12**	**4.83**	**5.62**	**6.51**	**5.71**	**3.98**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
i x A	winter wheat	1.28	3.96	6.58	6.58	2.86	--
i x B	spring wheat	--	2.75	6.35	6.84	3.20	--
i x C	barley	1.46	4.72	6.70	5.81	1.94	1.00
i x D	oats	1.46	4.72	6.70	5.81	1.94	1.00
i x E	dry beans	0.78	1.21	4.98	7.70	3.29	1.00
i x F	sugar beets	1.34	2.32	4.61	7.16	6.28	3.42
i x G	corn	0.78	1.92	6.47	8.16	5.76	1.66
i x H	alfalfa	1.03	2.46	6.43	5.26	2.73	1.90
i x I	other hay	1.19	2.79	5.78	4.30	3.19	2.22
i x J	irrigated pasture	1.19	2.59	4.19	4.60	2.75	1.92
1975							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
j	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.04**	**4.54**	**5.84**	**6.89**	**6.07**	**4.22**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
j x A	winter wheat	1.25	3.72	6.83	6.96	3.04	--
j x B	spring wheat	--	2.59	6.60	7.23	3.40	--
j x C	barley	1.42	4.44	6.97	6.15	2.06	1.06
j x D	oats	1.42	4.44	6.97	6.15	2.06	1.06
j x E	dry beans	0.76	1.14	5.18	8.15	3.50	1.06
j x F	sugar beets	1.31	2.18	4.79	7.58	6.68	3.63
j x G	corn	0.76	1.80	6.73	8.63	6.12	1.76
j x H	alfalfa	1.00	2.31	6.68	5.57	2.90	2.02
j x I	other hay	1.16	2.62	6.00	4.55	3.39	2.36
j x J	irrigated pasture	1.16	2.43	4.35	4.87	2.93	2.03

Table 2.1.4.40 Summary – maximum crop evapotranspiration - Above Pathfinder subbasin (cont)

1998							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
k	**(inches per month) (2)**	**3.58**	**5.30**	**5.48**	**7.12**	**6.17**	**4.65**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
k x A	winter wheat	1.47	4.35	6.41	7.19	3.09	--
k x B	spring wheat	--	3.02	6.19	7.48	3.46	--
k x C	barley	1.67	5.18	6.54	6.36	2.09	1.16
k x D	oats	1.67	5.18	6.54	6.36	2.09	1.16
k x E	dry beans	0.90	1.33	4.86	8.42	3.56	1.16
k x F	sugar beets	1.54	2.54	4.49	7.83	6.79	4.00
k x G	corn	0.90	2.10	6.31	8.92	6.23	1.94
k x H	alfalfa	1.18	2.70	6.27	5.75	2.95	2.22
k x I	other hay	1.37	3.06	5.63	4.70	3.45	2.60
k x J	irrigated pasture	1.37	2.84	4.08	5.03	2.97	2.24
1988							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
l	**(inches per month) (2)**	**4.11**	**5.12**	**6.59**	**7.27**	**6.18**	**4.07**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
l x A	winter wheat	1.69	4.20	7.71	7.34	3.09	--
l x B	spring wheat	--	2.92	7.45	7.63	3.46	--
l x C	barley	1.92	5.00	7.86	6.49	2.10	1.02
l x D	oats	1.92	5.00	7.86	6.49	2.10	1.02
l x E	dry beans	1.03	1.28	5.85	8.60	3.57	1.02
l x F	sugar beets	1.77	2.46	5.40	8.00	6.80	3.50
l x G	corn	1.03	2.03	7.59	9.11	6.24	1.70
l x H	alfalfa	1.36	2.61	7.54	5.87	2.95	1.95
l x I	other hay	1.57	2.95	6.77	4.80	3.45	2.28
l x J	irrigated pasture	1.57	2.74	4.91	5.14	2.98	1.96
1976							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
m	**(inches per month) (2)**	**3.54**	**5.22**	**5.95**	**7.13**	**5.78**	**4.26**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
m x A	winter wheat	1.45	4.28	6.96	7.20	2.89	--
m x B	spring wheat	--	2.98	6.72	7.49	3.24	--
m x C	barley	1.65	5.10	7.10	6.37	1.96	1.07
m x D	oats	1.65	5.10	7.10	6.37	1.96	1.07
m x E	dry beans	0.89	1.31	5.28	8.43	3.34	1.07
m x F	sugar beets	1.52	2.51	4.88	7.84	6.36	3.66
m x G	corn	0.89	2.07	6.85	8.93	5.83	1.78
m x H	alfalfa	1.17	2.66	6.81	5.76	2.76	2.04
m x I	other hay	1.36	3.01	6.12	4.71	3.23	2.38
m x J	irrigated pasture	1.36	2.80	4.43	5.04	2.79	2.05

Table 2.1.4.40 Summary – maximum crop evapotranspiration - Above Pathfinder subbasin (cont)

Row	Parameter	Apr	May	Jun	Jul	Aug	Sep
	1972						
n	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.66**	**5.04**	**6.22**	**6.92**	**6.05**	**4.06**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
n x A	winter wheat	1.50	4.13	7.28	6.99	3.03	--
n x B	spring wheat	--	2.87	7.03	7.27	3.39	--
n x C	barley	1.71	4.92	7.42	6.18	2.05	1.02
n x D	oats	1.71	4.92	7.42	6.18	2.05	1.02
n x E	dry beans	0.92	1.26	5.52	8.19	3.49	1.02
n x F	sugar beets	1.57	2.42	5.10	7.61	6.66	3.49
n x G	corn	0.92	2.00	7.17	8.67	6.10	1.69
n x H	alfalfa	1.21	2.57	7.12	5.59	2.89	1.94
n x I	other hay	1.40	2.91	6.39	4.57	3.38	2.27
n x J	irrigated pasture	1.40	2.70	4.63	4.89	2.92	1.96
	1991						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
o	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.32**	**4.84**	**6.22**	**6.70**	**6.06**	**4.11**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
o x A	winter wheat	1.36	3.97	7.28	6.77	3.03	--
o x B	spring wheat	--	2.76	7.03	7.04	3.39	--
o x C	barley	1.55	4.73	7.42	5.98	2.05	1.03
o x D	oats	1.55	4.73	7.42	5.98	2.05	1.03
o x E	dry beans	0.83	1.21	5.52	7.93	3.50	1.03
o x F	sugar beets	1.43	2.32	5.10	7.37	6.67	3.53
o x G	corn	0.83	1.92	7.17	8.40	6.11	1.71
o x H	alfalfa	1.10	2.46	7.12	5.41	2.90	1.96
o x I	other hay	1.27	2.79	6.39	4.42	3.39	2.30
o x J	irrigated pasture	1.27	2.59	4.63	4.74	2.92	1.98
	2000						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
p	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.18**	**5.51**	**6.74**	**7.59**	**6.53**	**4.10**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
p x A	winter wheat	1.71	4.52	7.89	7.67	3.27	--
p x B	spring wheat	--	3.14	7.62	7.97	3.66	--
p x C	barley	1.95	5.38	8.04	6.78	2.21	1.03
p x D	oats	1.95	5.38	8.04	6.78	2.21	1.03
p x E	dry beans	1.05	1.38	5.98	8.98	3.77	1.03
p x F	sugar beets	1.80	2.64	5.53	8.35	7.18	3.53
p x G	corn	1.05	2.19	7.76	9.51	6.59	1.71
p x H	alfalfa	1.38	2.80	7.71	6.13	3.12	1.96
p x I	other hay	1.60	3.18	6.93	5.01	3.65	2.29
p x J	irrigated pasture	1.60	2.95	5.02	5.37	3.15	1.98

Table 2.1.4.40 Summary – maximum crop evapotranspiration - Above Pathfinder subbasin (cont)

1990							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
q	**(inches per month) (2)**	**3.80**	**4.84**	**6.30**	**6.53**	**6.02**	**4.42**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
q x A	winter wheat	1.56	3.97	7.37	6.60	3.01	--
q x B	spring wheat	--	2.76	7.12	6.86	3.37	--
q x C	barley	1.77	4.73	7.52	5.83	2.04	1.11
q x D	oats	1.77	4.73	7.52	5.83	2.04	1.11
q x E	dry beans	0.95	1.21	5.59	7.72	3.47	1.11
q x F	sugar beets	1.63	2.32	5.17	7.18	6.62	3.80
q x G	corn	0.95	1.92	7.26	8.18	6.07	1.84
q x H	alfalfa	1.25	2.46	7.21	5.28	2.88	2.11
q x I	other hay	1.46	2.79	6.48	4.31	3.37	2.47
q x J	irrigated pasture	1.46	2.59	4.69	4.62	2.90	2.13
1994							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
r	**(inches per month) (2)**	**3.76**	**5.66**	**6.98**	**7.09**	**6.41**	**4.40**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
r x A	winter wheat	1.54	4.64	8.17	7.16	3.21	--
r x B	spring wheat	--	3.23	7.89	7.44	3.59	--
r x C	barley	1.76	5.53	8.33	6.33	2.17	1.10
r x D	oats	1.76	5.53	8.33	6.33	2.17	1.10
r x E	dry beans	0.94	1.42	6.19	8.39	3.70	1.10
r x F	sugar beets	1.62	2.72	5.72	7.80	7.05	3.78
r x G	corn	0.94	2.25	8.04	8.88	6.47	1.83
r x H	alfalfa	1.24	2.88	7.99	5.73	3.06	2.10
r x I	other hay	1.44	3.27	7.18	4.68	3.58	2.46
r x J	irrigated pasture	1.44	3.03	5.20	5.01	3.09	2.12

Notes:
(1) See Table 2.1.4.39.
(2) See Table 2.1.4.8.

2.1.4.5.1 Maximum Crop Evapotranspiration, $ET_{C(max)}$ - Pathfinder to Guernsey Subbasin

Table 2.1.4.41 summarizes maximum evapotranspiration calculations for each crop and each month during high, low, and normal or average stream flow years of available record during 1972 through 2001 irrigation seasons in the Pathfinder to Guernsey subbasin.

Table 2.1.4.41 Summary – maximum crop evapotranspiration - Pathfinder to Guernsey subbasin

Row	Crop coefficients, K_{CO} (1)						
		Apr	May	Jun	Jul	Aug	Sep
A	winter wheat	0.540	1.110	1.150	0.690	--	--
B	spring wheat	0.440	0.880	1.180	0.770	--	--
C	barley	0.467	0.977	1.193	0.893	0.339	0.250
D	oats	0.467	0.977	1.193	0.893	0.339	0.250
E	dry beans	0.250	0.250	0.887	1.183	0.577	0.250
F	sugar beets	0.430	0.480	0.820	1.100	1.100	0.860
G	corn	0.250	0.397	1.152	1.253	1.009	0.417
H	alfalfa	0.701	1.029	0.889	1.049	0.431	0.419
I	other hay	0.500	0.702	1.043	1.093	0.469	0.508
J	irrigated pasture	0.300	0.461	0.731	0.772	0.529	0.529
	High flow years (2)						
	1983						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
a	**(inches per month) (2)**	**2.99**	**4.66**	**5.93**	**7.34**	**6.75**	**4.61**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	1.61	5.17	6.82	5.06	--	--
a x B	spring wheat	1.32	4.10	7.00	5.65	--	--
a x C	barley	1.40	4.55	7.07	6.55	2.29	1.15
a x D	oats	1.40	4.55	7.07	6.55	2.29	1.15
a x E	dry beans	0.75	1.17	5.26	8.68	3.89	1.15
a x F	sugar beets	1.29	2.24	4.86	8.07	7.43	3.96
a x G	corn	0.75	1.85	6.83	9.20	6.81	1.92
a x H	alfalfa	2.10	4.80	5.27	7.70	2.91	1.93
a x I	other hay	1.50	3.27	6.18	8.02	3.17	2.34
a x J	irrigated pasture	0.90	2.15	4.33	5.67	3.57	2.44
	1973						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
b	**(inches per month) (2)**	**2.89**	**5.15**	**6.89**	**7.13**	**6.80**	**3.85**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	1.56	5.72	7.92	4.92	--	--
b x B	spring wheat	1.27	4.53	8.13	5.49	--	--
b x C	barley	1.35	5.03	8.22	6.37	2.31	0.96
b x D	oats	1.35	5.03	8.22	6.37	2.31	0.96
b x E	dry beans	0.72	1.29	6.11	8.43	3.92	0.96
b x F	sugar beets	1.24	2.47	5.65	7.84	7.48	3.31
b x G	corn	0.72	2.04	7.94	8.93	6.86	1.61
b x H	alfalfa	2.03	5.3	6.13	7.48	2.93	1.61
b x I	other hay	1.45	3.62	7.19	7.79	3.19	1.96
b x J	irrigated pasture	0.87	2.37	5.04	5.5	3.6	2.04

Table 2.1.4.41 Summary – maximum crop evapotranspiration - Pathfinder to Guernsey subbasin (cont)

Low flow years (2)							
1981							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
a	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.41**	**4.48**	**6.84**	**7.46**	**6.44**	**4.73**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	2.38	4.97	7.87	5.15	--	--
a x B	spring wheat	1.94	3.94	8.07	5.74	--	--
a x C	barley	2.06	4.38	8.16	6.66	2.18	1.18
a x D	oats	2.06	4.38	8.16	6.66	2.18	1.18
a x E	dry beans	1.10	1.12	6.07	8.83	3.72	1.18
a x F	sugar beets	1.90	2.15	5.61	8.21	7.08	4.07
a x G	corn	1.10	1.78	7.88	9.35	6.50	1.97
a x H	alfalfa	3.09	4.61	6.08	7.83	2.78	1.98
a x I	other hay	2.21	3.14	7.13	8.15	3.02	2.40
a x J	irrigated pasture	1.32	2.07	5.00	5.76	3.41	2.50
1992							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
b	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.62**	**5.78**	**6.47**	**6.60**	**6.15**	**4.74**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	2.49	6.42	7.44	4.55	--	--
b x B	spring wheat	2.03	5.09	7.63	5.08	--	--
b x C	barley	2.16	5.65	7.72	5.89	2.08	1.19
b x D	oats	2.16	5.65	7.72	5.89	2.08	1.19
b x E	dry beans	1.16	1.45	5.74	7.81	3.55	1.19
b x F	sugar beets	1.99	2.77	5.31	7.26	6.77	4.08
b x G	corn	1.16	2.29	7.45	8.27	6.21	1.98
b x H	alfalfa	3.24	5.95	5.75	6.92	2.65	1.99
b x I	other hay	2.31	4.06	6.75	7.21	2.88	2.41
b x J	irrigated pasture	1.39	2.66	4.73	5.10	3.25	2.51
1985							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
c	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.28**	**5.67**	**6.64**	**7.64**	**6.67**	**3.64**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	2.31	6.29	7.64	5.27	--	--
c x B	spring wheat	1.88	4.99	7.84	5.88	--	--
c x C	barley	2.00	5.54	7.92	6.82	2.26	0.91
c x D	oats	2.00	5.54	7.92	6.82	2.26	0.91
c x E	dry beans	1.07	1.42	5.89	9.04	3.85	0.91
c x F	sugar beets	1.84	2.72	5.44	8.40	7.34	3.13
c x G	corn	1.07	2.25	7.65	9.57	6.73	1.52
c x H	alfalfa	3.00	5.83	5.90	8.01	2.87	1.53
c x I	other hay	2.14	3.98	6.93	8.35	3.13	1.85
c x J	irrigated pasture	1.28	2.61	4.85	5.90	3.53	1.93

Table 2.1.4.41 Summary – maximum crop evapotranspiration - Pathfinder to Guernsey subbasin (cont)

1989							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
d	**(inches per month) (2)**	**4.18**	**5.28**	**6.41**	**7.83**	**6.35**	**4.24**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	2.26	5.86	7.37	5.40	--	--
d x B	spring wheat	1.84	4.65	7.56	6.03	--	--
d x C	barley	1.95	5.16	7.65	6.99	2.15	1.06
d x D	oats	1.95	5.16	7.65	6.99	2.15	1.06
d x E	dry beans	1.05	1.32	5.69	9.26	3.66	1.06
d x F	sugar beets	1.80	2.53	5.26	8.61	6.99	3.65
d x G	corn	1.05	2.10	7.38	9.81	6.41	1.77
d x H	alfalfa	2.93	5.43	5.70	8.21	2.74	1.78
d x I	other hay	2.09	3.71	6.69	8.56	2.98	2.15
d x J	irrigated pasture	1.25	2.43	4.69	6.04	3.36	2.24
Normal or average flow years (2)							
1984							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
a	**(inches per month) (2)**	**3.15**	**5.46**	**6.46**	**7.37**	**6.60**	**4.01**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	1.70	6.06	7.43	5.09	--	--
a x B	spring wheat	1.39	4.80	7.62	5.67	--	--
a x C	barley	1.47	5.33	7.71	6.58	2.24	1.00
a x D	oats	1.47	5.33	7.71	6.58	2.24	1.00
a x E	dry beans	0.79	1.37	5.73	8.72	3.81	1.00
a x F	sugar beets	1.35	2.62	5.30	8.11	7.26	3.45
a x G	corn	0.79	2.17	7.44	9.23	6.66	1.67
a x H	alfalfa	2.21	5.62	5.74	7.73	2.84	1.68
a x I	other hay	1.58	3.83	6.74	8.06	3.10	2.04
a x J	irrigated pasture	0.95	2.52	4.72	5.69	3.49	2.12

Table 2.1.4.41 Summary – maximum crop evapotranspiration - Pathfinder to Guernsey subbasin (cont)

1986							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
b	**(inches per month) (2)**	**3.78**	**5.23**	**7.12**	**7.23**	**6.61**	**3.68**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	2.04	5.81	8.19	4.99	--	--
b x B	spring wheat	1.66	4.60	8.40	5.57	--	--
b x C	barley	1.77	5.11	8.49	6.46	2.24	0.92
b x D	oats	1.77	5.11	8.49	6.46	2.24	0.92
b x E	dry beans	0.95	1.31	6.32	8.55	3.81	0.92
b x F	sugar beets	1.63	2.51	5.84	7.95	7.27	3.16
b x G	corn	0.95	2.08	8.20	9.06	6.67	1.53
b x H	alfalfa	2.65	5.38	6.33	7.58	2.85	1.54
b x I	other hay	1.89	3.67	7.43	7.90	3.10	1.87
b x J	irrigated pasture	1.13	2.41	5.20	5.58	3.50	1.95
1988							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
c	**(inches per month) (2)**	**4.59**	**5.68**	**7.97**	**8.18**	**6.97**	**4.47**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	2.48	6.30	9.17	5.64	--	--
c x B	spring wheat	2.02	5.00	9.40	6.30	--	--
c x C	barley	2.14	5.55	9.51	7.30	2.36	1.12
c x D	oats	2.14	5.55	9.51	7.30	2.36	1.12
c x E	dry beans	1.15	1.42	7.07	9.68	4.02	1.12
c x F	sugar beets	1.97	2.73	6.54	9.00	7.67	3.84
c x G	corn	1.15	2.25	9.18	10.25	7.03	1.86
c x H	alfalfa	3.22	5.84	7.09	8.58	3.00	1.87
c x I	other hay	2.30	3.99	8.31	8.94	3.27	2.27
c x J	irrigated pasture	1.38	2.62	5.83	6.31	3.69	2.36
1991							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
d	**(inches per month) (2)**	**3.34**	**4.53**	**6.37**	**7.32**	**6.45**	**4.21**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	1.80	5.03	7.33	5.05	--	--
d x B	spring wheat	1.47	3.99	7.52	5.64	--	--
d x C	barley	1.56	4.43	7.60	6.54	2.19	1.05
d x D	oats	1.56	4.43	7.60	6.54	2.19	1.05
d x E	dry beans	0.84	1.13	5.65	8.66	3.72	1.05
d x F	sugar beets	1.44	2.17	5.22	8.05	7.10	3.62
d x G	corn	0.84	1.80	7.34	9.17	6.51	1.76
d x H	alfalfa	2.34	4.66	5.66	7.68	2.78	1.76
d x I	other hay	1.67	3.18	6.64	8.00	3.03	2.14
d x J	irrigated pasture	1.00	2.09	4.66	5.65	3.41	2.23

Table 2.1.4.41 Summary – maximum crop evapotranspiration - Pathfinder to Guernsey subbasin (cont)

1972							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
e	**(inches per month) (2)**	**3.79**	**5.10**	**6.91**	**7.26**	**6.32**	**4.40**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
e x A	winter wheat	2.05	5.66	7.95	5.01	--	--
e x B	spring wheat	1.67	4.49	8.15	5.59	--	--
e x C	barley	1.77	4.98	8.24	6.48	2.14	1.10
e x D	oats	1.77	4.98	8.24	6.48	2.14	1.10
e x E	dry beans	0.95	1.28	6.13	8.59	3.65	1.10
e x F	sugar beets	1.63	2.45	5.67	7.99	6.95	3.78
e x G	corn	0.95	2.02	7.96	9.10	6.38	1.83
e x H	alfalfa	2.66	5.25	6.14	7.62	2.72	1.84
e x I	other hay	1.90	3.58	7.21	7.94	2.96	2.24
e x J	irrigated pasture	1.14	2.35	5.05	5.60	3.34	2.33
1978							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
f	**(inches per month) (2)**	**3.76**	**4.44**	**6.69**	**7.26**	**6.07**	**4.61**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
f x A	winter wheat	2.03	4.93	7.69	5.01	--	--
f x B	spring wheat	1.65	3.91	7.89	5.59	--	--
f x C	barley	1.76	4.34	7.98	6.48	2.06	1.15
f x D	oats	1.76	4.34	7.98	6.48	2.06	1.15
f x E	dry beans	0.94	1.11	5.93	8.59	3.50	1.15
f x F	sugar beets	1.62	2.13	5.49	7.99	6.68	3.96
f x G	corn	0.94	1.76	7.71	9.10	6.12	1.92
f x H	alfalfa	2.64	4.57	5.95	7.62	2.62	1.93
f x I	other hay	1.88	3.12	6.98	7.94	2.85	2.34
f x J	irrigated pasture	1.13	2.05	4.89	5.60	3.21	2.44
1980							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
g	**(inches per month) (2)**	**3.94**	**4.80**	**7.21**	**7.92**	**6.28**	**4.63**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
g x A	winter wheat	2.13	5.33	8.29	5.46	--	--
g x B	spring wheat	1.73	4.22	8.51	6.10	--	--
g x C	barley	1.84	4.69	8.60	7.07	2.13	1.16
g x D	oats	1.84	4.69	8.60	7.07	2.13	1.16
g x E	dry beans	0.99	1.20	6.40	9.37	3.62	1.16
g x F	sugar beets	1.69	2.30	5.91	8.71	6.91	3.98
g x G	corn	0.99	1.91	8.31	9.92	6.34	1.93
g x H	alfalfa	2.76	4.94	6.41	8.31	2.71	1.94
g x I	other hay	1.97	3.37	7.52	8.66	2.95	2.35
g x J	irrigated pasture	1.18	2.21	5.27	6.11	3.32	2.45

Table 2.1.4.41 Summary – maximum crop evapotranspiration - Pathfinder to Guernsey subbasin (cont)

1974							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
h	**(inches per month) (2)**	**3.61**	**5.32**	**7.09**	**7.62**	**6.27**	**4.21**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
h x A	winter wheat	1.95	5.91	8.15	5.26	--	--
h x B	spring wheat	1.59	4.68	8.37	5.87	--	--
h x C	barley	1.69	5.20	8.46	6.80	2.13	1.05
h x D	oats	1.69	5.20	8.46	6.80	2.13	1.05
h x E	dry beans	0.90	1.33	6.29	9.01	3.62	1.05
h x F	sugar beets	1.55	2.55	5.81	8.38	6.90	3.62
h x G	corn	0.90	2.11	8.17	9.55	6.33	1.76
h x H	alfalfa	2.53	5.47	6.30	7.99	2.70	1.76
h x I	other hay	1.81	3.73	7.39	8.33	2.94	2.14
h x J	irrigated pasture	1.08	2.45	5.18	5.88	3.32	2.23
1976							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
i	**(inches per month) (2)**	**3.70**	**5.37**	**6.29**	**7.29**	**6.42**	**5.12**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
i x A	winter wheat	2.00	5.96	7.23	5.03	--	--
i x B	spring wheat	1.63	4.73	7.42	5.61	--	--
i x C	barley	1.73	5.25	7.50	6.51	2.18	1.28
i x D	oats	1.73	5.25	7.50	6.51	2.18	1.28
i x E	dry beans	0.93	1.34	5.58	8.62	3.70	1.28
i x F	sugar beets	1.59	2.58	5.16	8.02	7.06	4.40
i x G	corn	0.93	2.13	7.25	9.13	6.48	2.14
i x H	alfalfa	2.59	5.53	5.59	7.65	2.77	2.15
i x I	other hay	1.85	3.77	6.56	7.97	3.01	2.60
i x J	irrigated pasture	1.11	2.48	4.60	5.63	3.40	2.71
1975							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
j	**(inches per month) (2)**	**3.17**	**4.75**	**6.18**	**7.52**	**6.42**	**4.45**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
j x A	winter wheat	1.71	5.27	7.11	5.19	--	--
j x B	spring wheat	1.39	4.18	7.29	5.79	--	--
j x C	barley	1.48	4.64	7.37	6.72	2.18	1.11
j x D	oats	1.48	4.64	7.37	6.72	2.18	1.11
j x E	dry beans	0.79	1.19	5.48	8.90	3.70	1.11
j x F	sugar beets	1.36	2.28	5.07	8.27	7.06	3.83
j x G	corn	0.79	1.89	7.12	9.42	6.48	1.86
j x H	alfalfa	2.22	4.89	5.49	7.89	2.77	1.86
j x I	other hay	1.59	3.33	6.45	8.22	3.01	2.26
j x J	irrigated pasture	0.95	2.19	4.52	5.81	3.40	2.35

Table 2.1.4.41 Summary – maximum crop evapotranspiration - Pathfinder to Guernsey subbasin (cont)

1977							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
k	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.07**	**5.30**	**7.31**	**7.21**	**6.15**	**4.75**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
k x A	winter wheat	2.20	5.88	8.41	4.97	--	--
k x B	spring wheat	1.79	4.66	8.63	5.55	--	--
k x C	barley	1.90	5.18	8.72	6.44	2.08	1.19
k x D	oats	1.90	5.18	8.72	6.44	2.08	1.19
k x E	dry beans	1.02	1.33	6.48	8.53	3.55	1.19
k x F	sugar beets	1.75	2.54	5.99	7.93	6.77	4.09
k x G	corn	1.02	2.10	8.42	9.03	6.21	1.98
k x H	alfalfa	2.85	5.45	6.50	7.56	2.65	1.99
k x I	other hay	2.04	3.72	7.62	7.88	2.88	2.41
k x J	irrigated pasture	1.22	2.44	5.34	5.57	3.25	2.51
1982							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
l	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.70**	**4.70**	**5.63**	**7.35**	**6.92**	**3.93**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
l x A	winter wheat	2.00	5.22	6.47	5.07	--	--
l x B	spring wheat	1.63	4.14	6.64	5.66	--	--
l x C	barley	1.73	4.59	6.72	6.56	2.35	0.98
l x D	oats	1.73	4.59	6.72	6.56	2.35	0.98
l x E	dry beans	0.93	1.18	4.99	8.70	3.99	0.98
l x F	sugar beets	1.59	2.26	4.62	8.09	7.61	3.38
l x G	corn	0.93	1.87	6.49	9.21	6.98	1.64
l x H	alfalfa	2.59	4.84	5.01	7.71	2.98	1.65
l x I	other hay	1.85	3.30	5.87	8.03	3.25	2.00
l x J	irrigated pasture	1.11	2.17	4.12	5.67	3.66	2.08

Table 2.1.4.41 Summary – maximum crop evapotranspiration - Pathfinder to Guernsey subbasin (cont)

1979							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
m	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.96**	**4.78**	**6.71**	**7.73**	**5.87**	**5.00**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
m x A	winter wheat	2.14	5.31	7.72	5.33	--	--
m x B	spring wheat	1.74	4.21	7.92	5.95	--	--
m x C	barley	1.85	4.67	8.01	6.90	1.99	1.25
m x D	oats	1.85	4.67	8.01	6.90	1.99	1.25
m x E	dry beans	0.99	1.20	5.95	9.14	3.39	1.25
m x F	sugar beets	1.70	2.29	5.50	8.50	6.46	4.30
m x G	corn	0.99	1.90	7.73	9.69	5.92	2.09
m x H	alfalfa	2.78	4.92	5.97	8.11	2.53	2.10
m x I	other hay	1.98	3.36	7.00	8.45	2.75	2.54
m x J	irrigated pasture	1.19	2.20	4.91	5.97	3.11	2.65
1987							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
n	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.74**	**5.61**	**7.12**	**7.57**	**6.13**	**4.54**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
n x A	winter wheat	2.56	6.23	8.19	5.22	--	--
n x B	spring wheat	2.09	4.94	8.40	5.83	--	--
n x C	barley	2.21	5.48	8.49	6.76	2.08	1.14
n x D	oats	2.21	5.48	8.49	6.76	2.08	1.14
n x E	dry beans	1.19	1.40	6.32	8.96	3.54	1.14
n x F	sugar beets	2.04	2.69	5.84	8.33	6.74	3.90
n x G	corn	1.19	2.23	8.20	9.49	6.19	1.89
n x H	alfalfa	3.32	5.77	6.33	7.94	2.64	1.90
n x I	other hay	2.37	3.94	7.43	8.27	2.87	2.31
n x J	irrigated pasture	1.42	2.59	5.20	5.84	3.24	2.40

Table 2.1.4.41 Summary – maximum crop evapotranspiration - Pathfinder to Guernsey subbasin (cont)

1990							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
o	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.82**	**4.99**	**7.20**	**6.99**	**6.39**	**4.69**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
o x A	winter wheat	2.06	5.54	8.28	4.82	--	--
o x B	spring wheat	1.68	4.39	8.50	5.38	--	--
o x C	barley	1.78	4.88	8.59	6.24	2.17	1.17
o x D	oats	1.78	4.88	8.59	6.24	2.17	1.17
o x E	dry beans	0.96	1.25	6.39	8.27	3.69	1.17
o x F	sugar beets	1.64	2.40	5.90	7.69	7.03	4.03
o x G	corn	0.96	1.98	8.29	8.76	6.45	1.96
o x H	alfalfa	2.68	5.13	6.40	7.33	2.75	1.97
o x I	other hay	1.91	3.50	7.51	7.64	3.00	2.38
o x J	irrigated pasture	1.15	2.30	5.26	5.40	3.38	2.48

Notes:
(1) See Table 2.1.4.39.
(2) See Table 2.1.4.13.

2.1.4.5.2 Maximum Crop Evapotranspiration, $ET_{C(max)}$ - Guernsey to State Line Subbasin

Table 2.1.4.42 summarizes maximum evapotranspiration calculations for each crop and each month during high, low, and normal or average stream flow years of available record during 1972 through 2001 irrigation seasons in the Guernsey to State Line subbasin.

Table 2.1.4.42 Summary – maximum crop evapotranspiration - Guernsey to State Line subbasin

Row		Crop coefficients, K_{CO} (1)					
		Apr	May	Jun	Jul	Aug	Sep
A	winter wheat	0.540	1.110	1.150	0.690	--	--
B	spring wheat	0.440	0.880	1.180	0.770	--	--
C	barley	0.467	0.977	1.193	0.893	0.339	0.250
D	oats	0.467	0.977	1.193	0.893	0.339	0.250
E	dry beans	0.250	0.250	0.887	1.183	0.577	0.250
F	sugar beets	0.430	0.480	0.820	1.100	1.100	0.860
G	corn	0.250	0.397	1.152	1.253	1.009	0.417
H	alfalfa	0.701	1.029	0.889	1.049	0.558	0.501
I	other hay	0.500	0.702	1.043	1.093	0.685	0.742
J	irrigated pasture	0.300	0.461	0.731	0.772	0.772	0.772
High flow years (2)							
1986							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
a	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.94**	**5.33**	**7.09**	**7.48**	**6.74**	**3.98**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	2.13	5.92	8.15	5.16	--	--
a x B	spring wheat	1.73	4.69	8.37	5.76	--	--
a x C	barley	1.84	5.21	8.46	6.68	2.28	1.00
a x D	oats	1.84	5.21	8.46	6.68	2.28	1.00
a x E	dry beans	0.99	1.33	6.29	8.85	3.89	1.00
a x F	sugar beets	1.69	2.56	5.81	8.23	7.41	3.42
a x G	corn	0.99	2.12	8.17	9.37	6.80	1.66
a x H	alfalfa	2.76	5.48	6.30	7.85	3.76	1.99
a x I	other hay	1.97	3.74	7.39	8.18	4.62	2.95
a x J	irrigated pasture	1.18	2.46	5.18	5.77	5.20	3.07
1984							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
b	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.17**	**5.85**	**6.74**	**7.38**	**6.82**	**4.25**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	1.71	6.49	7.75	5.09	--	--
b x B	spring wheat	1.39	5.15	7.95	5.68	--	--
b x C	barley	1.48	5.72	8.04	6.59	2.31	1.06
b x D	oats	1.48	5.72	8.04	6.59	2.31	1.06
b x E	dry beans	0.79	1.46	5.98	8.73	3.94	1.06
b x F	sugar beets	1.36	2.81	5.53	8.12	7.5	3.66
b x G	corn	0.79	2.32	7.76	9.25	6.88	1.77
b x H	alfalfa	2.22	6.02	5.99	7.74	3.81	2.13
b x I	other hay	1.59	4.11	7.03	8.07	4.67	3.15
b x J	irrigated pasture	0.95	2.7	4.93	5.7	5.27	3.28

Table 2.1.4.42 Summary – maximum crop evapotranspiration - Guernsey to State Line subbasin (cont)

1985							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
c	**(inches per month) (2)**	**4.66**	**6.20**	**7.04**	**7.81**	**6.82**	**4.15**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	2.52	6.88	8.10	5.39	--	--
c x B	spring wheat	2.05	5.46	8.31	6.01	--	--
c x C	barley	2.18	6.06	8.40	6.97	2.31	1.04
c x D	oats	2.18	6.06	8.40	6.97	2.31	1.04
c x E	dry beans	1.17	1.55	6.24	9.24	3.94	1.04
c x F	sugar beets	2.00	2.98	5.77	8.59	7.50	3.57
c x G	corn	1.17	2.46	8.11	9.79	6.88	1.73
c x H	alfalfa	3.27	6.38	6.26	8.19	3.81	2.08
c x I	other hay	2.33	4.35	7.34	8.54	4.67	3.08
c x J	irrigated pasture	1.40	2.86	5.15	6.03	5.27	3.20
1973							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
d	**(inches per month) (2)**	**4.43**	**6.24**	**7.16**	**7.79**	**7.23**	**4.39**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	2.39	6.93	8.23	5.38	--	--
d x B	spring wheat	1.95	5.49	8.45	6.00	--	--
d x C	barley	2.07	6.10	8.54	6.96	2.45	1.10
d x D	oats	2.07	6.10	8.54	6.96	2.45	1.10
d x E	dry beans	1.11	1.56	6.35	9.22	4.17	1.10
d x F	sugar beets	1.90	3.00	5.87	8.57	7.95	3.78
d x G	corn	1.11	2.48	8.25	9.76	7.30	1.83
d x H	alfalfa	3.11	6.42	6.37	8.17	4.03	2.20
d x I	other hay	2.22	4.38	7.47	8.51	4.95	3.26
d x J	irrigated pasture	1.33	2.88	5.23	6.01	5.58	3.39
Low flow years (2)							
1972							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
a	**(inches per month) (2)**	**4.38**	**5.87**	**7.31**	**7.54**	**6.67**	**4.96**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	2.37	6.52	8.41	5.20	--	--
a x B	spring wheat	1.93	5.17	8.63	5.81	--	--
a x C	barley	2.05	5.73	8.72	6.73	2.26	1.24
a x D	oats	2.05	5.73	8.72	6.73	2.26	1.24
a x E	dry beans	1.10	1.47	6.48	8.92	3.85	1.24
a x F	sugar beets	1.88	2.82	5.99	8.29	7.34	4.27
a x G	corn	1.10	2.33	8.42	9.45	6.73	2.07
a x H	alfalfa	3.07	6.04	6.50	7.91	3.72	2.48
a x I	other hay	2.19	4.12	7.62	8.24	4.57	3.68
a x J	irrigated pasture	1.31	2.71	5.34	5.82	5.15	3.83

Table 2.1.4.42 Summary – maximum crop evapotranspiration - Guernsey to State Line subbasin (cont)

1989							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
b	**(inches per month) (2)**	**4.56**	**5.74**	**7.39**	**8.08**	**6.67**	**4.44**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	2.46	6.37	8.50	5.58	--	--
b x B	spring wheat	2.01	5.05	8.72	6.22	--	--
b x C	barley	2.13	5.61	8.82	7.22	2.26	1.11
b x D	oats	2.13	5.61	8.82	7.22	2.26	1.11
b x E	dry beans	1.14	1.44	6.55	9.56	3.85	1.11
b x F	sugar beets	1.96	2.76	6.06	8.89	7.34	3.82
b x G	corn	1.14	2.28	8.51	10.12	6.73	1.85
b x H	alfalfa	3.20	5.91	6.57	8.48	3.72	2.22
b x I	other hay	2.28	4.03	7.71	8.83	4.57	3.29
b x J	irrigated pasture	1.37	2.65	5.40	6.24	5.15	3.43
1990							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
c	**(inches per month) (2)**	**4.10**	**5.16**	**7.26**	**7.14**	**6.65**	**5.12**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	2.21	5.73	8.35	4.93	--	--
c x B	spring wheat	1.80	4.54	8.57	5.50	--	--
c x C	barley	1.91	5.04	8.66	6.38	2.25	1.28
c x D	oats	1.91	5.04	8.66	6.38	2.25	1.28
c x E	dry beans	1.03	1.29	6.44	8.45	3.84	1.28
c x F	sugar beets	1.76	2.48	5.95	7.85	7.32	4.40
c x G	corn	1.03	2.05	8.36	8.95	6.71	2.14
c x H	alfalfa	2.87	5.31	6.45	7.49	3.71	2.57
c x I	other hay	2.05	3.62	7.57	7.80	4.56	3.80
c x J	irrigated pasture	1.23	2.38	5.31	5.51	5.13	3.95
1992							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
d	**(inches per month) (2)**	**4.94**	**5.26**	**6.70**	**6.72**	**6.04**	**5.03**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	2.67	5.84	7.71	4.64	--	--
d x B	spring wheat	2.17	4.63	7.91	5.17	--	--
d x C	barley	2.31	5.14	7.99	6.00	2.05	1.26
d x D	oats	2.31	5.14	7.99	6.00	2.05	1.26
d x E	dry beans	1.24	1.32	5.94	7.95	3.49	1.26
d x F	sugar beets	2.12	2.52	5.49	7.39	6.64	4.33
d x G	corn	1.24	2.09	7.72	8.42	6.09	2.10
d x H	alfalfa	3.46	5.41	5.96	7.05	3.37	2.52
d x I	other hay	2.47	3.69	6.99	7.34	4.14	3.73
d x J	irrigated pasture	1.48	2.42	4.90	5.19	4.66	3.88

Table 2.1.4.42 Summary – maximum crop evapotranspiration - Guernsey to State Line subbasin (cont)

Normal or average flow years (2)							
1974							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
a	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.69**	**6.36**	**7.94**	**8.71**	**6.77**	**4.90**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	2.53	7.06	9.13	6.01	--	--
a x B	spring wheat	2.06	5.60	9.37	6.71	--	--
a x C	barley	2.19	6.21	9.47	7.78	2.30	1.23
a x D	oats	2.19	6.21	9.47	7.78	2.30	1.23
a x E	dry beans	1.17	1.59	7.04	10.30	3.91	1.23
a x F	sugar beets	2.02	3.05	6.51	9.58	7.45	4.21
a x G	corn	1.17	2.52	9.15	10.91	6.83	2.04
a x H	alfalfa	3.29	6.54	7.06	9.14	3.78	2.45
a x I	other hay	2.35	4.46	8.28	9.52	4.64	3.64
a x J	irrigated pasture	1.41	2.93	5.80	6.72	5.23	3.78
1983							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
b	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.34**	**4.72**	**6.17**	**7.41**	**7.20**	**5.03**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	1.80	5.24	7.10	5.11	--	--
b x B	spring wheat	1.47	4.15	7.28	5.71	--	--
b x C	barley	1.56	4.61	7.36	6.62	2.44	1.26
b x D	oats	1.56	4.61	7.36	6.62	2.44	1.26
b x E	dry beans	0.84	1.18	5.47	8.77	4.15	1.26
b x F	sugar beets	1.44	2.27	5.06	8.15	7.92	4.33
b x G	corn	0.84	1.87	7.11	9.28	7.26	2.10
b x H	alfalfa	2.34	4.86	5.49	7.77	4.02	2.52
b x I	other hay	1.67	3.31	6.44	8.10	4.93	3.73
b x J	irrigated pasture	1.00	2.18	4.51	5.72	5.56	3.88
1988							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
c	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.60**	**5.88**	**7.78**	**7.74**	**7.21**	**4.67**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	2.48	6.53	8.95	5.34	--	--
c x B	spring wheat	2.02	5.17	9.18	5.96	--	--
c x C	barley	2.15	5.74	9.28	6.91	2.44	1.17
c x D	oats	2.15	5.74	9.28	6.91	2.44	1.17
c x E	dry beans	1.15	1.47	6.90	9.16	4.16	1.17
c x F	sugar beets	1.98	2.82	6.38	8.51	7.93	4.02
c x G	corn	1.15	2.33	8.96	9.70	7.27	1.95
c x H	alfalfa	3.22	6.05	6.92	8.12	4.02	2.34
c x I	other hay	2.30	4.13	8.11	8.46	4.94	3.47
c x J	irrigated pasture	1.38	2.71	5.69	5.98	5.57	3.61

Table 2.1.4.42 Summary – maximum crop evapotranspiration - Guernsey to State Line subbasin (cont)

1982							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
d	**(inches per month) (2)**	**4.22**	**5.06**	**5.87**	**7.40**	**6.47**	**4.11**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	2.28	5.62	6.75	5.11	--	--
d x B	spring wheat	1.86	4.45	6.93	5.70	--	--
d x C	barley	1.97	4.94	7.00	6.61	2.19	1.03
d x D	oats	1.97	4.94	7.00	6.61	2.19	1.03
d x E	dry beans	1.06	1.27	5.21	8.75	3.73	1.03
d x F	sugar beets	1.81	2.43	4.81	8.14	7.12	3.53
d x G	corn	1.06	2.01	6.76	9.27	6.53	1.71
d x H	alfalfa	2.96	5.21	5.22	7.76	3.61	2.06
d x I	other hay	2.11	3.55	6.12	8.09	4.43	3.05
d x J	irrigated pasture	1.27	2.33	4.29	5.71	4.99	3.17
1987							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
e	**(inches per month) (2)**	**5.16**	**5.67**	**7.34**	**7.87**	**6.21**	**4.90**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
e x A	winter wheat	2.79	6.29	8.44	5.43	--	--
e x B	spring wheat	2.27	4.99	8.66	6.06	--	--
e x C	barley	2.41	5.54	8.76	7.03	2.11	1.23
e x D	oats	2.41	5.54	8.76	7.03	2.11	1.23
e x E	dry beans	1.29	1.42	6.51	9.31	3.58	1.23
e x F	sugar beets	2.22	2.72	6.02	8.66	6.83	4.21
e x G	corn	1.29	2.25	8.46	9.86	6.27	2.04
e x H	alfalfa	3.62	5.83	6.53	8.26	3.47	2.45
e x I	other hay	2.58	3.98	7.66	8.60	4.25	3.64
e x J	irrigated pasture	1.55	2.61	5.37	6.08	4.79	3.78
1979							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
f	**(inches per month) (2)**	**4.21**	**4.83**	**6.64**	**7.47**	**6.26**	**5.14**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
f x A	winter wheat	2.27	5.36	7.64	5.15	--	--
f x B	spring wheat	1.85	4.25	7.84	5.75	--	--
f x C	barley	1.97	4.72	7.92	6.67	2.12	1.29
f x D	oats	1.97	4.72	7.92	6.67	2.12	1.29
f x E	dry beans	1.05	1.21	5.89	8.84	3.61	1.29
f x F	sugar beets	1.81	2.32	5.44	8.22	6.89	4.42
f x G	corn	1.05	1.92	7.65	9.36	6.32	2.14
f x H	alfalfa	2.95	4.97	5.90	7.84	3.49	2.58
f x I	other hay	2.11	3.39	6.93	8.16	4.29	3.81
f x J	irrigated pasture	1.26	2.23	4.85	5.77	4.83	3.97

Table 2.1.4.42 Summary – maximum crop evapotranspiration - Guernsey to State Line subbasin (cont)

Row	Parameter	Apr	May	Jun	Jul	Aug	Sep
	1976						
g	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.28**	**6.11**	**7.18**	**8.00**	**6.91**	**5.10**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
g x A	winter wheat	2.31	6.78	8.26	5.52	--	--
g x B	spring wheat	1.88	5.38	8.47	6.16	--	--
g x C	barley	2.00	5.97	8.57	7.14	2.34	1.28
g x D	oats	2.00	5.97	8.57	7.14	2.34	1.28
g x E	dry beans	1.07	1.53	6.37	9.46	3.99	1.28
g x F	sugar beets	1.84	2.93	5.89	8.80	7.60	4.39
g x G	corn	1.07	2.43	8.27	10.02	6.97	2.13
g x H	alfalfa	3.00	6.29	6.38	8.39	3.86	2.56
g x I	other hay	2.14	4.29	7.49	8.74	4.73	3.78
g x J	irrigated pasture	1.28	2.82	5.25	6.18	5.33	3.94
	1980						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
h	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.17**	**4.94**	**6.78**	**7.75**	**6.60**	**4.80**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
h x A	winter wheat	2.25	5.48	7.80	5.35	--	--
h x B	spring wheat	1.83	4.35	8.00	5.97	--	--
h x C	barley	1.95	4.83	8.09	6.92	2.24	1.20
h x D	oats	1.95	4.83	8.09	6.92	2.24	1.20
h x E	dry beans	1.04	1.24	6.01	9.17	3.81	1.20
h x F	sugar beets	1.79	2.37	5.56	8.53	7.26	4.13
h x G	corn	1.04	1.96	7.81	9.71	6.66	2.00
h x H	alfalfa	2.92	5.08	6.03	8.13	3.68	2.40
h x I	other hay	2.09	3.47	7.07	8.47	4.52	3.56
h x J	irrigated pasture	1.25	2.28	4.96	5.98	5.10	3.71
	1977						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
j	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.74**	**6.10**	**7.63**	**7.73**	**5.89**	**5.10**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
j x A	winter wheat	2.56	6.77	8.77	5.33	--	--
j x B	spring wheat	2.09	5.37	9.00	5.95	--	--
j x C	barley	2.21	5.96	9.10	6.90	2.00	1.28
j x D	oats	2.21	5.96	9.10	6.90	2.00	1.28
j x E	dry beans	1.19	1.53	6.77	9.14	3.40	1.28
j x F	sugar beets	2.04	2.93	6.26	8.50	6.48	4.39
j x G	corn	1.19	2.42	8.79	9.69	5.94	2.13
j x H	alfalfa	3.32	6.28	6.78	8.11	3.29	2.56
j x I	other hay	2.37	4.28	7.96	8.45	4.03	3.78
j x J	irrigated pasture	1.42	2.81	5.58	5.97	4.55	3.94

Table 2.1.4.42 Summary – maximum crop evapotranspiration - Guernsey to State Line subbasin (cont)

1978							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
k	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.14**	**4.86**	**6.86**	**7.19**	**6.28**	**4.90**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
k x A	winter wheat	2.24	5.39	7.89	4.96	--	--
k x B	spring wheat	1.82	4.28	8.09	5.54	--	--
k x C	barley	1.93	4.75	8.18	6.42	2.13	1.23
k x D	oats	1.93	4.75	8.18	6.42	2.13	1.23
k x E	dry beans	1.04	1.22	6.08	8.51	3.62	1.23
k x F	sugar beets	1.78	2.33	5.63	7.91	6.91	4.21
k x G	corn	1.04	1.93	7.90	9.01	6.34	2.04
k x H	alfalfa	2.90	5.00	6.10	7.54	3.50	2.45
k x I	other hay	2.07	3.41	7.15	7.86	4.30	3.64
k x J	irrigated pasture	1.24	2.24	5.01	5.55	4.85	3.78
1981							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
l	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.57**	**4.72**	**7.05**	**7.23**	**6.28**	**4.80**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
l x A	winter wheat	2.47	5.24	8.11	4.99	--	--
l x B	spring wheat	2.01	4.15	8.32	5.57	--	--
l x C	barley	2.13	4.61	8.41	6.46	2.13	1.20
l x D	oats	2.13	4.61	8.41	6.46	2.13	1.20
l x E	dry beans	1.14	1.18	6.25	8.55	3.62	1.20
l x F	sugar beets	1.97	2.27	5.78	7.95	6.91	4.13
l x G	corn	1.14	1.87	8.12	9.06	6.34	2.00
l x H	alfalfa	3.20	4.86	6.27	7.58	3.50	2.40
l x I	other hay	2.29	3.31	7.35	7.90	4.30	3.56
l x J	irrigated pasture	1.37	2.18	5.15	5.58	4.85	3.71
1975							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
m	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.05**	**5.66**	**7.21**	**8.35**	**7.20**	**4.77**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
m x A	winter wheat	2.19	6.28	8.29	5.76	--	--
m x B	spring wheat	1.78	4.98	8.51	6.43	--	--
m x C	barley	1.89	5.53	8.60	7.46	2.44	1.19
m x D	oats	1.89	5.53	8.60	7.46	2.44	1.19
m x E	dry beans	1.01	1.42	6.40	9.88	4.15	1.19
m x F	sugar beets	1.74	2.72	5.91	9.19	7.92	4.10
m x G	corn	1.01	2.25	8.31	10.46	7.26	1.99
m x H	alfalfa	2.84	5.82	6.41	8.76	4.02	2.39
m x I	other hay	2.03	3.97	7.52	9.13	4.93	3.54
m x J	irrigated pasture	1.22	2.61	5.27	6.45	5.56	3.68

Table 2.1.4.42 Summary – maximum crop evapotranspiration - Guernsey to State Line subbasin (cont)

1991							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
n	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.92**	**5.22**	**6.64**	**7.47**	**6.97**	**4.86**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
n x A	winter wheat	2.12	5.79	7.64	5.15	--	--
n x B	spring wheat	1.72	4.59	7.84	5.75	--	--
n x C	barley	1.83	5.10	7.92	6.67	2.36	1.22
n x D	oats	1.83	5.10	7.92	6.67	2.36	1.22
n x E	dry beans	0.98	1.31	5.89	8.84	4.02	1.22
n x F	sugar beets	1.69	2.51	5.44	8.22	7.67	4.18
n x G	corn	0.98	2.07	7.65	9.36	7.03	2.03
n x H	alfalfa	2.75	5.37	5.90	7.84	3.89	2.43
n x I	other hay	1.96	3.66	6.93	8.16	4.77	3.61
n x J	irrigated pasture	1.18	2.41	4.85	5.77	5.38	3.75

Notes:
(1) See Table 2.1.4.39.
(2) See Table 2.1.4.18.

2.1.4.5.3 Maximum Crop Evapotranspiration, $ET_{C(max)}$ – Upper Laramie Subbasin

Table 2.1.4.43 summarizes maximum evapotranspiration calculations for each crop and each month during high, low, and normal or average stream flow years of available record during 1972 through 2001 irrigation seasons in the Upper Laramie subbasin.

Table 2.1.4.43 Summary – maximum crop evapotranspiration - Upper Laramie subbasin

Row	Crop coefficients, K_{CO} (1)						
		Apr	May	Jun	Jul	Aug	Sep
A	winter wheat	0.410	0.820	1.170	1.010	0.500	--
B	spring wheat	--	0.570	1.130	1.050	0.560	--
C	barley	0.467	0.977	1.193	0.893	0.339	0.250
D	oats	0.467	0.977	1.193	0.893	0.339	0.250
E	dry beans	0.250	0.250	0.887	1.183	0.577	0.250
F	sugar beets	0.430	0.480	0.820	1.100	1.100	0.860
G	corn	0.250	0.397	1.152	1.253	1.009	0.417
H	alfalfa	0.330	0.509	1.144	0.808	0.478	0.478
I	other hay	0.383	0.577	1.028	0.660	0.559	0.559
J	irrigated pasture	0.383	0.536	0.745	0.707	0.482	0.482
High flow years (2)							
1983							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
a	**(inches per month) (2)**	**2.21**	**3.72**	**5.14**	**6.12**	**5.36**	**4.15**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	0.91	3.05	6.01	6.18	2.68	--
a x B	spring wheat	--	2.12	5.81	6.43	3.00	--
a x C	barley	1.03	3.63	6.13	5.47	1.82	1.04
a x D	oats	1.03	3.63	6.13	5.47	1.82	1.04
a x E	dry beans	0.55	0.93	4.56	7.24	3.09	1.04
a x F	sugar beets	0.95	1.79	4.21	6.73	5.90	3.57
a x G	corn	0.55	1.48	5.92	7.67	5.41	1.73
a x H	alfalfa	0.73	1.89	5.88	4.94	2.56	1.98
a x I	other hay	0.85	2.15	5.28	4.04	3.00	2.32
a x J	irrigated pasture	0.85	1.99	3.83	4.33	2.58	2.00
1986							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
b	**(inches per month) (2)**	**3.26**	**4.36**	**6.09**	**6.05**	**5.57**	**3.42**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	1.34	3.58	7.13	6.11	2.79	--
b x B	spring wheat	--	2.49	6.88	6.35	3.12	--
b x C	barley	1.52	4.26	7.27	5.40	1.89	0.86
b x D	oats	1.52	4.26	7.27	5.40	1.89	0.86
b x E	dry beans	0.82	1.09	5.40	7.16	3.21	0.86
b x F	sugar beets	1.40	2.09	4.99	6.66	6.13	2.94
b x G	corn	0.82	1.73	7.02	7.58	5.62	1.43
b x H	alfalfa	1.08	2.22	6.97	4.89	2.66	1.63
b x I	other hay	1.25	2.52	6.26	3.99	3.11	1.91
b x J	irrigated pasture	1.25	2.34	4.54	4.28	2.68	1.65

Table 2.1.4.43 Summary – maximum crop evapotranspiration - Upper Laramie subbasin (cont)

Row	Parameter	Apr	May	Jun	Jul	Aug	Sep
	1984						
c	**Reference evapotranspiration, ET_O (inches per month) (2)**	**2.52**	**4.89**	**5.68**	**6.47**	**5.34**	**3.68**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	1.03	4.01	6.65	6.53	2.67	--
c x B	spring wheat	--	2.79	6.42	6.79	2.99	--
c x C	barley	1.18	4.78	6.78	5.78	1.81	0.92
c x D	oats	1.18	4.78	6.78	5.78	1.81	0.92
c x E	dry beans	0.63	1.22	5.04	7.65	3.08	0.92
c x F	sugar beets	1.08	2.35	4.66	7.12	5.87	3.16
c x G	corn	0.63	1.94	6.54	8.11	5.39	1.53
c x H	alfalfa	0.83	2.49	6.50	5.23	2.55	1.76
c x I	other hay	0.97	2.82	5.84	4.27	2.99	2.06
c x J	irrigated pasture	0.97	2.62	4.23	4.57	2.57	1.77
	Low flow years (2)						
	1992						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
a	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.89**	**4.73**	**5.41**	**5.76**	**5.25**	**4.08**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	1.59	3.88	6.33	5.82	2.63	--
a x B	spring wheat	--	2.70	6.11	6.05	2.94	--
a x C	barley	1.82	4.62	6.45	5.14	1.78	1.02
a x D	oats	1.82	4.62	6.45	5.14	1.78	1.02
a x E	dry beans	0.97	1.18	4.80	6.81	3.03	1.02
a x F	sugar beets	1.67	2.27	4.44	6.34	5.78	3.51
a x G	corn	0.97	1.88	6.23	7.22	5.30	1.70
a x H	alfalfa	1.28	2.41	6.19	4.65	2.51	1.95
a x I	other hay	1.49	2.73	5.56	3.80	2.93	2.28
a x J	irrigated pasture	1.49	2.54	4.03	4.07	2.53	1.97
	2001						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
b	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.25**	**4.69**	**6.22**	**6.64**	**5.70**	**4.14**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	1.33	3.85	7.28	6.71	2.85	--
b x B	spring wheat	--	2.67	7.03	6.97	3.19	--
b x C	barley	1.52	4.58	7.42	5.93	1.93	1.04
b x D	oats	1.52	4.58	7.42	5.93	1.93	1.04
b x E	dry beans	0.81	1.17	5.52	7.86	3.29	1.04
b x F	sugar beets	1.40	2.25	5.10	7.30	6.27	3.56
b x G	corn	0.81	1.86	7.17	8.32	5.75	1.73
b x H	alfalfa	1.07	2.39	7.12	5.37	2.72	1.98
b x I	other hay	1.24	2.71	6.39	4.38	3.19	2.31
b x J	irrigated pasture	1.24	2.51	4.63	4.69	2.75	2.00

Table 2.1.4.43 Summary – maximum crop evapotranspiration - Upper Laramie subbasin (cont)

1987							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
c	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.79**	**4.55**	**5.88**	**6.34**	**5.25**	**4.03**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	1.55	3.73	6.88	6.40	2.63	--
c x B	spring wheat	--	2.59	6.64	6.66	2.94	--
c x C	barley	1.77	4.45	7.01	5.66	1.78	1.01
c x D	oats	1.77	4.45	7.01	5.66	1.78	1.01
c x E	dry beans	0.95	1.14	5.22	7.50	3.03	1.01
c x F	sugar beets	1.63	2.18	4.82	6.97	5.78	3.47
c x G	corn	0.95	1.81	6.77	7.94	5.30	1.68
c x H	alfalfa	1.25	2.32	6.73	5.12	2.51	1.93
c x I	other hay	1.45	2.63	6.04	4.18	2.93	2.25
c x J	irrigated pasture	1.45	2.44	4.38	4.48	2.53	1.94
1981							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
d	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.80**	**3.75**	**5.94**	**6.23**	**5.28**	**4.04**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	1.56	3.08	6.95	6.29	2.64	--
d x B	spring wheat	--	2.14	6.71	6.54	2.96	--
d x C	barley	1.77	3.66	7.09	5.56	1.79	1.01
d x D	oats	1.77	3.66	7.09	5.56	1.79	1.01
d x E	dry beans	0.95	0.94	5.27	7.37	3.05	1.01
d x F	sugar beets	1.63	1.80	4.87	6.85	5.81	3.47
d x G	corn	0.95	1.49	6.84	7.81	5.33	1.68
d x H	alfalfa	1.25	1.91	6.80	5.03	2.52	1.93
d x I	other hay	1.46	2.16	6.11	4.11	2.95	2.26
d x J	irrigated pasture	1.46	2.01	4.43	4.40	2.54	1.95
1977							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
e	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.47**	**4.84**	**6.38**	**6.41**	**5.22**	**4.10**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
e x A	winter wheat	1.42	3.97	7.46	6.47	2.61	--
e x B	spring wheat	--	2.76	7.21	6.73	2.92	--
e x C	barley	1.62	4.73	7.61	5.72	1.77	1.03
e x D	oats	1.62	4.73	7.61	5.72	1.77	1.03
e x E	dry beans	0.87	1.21	5.66	7.58	3.01	1.03
e x F	sugar beets	1.49	2.32	5.23	7.05	5.74	3.53
e x G	corn	0.87	1.92	7.35	8.03	5.27	1.71
e x H	alfalfa	1.15	2.46	7.30	5.18	2.50	1.96
e x I	other hay	1.33	2.79	6.56	4.23	2.92	2.29
e x J	irrigated pasture	1.33	2.59	4.75	4.53	2.52	1.98

Table 2.1.4.43 Summary – maximum crop evapotranspiration - Upper Laramie subbasin (cont)

1989							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
f	**Reference evapotranspiration, ET_o (inches per month) (2)**	**3.56**	**4.74**	**5.71**	**6.76**	**5.53**	**3.95**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
f x A	winter wheat	1.46	3.89	6.68	6.83	2.77	--
f x B	spring wheat	--	2.70	6.45	7.10	3.10	--
f x C	barley	1.66	4.63	6.81	6.04	1.87	0.99
f x D	oats	1.66	4.63	6.81	6.04	1.87	0.99
f x E	dry beans	0.89	1.19	5.06	8.00	3.19	0.99
f x F	sugar beets	1.53	2.28	4.68	7.44	6.08	3.40
f x G	corn	0.89	1.88	6.58	8.47	5.58	1.65
f x H	alfalfa	1.17	2.41	6.53	5.46	2.64	1.89
f x I	other hay	1.36	2.73	5.87	4.46	3.09	2.21
f x J	irrigated pasture	1.36	2.54	4.25	4.78	2.67	1.90
Normal or average flow years (2)							
1997							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
a	**Reference evapotranspiration, ET_o (inches per month) (2)**	**2.62**	**4.54**	**5.69**	**6.50**	**5.42**	**3.71**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	1.07	3.72	6.66	6.57	2.71	--
a x B	spring wheat	--	2.59	6.43	6.83	3.04	--
a x C	barley	1.22	4.44	6.79	5.80	1.84	0.93
a x D	oats	1.22	4.44	6.79	5.80	1.84	0.93
a x E	dry beans	0.66	1.14	5.05	7.69	3.13	0.93
a x F	sugar beets	1.13	2.18	4.67	7.15	5.96	3.19
a x G	corn	0.66	1.80	6.55	8.14	5.47	1.55
a x H	alfalfa	0.86	2.31	6.51	5.25	2.59	1.77
a x I	other hay	1.00	2.62	5.85	4.29	3.03	2.07
a x J	irrigated pasture	1.00	2.43	4.24	4.60	2.61	1.79
1973							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
b	**Reference evapotranspiration, ET_o (inches per month) (2)**	**2.38**	**4.41**	**5.85**	**5.99**	**5.72**	**3.52**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	0.98	3.62	6.84	6.05	2.86	--
b x B	spring wheat	--	2.51	6.61	6.29	3.20	--
b x C	barley	1.11	4.31	6.98	5.35	1.94	0.88
b x D	oats	1.11	4.31	6.98	5.35	1.94	0.88
b x E	dry beans	0.60	1.10	5.19	7.09	3.30	0.88
b x F	sugar beets	1.02	2.12	4.80	6.59	6.29	3.03
b x G	corn	0.60	1.75	6.74	7.51	5.77	1.47
b x H	alfalfa	0.79	2.24	6.69	4.84	2.73	1.68
b x I	other hay	0.91	2.54	6.01	3.95	3.20	1.97
b x J	irrigated pasture	0.91	2.36	4.36	4.23	2.76	1.70

Table 2.1.4.43 Summary – maximum crop evapotranspiration - Upper Laramie subbasin (cont)

1979							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
c	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.22**	**4.18**	**5.77**	**6.56**	**5.18**	**4.27**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	1.32	3.43	6.75	6.63	2.59	--
c x B	spring wheat	--	2.38	6.52	6.89	2.90	--
c x C	barley	1.50	4.08	6.88	5.86	1.76	1.07
c x D	oats	1.50	4.08	6.88	5.86	1.76	1.07
c x E	dry beans	0.81	1.05	5.12	7.76	2.99	1.07
c x F	sugar beets	1.38	2.01	4.73	7.22	5.70	3.67
c x G	corn	0.81	1.66	6.65	8.22	5.23	1.78
c x H	alfalfa	1.06	2.13	6.60	5.30	2.48	2.04
c x I	other hay	1.23	2.41	5.93	4.33	2.90	2.39
c x J	irrigated pasture	1.23	2.24	4.30	4.64	2.50	2.06
1996							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
d	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.14**	**4.45**	**6.03**	**6.34**	**5.57**	**3.59**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	1.29	3.65	7.06	6.40	2.79	--
d x B	spring wheat	--	2.54	6.81	6.66	3.12	--
d x C	barley	1.47	4.35	7.19	5.66	1.89	0.90
d x D	oats	1.47	4.35	7.19	5.66	1.89	0.90
d x E	dry beans	0.79	1.11	5.35	7.50	3.21	0.90
d x F	sugar beets	1.35	2.14	4.94	6.97	6.13	3.09
d x G	corn	0.79	1.77	6.95	7.94	5.62	1.50
d x H	alfalfa	1.04	2.27	6.90	5.12	2.66	1.72
d x I	other hay	1.20	2.57	6.20	4.18	3.11	2.01
d x J	irrigated pasture	1.20	2.39	4.49	4.48	2.68	1.73
1982							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
e	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.09**	**4.07**	**5.33**	**6.23**	**5.53**	**3.41**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
e x A	winter wheat	1.27	3.34	6.24	6.29	2.77	--
e x B	spring wheat	--	2.32	6.02	6.54	3.10	--
e x C	barley	1.44	3.98	6.36	5.56	1.87	0.85
e x D	oats	1.44	3.98	6.36	5.56	1.87	0.85
e x E	dry beans	0.77	1.02	4.73	7.37	3.19	0.85
e x F	sugar beets	1.33	1.95	4.37	6.85	6.08	2.93
e x G	corn	0.77	1.62	6.14	7.81	5.58	1.42
e x H	alfalfa	1.02	2.07	6.10	5.03	2.64	1.63
e x I	other hay	1.18	2.35	5.48	4.11	3.09	1.91
e x J	irrigated pasture	1.18	2.18	3.97	4.40	2.67	1.64

Table 2.1.4.43 Summary – maximum crop evapotranspiration - Upper Laramie subbasin (cont)

1995							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
f	**Reference evapotranspiration, ET_O (inches per month) (2)**	**2.92**	**3.48**	**5.16**	**5.89**	**6.08**	**3.52**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
f x A	winter wheat	1.20	2.85	6.04	5.95	3.04	--
f x B	spring wheat	--	1.98	5.83	6.18	3.40	--
f x C	barley	1.36	3.40	6.16	5.26	2.06	0.88
f x D	oats	1.36	3.40	6.16	5.26	2.06	0.88
f x E	dry beans	0.73	0.87	4.58	6.97	3.51	0.88
f x F	sugar beets	1.26	1.67	4.23	6.48	6.69	3.03
f x G	corn	0.73	1.38	5.94	7.38	6.13	1.47
f x H	alfalfa	0.96	1.77	5.90	4.76	2.91	1.68
f x I	other hay	1.12	2.01	5.30	3.89	3.40	1.97
f x J	irrigated pasture	1.12	1.87	3.84	4.16	2.93	1.70
1978							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
g	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.29**	**4.05**	**5.91**	**6.70**	**5.57**	**4.08**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
g x A	winter wheat	1.35	3.32	6.91	6.77	2.79	--
g x B	spring wheat	--	2.31	6.68	7.04	3.12	--
g x C	barley	1.54	3.96	7.05	5.98	1.89	1.02
g x D	oats	1.54	3.96	7.05	5.98	1.89	1.02
g x E	dry beans	0.82	1.01	5.24	7.93	3.21	1.02
g x F	sugar beets	1.41	1.94	4.85	7.37	6.13	3.51
g x G	corn	0.82	1.61	6.81	8.40	5.62	1.70
g x H	alfalfa	1.09	2.06	6.76	5.41	2.66	1.95
g x I	other hay	1.26	2.34	6.08	4.42	3.11	2.28
g x J	irrigated pasture	1.26	2.17	4.40	4.74	2.68	1.97
1980							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
h	**Reference evapotranspiration, ET_O (inches per month) (2)**	**2.97**	**4.22**	**6.37**	**6.58**	**5.60**	**3.98**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
h x A	winter wheat	1.22	3.46	7.45	6.65	2.80	--
h x B	spring wheat	--	2.41	7.20	6.91	3.14	--
h x C	barley	1.39	4.12	7.60	5.88	1.90	1.00
h x D	oats	1.39	4.12	7.60	5.88	1.90	1.00
h x E	dry beans	0.74	1.06	5.65	7.78	3.23	1.00
h x F	sugar beets	1.28	2.03	5.22	7.24	6.16	3.42
h x G	corn	0.74	1.68	7.34	8.24	5.65	1.66
h x H	alfalfa	0.98	2.15	7.29	5.32	2.68	1.90
h x I	other hay	1.14	2.43	6.55	4.34	3.13	2.22
h x J	irrigated pasture	1.14	2.26	4.75	4.65	2.70	1.92

Table 2.1.4.43 Summary – maximum crop evapotranspiration - Upper Laramie subbasin (cont)

1974							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
i	**(inches per month) (2)**	**3.00**	**5.00**	**6.24**	**6.58**	**5.74**	**3.78**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
i x A	winter wheat	1.23	4.10	7.30	6.65	2.87	--
i x B	spring wheat	--	2.85	7.05	6.91	3.21	--
i x C	barley	1.40	4.89	7.44	5.88	1.95	0.95
i x D	oats	1.40	4.89	7.44	5.88	1.95	0.95
i x E	dry beans	0.75	1.25	5.53	7.78	3.31	0.95
i x F	sugar beets	1.29	2.40	5.12	7.24	6.31	3.25
i x G	corn	0.75	1.99	7.19	8.24	5.79	1.58
i x H	alfalfa	0.99	2.55	7.14	5.32	2.74	1.81
i x I	other hay	1.15	2.89	6.41	4.34	3.21	2.11
i x J	irrigated pasture	1.15	2.68	4.65	4.65	2.77	1.82
1999							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
j	**(inches per month) (2)**	**2.65**	**4.15**	**5.49**	**6.18**	**5.24**	**3.57**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
j x A	winter wheat	1.09	3.40	6.42	6.24	2.62	--
j x B	spring wheat	--	2.37	6.20	6.49	2.93	--
j x C	barley	1.24	4.05	6.55	5.52	1.78	0.89
j x D	oats	1.24	4.05	6.55	5.52	1.78	0.89
j x E	dry beans	0.66	1.04	4.87	7.31	3.02	0.89
j x F	sugar beets	1.14	1.99	4.50	6.80	5.76	3.07
j x G	corn	0.66	1.65	6.32	7.74	5.29	1.49
j x H	alfalfa	0.87	2.11	6.28	4.99	2.50	1.71
j x I	other hay	1.01	2.39	5.64	4.08	2.93	2.00
j x J	irrigated pasture	1.01	2.22	4.09	4.37	2.53	1.72
1993							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
k	**(inches per month) (2)**	**2.99**	**4.60**	**5.20**	**6.01**	**5.19**	**3.59**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
k x A	winter wheat	1.23	3.77	6.08	6.07	2.60	--
k x B	spring wheat	--	2.62	5.88	6.31	2.91	--
k x C	barley	1.40	4.49	6.20	5.37	1.76	0.90
k x D	oats	1.40	4.49	6.20	5.37	1.76	0.90
k x E	dry beans	0.75	1.15	4.61	7.11	2.99	0.90
k x F	sugar beets	1.29	2.21	4.26	6.61	5.71	3.09
k x G	corn	0.75	1.83	5.99	7.53	5.24	1.50
k x H	alfalfa	0.99	2.34	5.95	4.86	2.48	1.72
k x I	other hay	1.15	2.65	5.35	3.97	2.90	2.01
k x J	irrigated pasture	1.15	2.47	3.87	4.25	2.50	1.73

Table 2.1.4.43 Summary – maximum crop evapotranspiration - Upper Laramie subbasin (cont)

1985							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
l	**(inches per month) (2)**	**3.55**	**4.80**	**5.70**	**6.15**	**5.92**	**3.44**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
l x A	winter wheat	1.46	3.94	6.67	6.21	2.96	--
l x B	spring wheat	--	2.74	6.44	6.46	3.32	--
l x C	barley	1.66	4.69	6.80	5.49	2.01	0.86
l x D	oats	1.66	4.69	6.80	5.49	2.01	0.86
l x E	dry beans	0.89	1.20	5.06	7.28	3.42	0.86
l x F	sugar beets	1.53	2.30	4.67	6.77	6.51	2.96
l x G	corn	0.89	1.91	6.57	7.71	5.97	1.43
l x H	alfalfa	1.17	2.44	6.52	4.97	2.83	1.64
l x I	other hay	1.36	2.77	5.86	4.06	3.31	1.92
l x J	irrigated pasture	1.36	2.57	4.25	4.35	2.85	1.66
1988							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
m	**(inches per month) (2)**	**3.63**	**4.64**	**6.44**	**6.74**	**5.91**	**3.85**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
m x A	winter wheat	1.49	3.80	7.53	6.81	2.96	--
m x B	spring wheat	--	2.64	7.28	7.08	3.31	--
m x C	barley	1.70	4.53	7.68	6.02	2.00	0.96
m x D	oats	1.70	4.53	7.68	6.02	2.00	0.96
m x E	dry beans	0.91	1.16	5.71	7.97	3.41	0.96
m x F	sugar beets	1.56	2.23	5.28	7.41	6.50	3.31
m x G	corn	0.91	1.84	7.42	8.45	5.96	1.61
m x H	alfalfa	1.20	2.36	7.37	5.45	2.82	1.84
m x I	other hay	1.39	2.68	6.62	4.45	3.30	2.15
m x J	irrigated pasture	1.39	2.49	4.80	4.77	2.85	1.86
1975							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
n	**(inches per month) (2)**	**2.84**	**4.06**	**5.58**	**6.50**	**5.85**	**3.96**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
n x A	winter wheat	1.16	3.33	6.53	6.57	2.93	--
n x B	spring wheat	--	2.31	6.31	6.83	3.28	--
n x C	barley	1.33	3.97	6.66	5.80	1.98	0.99
n x D	oats	1.33	3.97	6.66	5.80	1.98	0.99
n x E	dry beans	0.71	1.02	4.95	7.69	3.38	0.99
n x F	sugar beets	1.22	1.95	4.58	7.15	6.44	3.41
n x G	corn	0.71	1.61	6.43	8.14	5.90	1.65
n x H	alfalfa	0.94	2.07	6.38	5.25	2.80	1.89
n x I	other hay	1.09	2.34	5.74	4.29	3.27	2.21
n x J	irrigated pasture	1.09	2.18	4.16	4.60	2.82	1.91

Table 2.1.4.43 Summary – maximum crop evapotranspiration - Upper Laramie subbasin (cont)

1998							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
o	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.22**	**4.90**	**5.00**	**6.13**	**5.64**	**4.14**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
o x A	winter wheat	1.32	4.02	5.85	6.19	2.82	--
o x B	spring wheat	--	2.79	5.65	6.44	3.16	--
o x C	barley	1.50	4.79	5.97	5.47	1.91	1.04
o x D	oats	1.50	4.79	5.97	5.47	1.91	1.04
o x E	dry beans	0.81	1.23	4.44	7.25	3.25	1.04
o x F	sugar beets	1.38	2.35	4.10	6.74	6.20	3.56
o x G	corn	0.81	1.95	5.76	7.68	5.69	1.73
o x H	alfalfa	1.06	2.49	5.72	4.95	2.70	1.98
o x I	other hay	1.23	2.83	5.14	4.05	3.15	2.31
o x J	irrigated pasture	1.23	2.63	3.73	4.33	2.72	2.00
1972							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
p	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.40**	**4.62**	**5.87**	**6.34**	**5.59**	**3.79**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
p x A	winter wheat	1.39	3.79	6.87	6.40	2.80	--
p x B	spring wheat	--	2.63	6.63	6.66	3.13	--
p x C	barley	1.59	4.51	7.00	5.66	1.90	0.95
p x D	oats	1.59	4.51	7.00	5.66	1.90	0.95
p x E	dry beans	0.85	1.16	5.21	7.50	3.23	0.95
p x F	sugar beets	1.46	2.22	4.81	6.97	6.15	3.26
p x G	corn	0.85	1.83	6.76	7.94	5.64	1.58
p x H	alfalfa	1.12	2.35	6.72	5.12	2.67	1.81
p x I	other hay	1.30	2.67	6.03	4.18	3.12	2.12
p x J	irrigated pasture	1.30	2.48	4.37	4.48	2.69	1.83
1976							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
q	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.32**	**4.72**	**6.01**	**6.91**	**5.79**	**4.08**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
q x A	winter wheat	1.36	3.87	7.03	6.98	2.90	--
q x B	spring wheat	--	2.69	6.79	7.26	3.24	--
q x C	barley	1.55	4.61	7.17	6.17	1.96	1.02
q x D	oats	1.55	4.61	7.17	6.17	1.96	1.02
q x E	dry beans	0.83	1.18	5.33	8.17	3.34	1.02
q x F	sugar beets	1.43	2.27	4.93	7.60	6.37	3.51
q x G	corn	0.83	1.87	6.92	8.66	5.84	1.70
q x H	alfalfa	1.10	2.40	6.88	5.58	2.77	1.95
q x I	other hay	1.27	2.72	6.18	4.56	3.24	2.28
q x J	irrigated pasture	1.27	2.53	4.48	4.89	2.79	1.97

Table 2.1.4.43 Summary – maximum crop evapotranspiration - Upper Laramie subbasin (cont)

1990							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
r	**(inches per month) (2)**	**3.40**	**4.46**	**6.34**	**5.85**	**5.57**	**3.99**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
r x A	winter wheat	1.39	3.66	7.42	5.91	2.79	--
r x B	spring wheat	--	2.54	7.16	6.14	3.12	--
r x C	barley	1.59	4.36	7.56	5.22	1.89	1.00
r x D	oats	1.59	4.36	7.56	5.22	1.89	1.00
r x E	dry beans	0.85	1.12	5.62	6.92	3.21	1.00
r x F	sugar beets	1.46	2.14	5.20	6.44	6.13	3.43
r x G	corn	0.85	1.77	7.30	7.33	5.62	1.66
r x H	alfalfa	1.12	2.27	7.25	4.73	2.66	1.91
r x I	other hay	1.30	2.57	6.52	3.86	3.11	2.23
r x J	irrigated pasture	1.30	2.39	4.72	4.14	2.68	1.92
2000							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
s	**(inches per month) (2)**	**3.63**	**4.91**	**5.89**	**6.67**	**5.85**	**3.97**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
s x A	winter wheat	1.49	4.03	6.89	6.74	2.93	--
s x B	spring wheat	--	2.80	6.66	7.00	3.28	--
s x C	barley	1.70	4.80	7.03	5.96	1.98	0.99
s x D	oats	1.70	4.80	7.03	5.96	1.98	0.99
s x E	dry beans	0.91	1.23	5.22	7.89	3.38	0.99
s x F	sugar beets	1.56	2.36	4.83	7.34	6.44	3.41
s x G	corn	0.91	1.95	6.79	8.36	5.90	1.66
s x H	alfalfa	1.20	2.50	6.74	5.39	2.80	1.90
s x I	other hay	1.39	2.83	6.05	4.40	3.27	2.22
s x J	irrigated pasture	1.39	2.63	4.39	4.72	2.82	1.91
1991							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
t	**(inches per month) (2)**	**3.04**	**4.61**	**5.76**	**6.05**	**5.38**	**3.85**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
t x A	winter wheat	1.25	3.78	6.74	6.11	2.69	--
t x B	spring wheat	--	2.63	6.51	6.35	3.01	--
t x C	barley	1.42	4.50	6.87	5.40	1.82	0.96
t x D	oats	1.42	4.50	6.87	5.40	1.82	0.96
t x E	dry beans	0.76	1.15	5.11	7.16	3.10	0.96
t x F	sugar beets	1.31	2.21	4.72	6.66	5.92	3.31
t x G	corn	0.76	1.83	6.64	7.58	5.43	1.61
t x H	alfalfa	1.00	2.35	6.59	4.89	2.57	1.84
t x I	other hay	1.16	2.66	5.92	3.99	3.01	2.15
t x J	irrigated pasture	1.16	2.47	4.29	4.28	2.59	1.86

Table 2.1.4.43 Summary – maximum crop evapotranspiration - Upper Laramie subbasin (cont)

1994							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
u	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.21**	**4.98**	**6.37**	**6.37**	**5.72**	**4.07**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
u x A	winter wheat	1.32	4.08	7.45	6.43	2.86	--
u x B	spring wheat	--	2.84	7.20	6.69	3.20	--
u x C	barley	1.50	4.87	7.60	5.69	1.94	1.02
u x D	oats	1.50	4.87	7.60	5.69	1.94	1.02
u x E	dry beans	0.80	1.25	5.65	7.54	3.30	1.02
u x F	sugar beets	1.38	2.39	5.22	7.01	6.29	3.50
u x G	corn	0.80	1.98	7.34	7.98	5.77	1.70
u x H	alfalfa	1.06	2.53	7.29	5.15	2.73	1.95
u x I	other hay	1.23	2.87	6.55	4.20	3.20	2.28
u x J	irrigated pasture	1.23	2.67	4.75	4.50	2.76	1.96

Notes:
(1) See Table 2.1.4.39.
(2) See Table 2.1.4.23.

2.1.4.5.4 Maximum Crop Evapotranspiration, $ET_{C(max)}$ – Lower Laramie Subbasin

Table 2.1.4.44 summarizes maximum evapotranspiration calculations for each crop and each month during the high, low, and normal or average stream flow years of available record during 1972 through 2001 irrigation seasons in the Lower Laramie subbasin.

Table 2.1.4.44 Summary – maximum crop evapotranspiration - Lower Laramie subbasin

Row	Crop coefficients, K_{CO} (1)						
		Apr	May	Jun	Jul	Aug	Sep
A	winter wheat	0.540	1.110	1.150	0.690	--	--
B	spring wheat	0.440	0.880	1.180	0.770	--	--
C	barley	0.467	0.977	1.193	0.893	0.339	0.250
D	oats	0.467	0.977	1.193	0.893	0.339	0.250
E	dry beans	0.250	0.250	0.887	1.183	0.577	0.250
F	sugar beets	0.430	0.480	0.820	1.100	1.100	0.860
G	corn	0.250	0.397	1.152	1.253	1.009	0.417
H	alfalfa	0.701	1.029	0.889	1.049	0.558	0.501
I	other hay	0.500	0.702	1.043	1.093	0.685	0.742
J	irrigated pasture	0.300	0.461	0.731	0.772	0.772	0.772
High flow years (2)							
1983							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
a	**(inches per month) (2)**	**3.29**	**4.85**	**6.22**	**7.69**	**7.28**	**5.21**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	1.78	5.38	7.15	5.31	--	--
a x B	spring wheat	1.45	4.27	7.34	5.92	--	--
a x C	barley	1.54	4.74	7.42	6.87	2.47	1.30
a x D	oats	1.54	4.74	7.42	6.87	2.47	1.30
a x E	dry beans	0.82	1.21	5.52	9.10	4.20	1.30
a x F	sugar beets	1.41	2.33	5.1	8.46	8.01	4.48
a x G	corn	0.82	1.93	7.17	9.64	7.35	2.17
a x H	alfalfa	2.31	4.99	5.53	8.07	4.06	2.61
a x I	other hay	1.65	3.4	6.49	8.41	4.99	3.87
a x J	irrigated pasture	0.99	2.24	4.55	5.94	5.62	4.02
1984							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
b	**(inches per month) (2)**	**3.40**	**6.15**	**7.20**	**7.95**	**6.70**	**4.38**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	1.84	6.83	8.28	5.49	--	--
b x B	spring wheat	1.50	5.41	8.5	6.12	--	--
b x C	barley	1.59	6.01	8.59	7.1	2.27	1.1
b x D	oats	1.59	6.01	8.59	7.1	2.27	1.1
b x E	dry beans	0.85	1.54	6.39	9.4	3.87	1.1
b x F	sugar beets	1.46	2.95	5.9	8.75	7.37	3.77
b x G	corn	0.85	2.44	8.29	9.96	6.76	1.83
b x H	alfalfa	2.38	6.33	6.4	8.34	3.74	2.19
b x I	other hay	1.70	4.32	7.51	8.69	4.59	3.25
b x J	irrigated pasture	1.02	2.84	5.26	6.14	5.17	3.38

Table 2.1.4.44 Summary – maximum crop evapotranspiration - Lower Laramie subbasin (cont)

Low flow years (2)							
1990							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
a	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.27**	**5.42**	**7.50**	**7.08**	**6.46**	**4.96**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	2.31	6.02	8.63	4.89	--	--
a x B	spring wheat	1.88	4.77	8.85	5.45	--	--
a x C	barley	1.99	5.30	8.95	6.32	2.19	1.24
a x D	oats	1.99	5.30	8.95	6.32	2.19	1.24
a x E	dry beans	1.07	1.36	6.65	8.38	3.73	1.24
a x F	sugar beets	1.84	2.60	6.15	7.79	7.11	4.27
a x G	corn	1.07	2.15	8.64	8.87	6.52	2.07
a x H	alfalfa	2.99	5.58	6.67	7.43	3.60	2.48
a x I	other hay	2.14	3.80	7.82	7.74	4.43	3.68
a x J	irrigated pasture	1.28	2.50	5.48	5.47	4.99	3.83
1994							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
b	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.52**	**6.31**	**7.57**	**7.28**	**7.00**	**4.99**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	2.44	7.00	8.71	5.02	--	--
b x B	spring wheat	1.99	5.55	8.93	5.61	--	--
b x C	barley	2.11	6.16	9.03	6.50	2.37	1.25
b x D	oats	2.11	6.16	9.03	6.50	2.37	1.25
b x E	dry beans	1.13	1.58	6.71	8.61	4.04	1.25
b x F	sugar beets	1.94	3.03	6.21	8.01	7.70	4.29
b x G	corn	1.13	2.51	8.72	9.12	7.06	2.08
b x H	alfalfa	3.17	6.49	6.73	7.64	3.91	2.50
b x I	other hay	2.26	4.43	7.90	7.96	4.80	3.70
b x J	irrigated pasture	1.36	2.91	5.53	5.62	5.40	3.85

Table 2.1.4.44 Summary – maximum crop evapotranspiration - Lower Laramie subbasin (cont)

1992							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
c	**(inches per month) (2)**	**4.95**	**6.02**	**6.64**	**6.72**	**6.31**	**5.10**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	2.67	6.68	7.64	4.64	--	--
c x B	spring wheat	2.18	5.30	7.84	5.17	--	--
c x C	barley	2.31	5.88	7.92	6.00	2.14	1.28
c x D	oats	2.31	5.88	7.92	6.00	2.14	1.28
c x E	dry beans	1.24	1.51	5.89	7.95	3.64	1.28
c x F	sugar beets	2.13	2.89	5.44	7.39	6.94	4.39
c x G	corn	1.24	2.39	7.65	8.42	6.37	2.13
c x H	alfalfa	3.47	6.19	5.90	7.05	3.52	2.56
c x I	other hay	2.48	4.23	6.93	7.34	4.32	3.78
c x J	irrigated pasture	1.49	2.78	4.85	5.19	4.87	3.94
1989							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
d	**(inches per month) (2)**	**4.57**	**5.85**	**6.90**	**8.12**	**6.72**	**4.66**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	2.47	6.49	7.94	5.60	--	--
d x B	spring wheat	2.01	5.15	8.14	6.25	--	--
d x C	barley	2.13	5.72	8.23	7.25	2.28	1.17
d x D	oats	2.13	5.72	8.23	7.25	2.28	1.17
d x E	dry beans	1.14	1.46	6.12	9.61	3.88	1.17
d x F	sugar beets	1.97	2.81	5.66	8.93	7.39	4.01
d x G	corn	1.14	2.32	7.95	10.17	6.78	1.94
d x H	alfalfa	3.20	6.02	6.13	8.52	3.75	2.33
d x I	other hay	2.29	4.11	7.20	8.88	4.60	3.46
d x J	irrigated pasture	1.37	2.70	5.04	6.27	5.19	3.60

Table 2.1.4.44 Summary – maximum crop evapotranspiration - Lower Laramie subbasin (cont)

Normal or average flow years (2)							
1995							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
a	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.86**	**4.11**	**6.04**	**7.32**	**6.88**	**4.39**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	2.08	4.56	6.95	5.05	--	--
a x B	spring wheat	1.70	3.62	7.13	5.64	--	--
a x C	barley	1.80	4.02	7.21	6.54	2.33	1.10
a x D	oats	1.80	4.02	7.21	6.54	2.33	1.10
a x E	dry beans	0.97	1.03	5.36	8.66	3.97	1.10
a x F	sugar beets	1.66	1.97	4.95	8.05	7.57	3.78
a x G	corn	0.97	1.63	6.96	9.17	6.94	1.83
a x H	alfalfa	2.71	4.23	5.37	7.68	3.84	2.20
a x I	other hay	1.93	2.89	6.30	8.00	4.71	3.26
a x J	irrigated pasture	1.16	1.89	4.42	5.65	5.31	3.39
1986							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
b	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.19**	**5.82**	**7.34**	**7.68**	**6.86**	**4.05**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	2.26	6.46	8.44	5.30	--	--
b x B	spring wheat	1.84	5.12	8.66	5.91	--	--
b x C	barley	1.96	5.69	8.76	6.86	2.33	1.01
b x D	oats	1.96	5.69	8.76	6.86	2.33	1.01
b x E	dry beans	1.05	1.46	6.51	9.09	3.96	1.01
b x F	sugar beets	1.80	2.79	6.02	8.45	7.55	3.48
b x G	corn	1.05	2.31	8.46	9.62	6.92	1.69
b x H	alfalfa	2.94	5.99	6.53	8.06	3.83	2.03
b x I	other hay	2.10	4.09	7.66	8.39	4.70	3.01
b x J	irrigated pasture	1.26	2.68	5.37	5.93	5.30	3.13

Table 2.1.4.44 Summary – maximum crop evapotranspiration - Lower Laramie subbasin (cont)

1980							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
c	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.20**	**5.33**	**8.00**	**8.27**	**6.50**	**4.94**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	2.27	5.92	9.20	5.71	--	--
c x B	spring wheat	1.85	4.69	9.44	6.37	--	--
c x C	barley	1.96	5.21	9.54	7.39	2.20	1.24
c x D	oats	1.96	5.21	9.54	7.39	2.20	1.24
c x E	dry beans	1.05	1.33	7.10	9.78	3.75	1.24
c x F	sugar beets	1.81	2.56	6.56	9.10	7.15	4.25
c x G	corn	1.05	2.12	9.22	10.36	6.56	2.06
c x H	alfalfa	2.94	5.48	7.11	8.68	3.63	2.47
c x I	other hay	2.10	3.74	8.34	9.04	4.45	3.67
c x J	irrigated pasture	1.26	2.46	5.85	6.38	5.02	3.81
1999							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
d	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.56**	**5.17**	**6.45**	**7.74**	**6.67**	**4.32**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	1.92	5.74	7.42	5.34	--	--
d x B	spring wheat	1.57	4.55	7.61	5.96	--	--
d x C	barley	1.66	5.05	7.69	6.91	2.26	1.08
d x D	oats	1.66	5.05	7.69	6.91	2.26	1.08
d x E	dry beans	0.89	1.29	5.72	9.16	3.85	1.08
d x F	sugar beets	1.53	2.48	5.29	8.51	7.34	3.72
d x G	corn	0.89	2.05	7.43	9.70	6.73	1.80
d x H	alfalfa	2.50	5.32	5.73	8.12	3.72	2.16
d x I	other hay	1.78	3.63	6.73	8.46	4.57	3.21
d x J	irrigated pasture	1.07	2.38	4.71	5.98	5.15	3.34
1991							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
e	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.92**	**5.15**	**6.48**	**7.32**	**6.45**	**4.65**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
e x A	winter wheat	2.12	5.72	7.45	5.05	--	--
e x B	spring wheat	1.72	4.53	7.65	5.64	--	--
e x C	barley	1.83	5.03	7.73	6.54	2.19	1.16
e x D	oats	1.83	5.03	7.73	6.54	2.19	1.16
e x E	dry beans	0.98	1.29	5.75	8.66	3.72	1.16
e x F	sugar beets	1.69	2.47	5.31	8.05	7.10	4.00
e x G	corn	0.98	2.04	7.46	9.17	6.51	1.94
e x H	alfalfa	2.75	5.30	5.76	7.68	3.60	2.33
e x I	other hay	1.96	3.62	6.76	8.00	4.42	3.45
e x J	irrigated pasture	1.18	2.37	4.74	5.65	4.98	3.59

Table 2.1.4.44 Summary – maximum crop evapotranspiration - Lower Laramie subbasin (cont)

2000							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
f	**(inches per month) (2)**	**4.49**	**6.03**	**7.42**	**8.33**	**7.17**	**4.78**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
f x A	winter wheat	2.42	6.69	8.53	5.75	--	--
f x B	spring wheat	1.98	5.31	8.76	6.41	--	--
f x C	barley	2.10	5.89	8.85	7.44	2.43	1.20
f x D	oats	2.10	5.89	8.85	7.44	2.43	1.20
f x E	dry beans	1.12	1.51	6.58	9.85	4.14	1.20
f x F	sugar beets	1.93	2.89	6.08	9.16	7.89	4.11
f x G	corn	1.12	2.39	8.55	10.44	7.23	1.99
f x H	alfalfa	3.15	6.20	6.60	8.74	4.00	2.39
f x I	other hay	2.25	4.23	7.74	9.10	4.91	3.55
f x J	irrigated pasture	1.35	2.78	5.42	6.43	5.54	3.69
1993							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
g	**(inches per month) (2)**	**4.06**	**5.62**	**6.14**	**7.17**	**6.48**	**4.30**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
g x A	winter wheat	2.19	6.24	7.06	4.95	--	--
g x B	spring wheat	1.79	4.95	7.25	5.52	--	--
g x C	barley	1.90	5.49	7.33	6.40	2.20	1.08
g x D	oats	1.90	5.49	7.33	6.40	2.20	1.08
g x E	dry beans	1.02	1.41	5.45	8.48	3.74	1.08
g x F	sugar beets	1.75	2.70	5.03	7.89	7.13	3.70
g x G	corn	1.02	2.23	7.07	8.98	6.54	1.79
g x H	alfalfa	2.85	5.78	5.46	7.52	3.62	2.15
g x I	other hay	2.03	3.95	6.40	7.84	4.44	3.19
g x J	irrigated pasture	1.22	2.59	4.49	5.54	5.00	3.32
2001							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
h	**(inches per month) (2)**	**3.24**	**5.50**	**7.61**	**8.47**	**7.58**	**5.08**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
h x A	winter wheat	1.75	6.11	8.75	5.84	--	--
h x B	spring wheat	1.43	4.84	8.98	6.52	--	--
h x C	barley	1.51	5.37	9.08	7.56	2.57	1.27
h x D	oats	1.51	5.37	9.08	7.56	2.57	1.27
h x E	dry beans	0.81	1.38	6.75	10.02	4.37	1.27
h x F	sugar beets	1.39	2.64	6.24	9.32	8.34	4.37
h x G	corn	0.81	2.18	8.77	10.61	7.65	2.12
h x H	alfalfa	2.27	5.66	6.77	8.89	4.23	2.55
h x I	other hay	1.62	3.86	7.94	9.26	5.19	3.77
h x J	irrigated pasture	0.97	2.54	5.56	6.54	5.85	3.92

Table 2.1.4.44 Summary – maximum crop evapotranspiration - Lower Laramie subbasin (cont)

1985							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
i	**(inches per month) (2)**	**4.80**	**6.23**	**7.16**	**7.85**	**6.95**	**4.11**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
i x A	winter wheat	2.59	6.92	8.23	5.42	--	--
i x B	spring wheat	2.11	5.48	8.45	6.04	--	--
i x C	barley	2.24	6.09	8.54	7.01	2.36	1.03
i x D	oats	2.24	6.09	8.54	7.01	2.36	1.03
i x E	dry beans	1.20	1.56	6.35	9.29	4.01	1.03
i x F	sugar beets	2.06	2.99	5.87	8.64	7.65	3.53
i x G	corn	1.20	2.47	8.25	9.84	7.01	1.71
i x H	alfalfa	3.36	6.41	6.37	8.23	3.88	2.06
i x I	other hay	2.40	4.37	7.47	8.58	4.76	3.05
i x J	irrigated pasture	1.44	2.87	5.23	6.06	5.37	3.17
1988							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
j	**(inches per month) (2)**	**4.78**	**6.06**	**7.75**	**7.60**	**7.02**	**4.72**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
j x A	winter wheat	2.58	6.73	8.91	5.24	--	--
j x B	spring wheat	2.10	5.33	9.15	5.85	--	--
j x C	barley	2.23	5.92	9.25	6.79	2.38	1.18
j x D	oats	2.23	5.92	9.25	6.79	2.38	1.18
j x E	dry beans	1.20	1.52	6.87	8.99	4.05	1.18
j x F	sugar beets	2.06	2.91	6.36	8.36	7.72	4.06
j x G	corn	1.20	2.41	8.93	9.52	7.08	1.97
j x H	alfalfa	3.35	6.24	6.89	7.97	3.92	2.36
j x I	other hay	2.39	4.25	8.08	8.31	4.81	3.50
j x J	irrigated pasture	1.43	2.79	5.67	5.87	5.42	3.64
1997							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
k	**(inches per month) (2)**	**3.58**	**5.75**	**6.78**	**7.55**	**6.36**	**4.55**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
k x A	winter wheat	1.93	6.38	7.80	5.21	--	--
k x B	spring wheat	1.58	5.06	8.00	5.81	--	--
k x C	barley	1.67	5.62	8.09	6.74	2.16	1.14
k x D	oats	1.67	5.62	8.09	6.74	2.16	1.14
k x E	dry beans	0.90	1.44	6.01	8.93	3.67	1.14
k x F	sugar beets	1.54	2.76	5.56	8.31	7.00	3.91
k x G	corn	0.90	2.28	7.81	9.46	6.42	1.90
k x H	alfalfa	2.51	5.92	6.03	7.92	3.55	2.28
k x I	other hay	1.79	4.04	7.07	8.25	4.36	3.38
k x J	irrigated pasture	1.07	2.65	4.96	5.83	4.91	3.51

Table 2.1.4.44 Summary – maximum crop evapotranspiration - Lower Laramie subbasin (cont)

1996							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
l	**(inches per month) (2)**	**4.55**	**5.18**	**7.36**	**7.50**	**6.88**	**4.72**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
l x A	winter wheat	2.46	5.75	8.46	5.18	--	--
l x B	spring wheat	2.00	4.56	8.68	5.78	--	--
l x C	barley	2.12	5.06	8.78	6.70	2.33	1.18
l x D	oats	2.12	5.06	8.78	6.70	2.33	1.18
l x E	dry beans	1.14	1.30	6.53	8.87	3.97	1.18
l x F	sugar beets	1.96	2.49	6.04	8.25	7.57	4.06
l x G	corn	1.14	2.06	8.48	9.40	6.94	1.97
l x H	alfalfa	3.19	5.33	6.54	7.87	3.84	2.36
l x I	other hay	2.28	3.64	7.68	8.20	4.71	3.50
l x J	irrigated pasture	1.37	2.39	5.38	5.79	5.31	3.64
1987							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
m	**(inches per month) (2)**	**5.13**	**5.65**	**7.34**	**7.73**	**6.41**	**4.95**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
m x A	winter wheat	2.77	6.27	8.44	5.33	--	--
m x B	spring wheat	2.26	4.97	8.66	5.95	--	--
m x C	barley	2.40	5.52	8.76	6.90	2.17	1.24
m x D	oats	2.40	5.52	8.76	6.90	2.17	1.24
m x E	dry beans	1.28	1.41	6.51	9.14	3.70	1.24
m x F	sugar beets	2.21	2.71	6.02	8.50	7.05	4.26
m x G	corn	1.28	2.24	8.46	9.69	6.47	2.06
m x H	alfalfa	3.60	5.81	6.53	8.11	3.58	2.48
m x I	other hay	2.57	3.97	7.66	8.45	4.39	3.67
m x J	irrigated pasture	1.54	2.60	5.37	5.97	4.95	3.82

Table 2.1.4.44 Summary – maximum crop evapotranspiration - Lower Laramie subbasin (cont)

1982							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
n	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.30**	**5.07**	**6.31**	**7.99**	**6.87**	**4.25**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
n x A	winter wheat	2.32	5.63	7.26	5.51	--	--
n x B	spring wheat	1.89	4.46	7.45	6.15	--	--
n x C	barley	2.01	4.95	7.53	7.14	2.33	1.06
n x D	oats	2.01	4.95	7.53	7.14	2.33	1.06
n x E	dry beans	1.08	1.27	5.60	9.45	3.96	1.06
n x F	sugar beets	1.85	2.43	5.17	8.79	7.56	3.66
n x G	corn	1.08	2.01	7.27	10.01	6.93	1.77
n x H	alfalfa	3.01	5.22	5.61	8.38	3.83	2.13
n x I	other hay	2.15	3.56	6.58	8.73	4.71	3.15
n x J	irrigated pasture	1.29	2.34	4.61	6.17	5.30	3.28
1998							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
o	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.21**	**5.72**	**6.12**	**7.62**	**6.61**	**5.21**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
o x A	winter wheat	2.27	6.35	7.04	5.26	--	--
o x B	spring wheat	1.85	5.03	7.22	5.87	--	--
o x C	barley	1.97	5.59	7.30	6.80	2.24	1.30
o x D	oats	1.97	5.59	7.30	6.80	2.24	1.30
o x E	dry beans	1.05	1.43	5.43	9.01	3.81	1.30
o x F	sugar beets	1.81	2.75	5.02	8.38	7.27	4.48
o x G	corn	1.05	2.27	7.05	9.55	6.67	2.17
o x H	alfalfa	2.95	5.89	5.44	7.99	3.69	2.61
o x I	other hay	2.11	4.02	6.38	8.33	4.53	3.87
o x J	irrigated pasture	1.26	2.64	4.47	5.88	5.10	4.02

Table 2.1.4.44 Summary – maximum crop evapotranspiration - Lower Laramie subbasin (cont)

1981							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
p	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.94**	**4.82**	**7.64**	**7.83**	**6.64**	**5.20**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
p x A	winter wheat	2.67	5.35	8.79	5.40	--	--
p x B	spring wheat	2.17	4.24	9.02	6.03	--	--
p x C	barley	2.31	4.71	9.11	6.99	2.25	1.30
p x D	oats	2.31	4.71	9.11	6.99	2.25	1.30
p x E	dry beans	1.24	1.21	6.78	9.26	3.83	1.30
p x F	sugar beets	2.12	2.31	6.26	8.61	7.30	4.47
p x G	corn	1.24	1.91	8.80	9.81	6.70	2.17
p x H	alfalfa	3.46	4.96	6.79	8.21	3.71	2.61
p x I	other hay	2.47	3.38	7.97	8.56	4.55	3.86
p x J	irrigated pasture	1.48	2.22	5.58	6.04	5.13	4.01

Notes:
(1) See Table 2.1.4.39.
(2) See Table 2.1.4.28.

2.1.4.5.5 Maximum Crop Evapotranspiration, $ET_{C(max)}$ – Horse Creek Subbasin

Table 2.1.4.45 summarizes maximum evapotranspiration calculations for each crop and each month during the high, low, and normal or average stream flow years of available record during 1972 through 2001 irrigation seasons in the Horse Creek subbasin.

Table 2.1.4.45 Summary – maximum crop evapotranspiration - Horse Creek subbasin

Row	Crop coefficients, K_{CO} (1)						
		Apr	May	Jun	Jul	Aug	Sep
A	winter wheat	0.540	1.110	1.150	0.690	--	--
B	spring wheat	0.440	0.880	1.180	0.770	--	--
C	barley	0.467	0.977	1.193	0.893	0.339	0.250
D	oats	0.467	0.977	1.193	0.893	0.339	0.250
E	dry beans	0.250	0.250	0.887	1.183	0.577	0.250
F	sugar beets	0.430	0.480	0.820	1.100	1.100	0.860
G	corn	0.250	0.397	1.152	1.253	1.009	0.417
H	alfalfa	0.701	1.029	0.889	1.049	0.558	0.501
I	other hay	0.500	0.702	1.043	1.093	0.685	0.742
J	irrigated pasture	0.300	0.461	0.731	0.772	0.772	0.772

High flow years (2)

1986

Row	Parameter	Apr	May	Jun	Jul	Aug	Sep
a	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.08**	**5.46**	**7.44**	**7.77**	**6.73**	**4.09**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	2.20	6.06	8.56	5.36	--	--
a x B	spring wheat	1.80	4.80	8.78	5.98	--	--
a x C	barley	1.91	5.33	8.88	6.94	2.28	1.02
a x D	oats	1.91	5.33	8.88	6.94	2.28	1.02
a x E	dry beans	1.02	1.37	6.60	9.19	3.88	1.02
a x F	sugar beets	1.75	2.62	6.10	8.55	7.40	3.52
a x G	corn	1.02	2.17	8.57	9.74	6.79	1.71
a x H	alfalfa	2.86	5.62	6.61	8.15	3.76	2.05
a x I	other hay	2.04	3.83	7.76	8.49	4.61	3.03
a x J	irrigated pasture	1.22	2.52	5.44	6.00	5.20	3.16

1984

Row	Parameter	Apr	May	Jun	Jul	Aug	Sep
b	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.26**	**5.98**	**6.88**	**7.60**	**6.74**	**4.24**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	1.76	6.64	7.91	5.24	--	--
b x B	spring wheat	1.43	5.26	8.12	5.85	--	--
b x C	barley	1.52	5.84	8.21	6.79	2.28	1.06
b x D	oats	1.52	5.84	8.21	6.79	2.28	1.06
b x E	dry beans	0.82	1.5	6.1	8.99	3.89	1.06
b x F	sugar beets	1.4	2.87	5.64	8.36	7.41	3.65
b x G	corn	0.82	2.37	7.93	9.52	6.8	1.77
b x H	alfalfa	2.29	6.15	6.12	7.97	3.76	2.12
b x I	other hay	1.63	4.2	7.18	8.31	4.62	3.15
b x J	irrigated pasture	0.98	2.76	5.03	5.87	5.2	3.27

Table 2.1.4.45 Summary – maximum crop evapotranspiration - Horse Creek subbasin (cont)

Row	Parameter	Apr	May	Jun	Jul	Aug	Sep
	1985						
c	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.71**	**6.15**	**7.05**	**7.76**	**6.91**	**4.18**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	2.54	6.83	8.11	5.35	--	--
c x B	spring wheat	2.07	5.41	8.32	5.98	--	--
c x C	barley	2.20	6.01	8.41	6.93	2.34	1.05
c x D	oats	2.20	6.01	8.41	6.93	2.34	1.05
c x E	dry beans	1.18	1.54	6.25	9.18	3.99	1.05
c x F	sugar beets	2.03	2.95	5.78	8.54	7.60	3.59
c x G	corn	1.18	2.44	8.12	9.72	6.97	1.74
c x H	alfalfa	3.30	6.33	6.27	8.14	3.86	2.09
c x I	other hay	2.36	4.32	7.35	8.48	4.73	3.10
c x J	irrigated pasture	1.41	2.84	5.15	5.99	5.33	3.23
	1973						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
d	**Reference evapotranspiration, ET_o (inches per month) (2)**	**3.29**	**5.33**	**7.10**	**7.19**	**7.05**	**3.89**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	1.78	5.92	8.17	4.96	--	--
d x B	spring wheat	1.45	4.69	8.38	5.54	--	--
d x C	barley	1.54	5.21	8.47	6.42	2.39	0.97
d x D	oats	1.54	5.21	8.47	6.42	2.39	0.97
d x E	dry beans	0.82	1.33	6.30	8.51	4.07	0.97
d x F	sugar beets	1.41	2.56	5.82	7.91	7.76	3.35
d x G	corn	0.82	2.12	8.18	9.01	7.11	1.62
d x H	alfalfa	2.31	5.48	6.31	7.54	3.93	1.95
d x I	other hay	1.65	3.74	7.41	7.86	4.83	2.89
d x J	irrigated pasture	0.99	2.46	5.19	5.55	5.44	3.00
	Low flow years (2)						
	1972						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
a	**Reference evapotranspiration, ET_o (inches per month) (2)**	**3.89**	**5.38**	**6.89**	**7.21**	**6.39**	**4.68**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	2.10	5.97	7.92	4.97	--	--
a x B	spring wheat	1.71	4.73	8.13	5.55	--	--
a x C	barley	1.82	5.26	8.22	6.44	2.17	1.17
a x D	oats	1.82	5.26	8.22	6.44	2.17	1.17
a x E	dry beans	0.97	1.35	6.11	8.53	3.69	1.17
a x F	sugar beets	1.67	2.58	5.65	7.93	7.03	4.02
a x G	corn	0.97	2.14	7.94	9.03	6.45	1.95
a x H	alfalfa	2.73	5.54	6.13	7.56	3.57	2.34
a x I	other hay	1.95	3.78	7.19	7.88	4.38	3.47
a x J	irrigated pasture	1.17	2.48	5.04	5.57	4.93	3.61

Table 2.1.4.45 Summary – maximum crop evapotranspiration - Horse Creek subbasin (cont)

1989							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
b	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.56**	**5.95**	**6.76**	**7.99**	**6.41**	**4.63**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	2.46	6.60	7.77	5.51	--	--
b x B	spring wheat	2.01	5.24	7.98	6.15	--	--
b x C	barley	2.13	5.81	8.06	7.14	2.17	1.16
b x D	oats	2.13	5.81	8.06	7.14	2.17	1.16
b x E	dry beans	1.14	1.49	6.00	9.45	3.70	1.16
b x F	sugar beets	1.96	2.86	5.54	8.79	7.05	3.98
b x G	corn	1.14	2.36	7.79	10.01	6.47	1.93
b x H	alfalfa	3.20	6.12	6.01	8.38	3.58	2.32
b x I	other hay	2.28	4.18	7.05	8.73	4.39	3.44
b x J	irrigated pasture	1.37	2.74	4.94	6.17	4.95	3.57
1990							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
c	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.24**	**5.18**	**7.37**	**6.92**	**6.62**	**4.94**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	2.29	5.75	8.48	4.77	--	--
c x B	spring wheat	1.87	4.56	8.70	5.33	--	--
c x C	barley	1.98	5.06	8.79	6.18	2.24	1.24
c x D	oats	1.98	5.06	8.79	6.18	2.24	1.24
c x E	dry beans	1.06	1.30	6.54	8.19	3.82	1.24
c x F	sugar beets	1.82	2.49	6.04	7.61	7.28	4.25
c x G	corn	1.06	2.06	8.49	8.67	6.68	2.06
c x H	alfalfa	2.97	5.33	6.55	7.26	3.69	2.47
c x I	other hay	2.12	3.64	7.69	7.56	4.53	3.67
c x J	irrigated pasture	1.27	2.39	5.39	5.34	5.11	3.81
1992							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
d	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.97**	**6.30**	**6.76**	**7.08**	**6.19**	**5.05**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	2.68	6.99	7.77	4.89	--	--
d x B	spring wheat	2.19	5.54	7.98	5.45	--	--
d x C	barley	2.32	6.16	8.06	6.32	2.10	1.26
d x D	oats	2.32	6.16	8.06	6.32	2.10	1.26
d x E	dry beans	1.24	1.58	6.00	8.38	3.57	1.26
d x F	sugar beets	2.14	3.02	5.54	7.79	6.81	4.34
d x G	corn	1.24	2.50	7.79	8.87	6.25	2.11
d x H	alfalfa	3.48	6.48	6.01	7.43	3.45	2.53
d x I	other hay	2.49	4.42	7.05	7.74	4.24	3.75
d x J	irrigated pasture	1.49	2.90	4.94	5.47	4.78	3.90

Table 2.1.4.45 Summary – maximum crop evapotranspiration - Horse Creek subbasin (cont)

Normal or average flow years (2)							
1974							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
a	**Reference evapotranspiration, ET_o (inches per month) (2)**	**3.88**	**5.95**	**7.41**	**8.19**	**6.49**	**4.36**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	2.10	6.60	8.52	5.65	--	--
a x B	spring wheat	1.71	5.24	8.74	6.31	--	--
a x C	barley	1.81	5.81	8.84	7.31	2.20	1.09
a x D	oats	1.81	5.81	8.84	7.31	2.20	1.09
a x E	dry beans	0.97	1.49	6.57	9.69	3.74	1.09
a x F	sugar beets	1.67	2.86	6.08	9.01	7.14	3.75
a x G	corn	0.97	2.36	8.54	10.26	6.55	1.82
a x H	alfalfa	2.72	6.12	6.59	8.59	3.62	2.18
a x I	other hay	1.94	4.18	7.73	8.95	4.45	3.24
a x J	irrigated pasture	1.16	2.74	5.42	6.32	5.01	3.37
1983							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
b	**Reference evapotranspiration, ET_o (inches per month) (2)**	**3.41**	**5.09**	**6.09**	**7.82**	**6.97**	**4.98**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	1.84	5.65	7.00	5.40	--	--
b x B	spring wheat	1.50	4.48	7.19	6.02	--	--
b x C	barley	1.59	4.97	7.27	6.98	2.36	1.25
b x D	oats	1.59	4.97	7.27	6.98	2.36	1.25
b x E	dry beans	0.85	1.27	5.40	9.25	4.02	1.25
b x F	sugar beets	1.47	2.44	4.99	8.60	7.67	4.28
b x G	corn	0.85	2.02	7.02	9.80	7.03	2.08
b x H	alfalfa	2.39	5.24	5.41	8.20	3.89	2.49
b x I	other hay	1.71	3.57	6.35	8.55	4.77	3.70
b x J	irrigated pasture	1.02	2.35	4.45	6.04	5.38	3.84
1988							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
c	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.85**	**5.70**	**8.16**	**7.73**	**7.02**	**4.75**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	2.62	6.33	9.38	5.33	--	--
c x B	spring wheat	2.13	5.02	9.63	5.95	--	--
c x C	barley	2.26	5.57	9.73	6.90	2.38	1.19
c x D	oats	2.26	5.57	9.73	6.90	2.38	1.19
c x E	dry beans	1.21	1.43	7.24	9.14	4.05	1.19
c x F	sugar beets	2.09	2.74	6.69	8.50	7.72	4.09
c x G	corn	1.21	2.26	9.40	9.69	7.08	1.98
c x H	alfalfa	3.40	5.87	7.25	8.11	3.92	2.38
c x I	other hay	2.43	4.00	8.51	8.45	4.81	3.52
c x J	irrigated pasture	1.46	2.63	5.96	5.97	5.42	3.67

Table 2.1.4.45 Summary – maximum crop evapotranspiration - Horse Creek subbasin (cont)

1982							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
d	**(inches per month) (2)**	**4.24**	**5.35**	**6.11**	**7.75**	**6.65**	**4.32**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	2.29	5.94	7.03	5.35	--	--
d x B	spring wheat	1.87	4.71	7.21	5.97	--	--
d x C	barley	1.98	5.23	7.29	6.92	2.25	1.08
d x D	oats	1.98	5.23	7.29	6.92	2.25	1.08
d x E	dry beans	1.06	1.34	5.42	9.17	3.84	1.08
d x F	sugar beets	1.82	2.57	5.01	8.53	7.32	3.72
d x G	corn	1.06	2.12	7.04	9.71	6.71	1.80
d x H	alfalfa	2.97	5.51	5.43	8.13	3.71	2.16
d x I	other hay	2.12	3.76	6.37	8.47	4.56	3.21
d x J	irrigated pasture	1.27	2.47	4.47	5.98	5.13	3.34
1987							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
e	**(inches per month) (2)**	**4.93**	**5.87**	**7.18**	**7.97**	**6.51**	**5.20**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
e x A	winter wheat	2.66	6.52	8.26	5.50	--	--
e x B	spring wheat	2.17	5.17	8.47	6.14	--	--
e x C	barley	2.30	5.73	8.57	7.12	2.21	1.30
e x D	oats	2.30	5.73	8.57	7.12	2.21	1.30
e x E	dry beans	1.23	1.47	6.37	9.43	3.76	1.30
e x F	sugar beets	2.12	2.82	5.89	8.77	7.16	4.47
e x G	corn	1.23	2.33	8.27	9.99	6.57	2.17
e x H	alfalfa	3.46	6.04	6.38	8.36	3.63	2.61
e x I	other hay	2.47	4.12	7.49	8.71	4.46	3.86
e x J	irrigated pasture	1.48	2.71	5.25	6.15	5.03	4.01
1979							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
f	**(inches per month) (2)**	**4.39**	**5.24**	**6.87**	**7.82**	**6.03**	**5.02**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
f x A	winter wheat	2.37	5.82	7.90	5.40	--	--
f x B	spring wheat	1.93	4.61	8.11	6.02	--	--
f x C	barley	2.05	5.12	8.20	6.98	2.04	1.26
f x D	oats	2.05	5.12	8.20	6.98	2.04	1.26
f x E	dry beans	1.10	1.31	6.09	9.25	3.48	1.26
f x F	sugar beets	1.89	2.52	5.63	8.60	6.63	4.32
f x G	corn	1.10	2.08	7.91	9.80	6.08	2.09
f x H	alfalfa	3.08	5.39	6.11	8.20	3.36	2.52
f x I	other hay	2.20	3.68	7.17	8.55	4.13	3.72
f x J	irrigated pasture	1.32	2.42	5.02	6.04	4.66	3.88

Table 2.1.4.45 Summary – maximum crop evapotranspiration - Horse Creek subbasin (cont)

Row	Parameter	Apr	May	Jun	Jul	Aug	Sep
	1976						
g	**Reference evapotranspiration, ET_o (inches per month) (2)**	**3.53**	**4.88**	**6.18**	**7.58**	**6.39**	**4.38**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
g x A	winter wheat	1.91	5.42	7.11	5.23	--	--
g x B	spring wheat	1.55	4.29	7.29	5.84	--	--
g x C	barley	1.65	4.77	7.37	6.77	2.17	1.10
g x D	oats	1.65	4.77	7.37	6.77	2.17	1.10
g x E	dry beans	0.88	1.22	5.48	8.97	3.69	1.10
g x F	sugar beets	1.52	2.34	5.07	8.34	7.03	3.77
g x G	corn	0.88	1.94	7.12	9.50	6.45	1.83
g x H	alfalfa	2.47	5.02	5.49	7.95	3.57	2.19
g x I	other hay	1.77	3.43	6.45	8.28	4.38	3.25
g x J	irrigated pasture	1.06	2.25	4.52	5.85	4.93	3.38
	1980						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
h	**Reference evapotranspiration, ET_o (inches per month) (2)**	**3.93**	**5.11**	**6.78**	**8.07**	**6.71**	**4.82**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
h x A	winter wheat	2.12	5.67	7.80	5.57	--	--
h x B	spring wheat	1.73	4.50	8.00	6.21	--	--
h x C	barley	1.84	4.99	8.09	7.21	2.27	1.21
h x D	oats	1.84	4.99	8.09	7.21	2.27	1.21
h x E	dry beans	0.98	1.28	6.01	9.55	3.87	1.21
h x F	sugar beets	1.69	2.45	5.56	8.88	7.38	4.15
h x G	corn	0.98	2.03	7.81	10.11	6.77	2.01
h x H	alfalfa	2.75	5.26	6.03	8.47	3.74	2.41
h x I	other hay	1.97	3.59	7.07	8.82	4.60	3.58
h x J	irrigated pasture	1.18	2.36	4.96	6.23	5.18	3.72
	1977						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
i	**Reference evapotranspiration, ET_o (inches per month) (2)**	**3.91**	**5.38**	**6.97**	**7.27**	**6.70**	**5.13**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
i x A	winter wheat	2.11	5.97	8.02	5.02	--	--
i x B	spring wheat	1.72	4.73	8.22	5.60	--	--
i x C	barley	1.83	5.26	8.32	6.49	2.27	1.28
i x D	oats	1.83	5.26	8.32	6.49	2.27	1.28
i x E	dry beans	0.98	1.35	6.18	8.60	3.87	1.28
i x F	sugar beets	1.68	2.58	5.72	8.00	7.37	4.41
i x G	corn	0.98	2.14	8.03	9.11	6.76	2.14
i x H	alfalfa	2.74	5.54	6.20	7.63	3.74	2.57
i x I	other hay	1.96	3.78	7.27	7.95	4.59	3.81
i x J	irrigated pasture	1.17	2.48	5.10	5.61	5.17	3.96

Table 2.1.4.45 Summary – maximum crop evapotranspiration - Horse Creek subbasin (cont)

Row	Parameter	Apr	May	Jun	Jul	Aug	Sep
	1978						
j	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.07**	**4.91**	**7.11**	**7.93**	**6.67**	**5.12**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
j x A	winter wheat	2.20	5.45	8.18	5.47	--	--
j x B	spring wheat	1.79	4.32	8.39	6.11	--	--
j x C	barley	1.90	4.80	8.48	7.08	2.26	1.28
j x D	oats	1.90	4.80	8.48	7.08	2.26	1.28
j x E	dry beans	1.02	1.23	6.31	9.38	3.85	1.28
j x F	sugar beets	1.75	2.36	5.83	8.72	7.34	4.40
j x G	corn	1.02	1.95	8.19	9.94	6.73	2.14
j x H	alfalfa	2.85	5.05	6.32	8.32	3.72	2.57
j x I	other hay	2.04	3.45	7.42	8.67	4.57	3.80
j x J	irrigated pasture	1.22	2.26	5.20	6.12	5.15	3.95
	1981						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
k	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.83**	**5.11**	**7.18**	**7.54**	**6.63**	**4.89**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
k x A	winter wheat	2.61	5.67	8.26	5.20	--	--
k x B	spring wheat	2.13	4.50	8.47	5.81	--	--
k x C	barley	2.26	4.99	8.57	6.73	2.25	1.22
k x D	oats	2.26	4.99	8.57	6.73	2.25	1.22
k x E	dry beans	1.21	1.28	6.37	8.92	3.83	1.22
k x F	sugar beets	2.08	2.45	5.89	8.29	7.29	4.21
k x G	corn	1.21	2.03	8.27	9.45	6.69	2.04
k x H	alfalfa	3.39	5.26	6.38	7.91	3.70	2.45
k x I	other hay	2.42	3.59	7.49	8.24	4.54	3.63
k x J	irrigated pasture	1.45	2.36	5.25	5.82	5.12	3.78
	1975						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
l	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.71**	**5.02**	**6.72**	**8.13**	**7.15**	**4.41**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
l x A	winter wheat	2.00	5.57	7.73	5.61	--	--
l x B	spring wheat	1.63	4.42	7.93	6.26	--	--
l x C	barley	1.73	4.90	8.02	7.26	2.42	1.10
l x D	oats	1.73	4.90	8.02	7.26	2.42	1.10
l x E	dry beans	0.93	1.26	5.96	9.62	4.13	1.10
l x F	sugar beets	1.60	2.41	5.51	8.94	7.87	3.79
l x G	corn	0.93	1.99	7.74	10.19	7.21	1.84
l x H	alfalfa	2.60	5.17	5.97	8.53	3.99	2.21
l x I	other hay	1.86	3.52	7.01	8.89	4.90	3.27
l x J	irrigated pasture	1.11	2.31	4.91	6.28	5.52	3.40

Table 2.1.4.45 Summary – maximum crop evapotranspiration - Horse Creek subbasin (cont)

1991							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
m	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.05**	**5.75**	**6.69**	**7.42**	**6.75**	**4.56**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
m x A	winter wheat	2.19	6.38	7.69	5.12	--	--
m x B	spring wheat	1.78	5.06	7.89	5.71	--	--
m x C	barley	1.89	5.62	7.98	6.63	2.29	1.14
m x D	oats	1.89	5.62	7.98	6.63	2.29	1.14
m x E	dry beans	1.01	1.44	5.93	8.78	3.89	1.14
m x F	sugar beets	1.74	2.76	5.49	8.16	7.43	3.92
m x G	corn	1.01	2.28	7.71	9.30	6.81	1.90
m x H	alfalfa	2.84	5.92	5.95	7.78	3.77	2.28
m x I	other hay	2.03	4.04	6.98	8.11	4.62	3.38
m x J	irrigated pasture	1.22	2.65	4.89	5.73	5.21	3.52

Notes:
(1) See Table 2.1.4.39.
(2) See Table 2.1.4.33.

2.1.4.5.6 Maximum Crop Evapotranspiration, $ET_{C(max)}$ – South Platte Subbasin

Table 2.1.4.46 summarizes maximum evapotranspiration calculations for each crop and each month during high, low, and normal or average stream flow years of available record during 1972 through 2001 irrigation seasons in the South Platte subbasin.

Table 2.1.4.46 Summary – maximum crop evapotranspiration - South Platte subbasin

Row		Crop coefficients, K_{CO} (1)					
		Apr	May	Jun	Jul	Aug	Sep
A	winter wheat	0.540	1.110	1.150	0.690	--	--
B	spring wheat	0.440	0.880	1.180	0.770	--	--
C	barley	0.467	0.977	1.193	0.893	0.339	0.250
D	oats	0.467	0.977	1.193	0.893	0.339	0.250
E	dry beans	0.250	0.250	0.887	1.183	0.577	0.250
F	sugar beets	0.430	0.480	0.820	1.100	1.100	0.860
G	corn	0.250	0.397	1.152	1.253	1.009	0.417
H	alfalfa	0.701	1.029	0.889	1.049	0.558	0.501
I	other hay	0.500	0.702	1.043	1.093	0.685	0.742
J	irrigated pasture	0.300	0.461	0.731	0.772	0.772	0.772
High flow years (2)							
1986							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
a	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.73**	**4.92**	**6.48**	**7.10**	**6.07**	**3.77**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	2.01	5.46	7.45	4.90	--	--
a x B	spring wheat	1.64	4.33	7.65	5.47	--	--
a x C	barley	1.74	4.81	7.73	6.34	2.06	0.94
a x D	oats	1.74	4.81	7.73	6.34	2.06	0.94
a x E	dry beans	0.93	1.23	5.75	8.40	3.50	0.94
a x F	sugar beets	1.60	2.36	5.31	7.81	6.68	3.24
a x G	corn	0.93	1.95	7.46	8.90	6.12	1.57
a x H	alfalfa	2.61	5.06	5.76	7.45	3.39	1.89
a x I	other hay	1.87	3.45	6.76	7.76	4.16	2.80
a x J	irrigated pasture	1.12	2.27	4.74	5.48	4.69	2.91
1984							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
b	**Reference evapotranspiration, ET_O (inches per month) (2)**	**2.85**	**5.36**	**6.12**	**6.96**	**5.97**	**3.91**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	1.54	5.95	7.04	4.80	--	--
b x B	spring wheat	1.25	4.72	7.22	5.36	--	--
b x C	barley	1.33	5.24	7.30	6.22	2.02	0.98
b x D	oats	1.33	5.24	7.30	6.22	2.02	0.98
b x E	dry beans	0.71	1.34	5.43	8.23	3.44	0.98
b x F	sugar beets	1.23	2.57	5.02	7.66	6.57	3.36
b x G	corn	0.71	2.13	7.05	8.72	6.02	1.63
b x H	alfalfa	2.00	5.52	5.44	7.30	3.33	1.96
b x I	other hay	1.43	3.76	6.38	7.61	4.09	2.90
b x J	irrigated pasture	0.86	2.47	4.47	5.37	4.61	3.02

Table 2.1.4.46 Summary – maximum crop evapotranspiration - South Platte subbasin (cont)

1985							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
c	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.13**	**5.51**	**6.51**	**6.93**	**6.41**	**3.77**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	2.23	6.12	7.49	4.78	--	--
c x B	spring wheat	1.82	4.85	7.68	5.34	--	--
c x C	barley	1.93	5.38	7.77	6.19	2.17	0.94
c x D	oats	1.93	5.38	7.77	6.19	2.17	0.94
c x E	dry beans	1.03	1.38	5.77	8.20	3.70	0.94
c x F	sugar beets	1.78	2.64	5.34	7.62	7.05	3.24
c x G	corn	1.03	2.19	7.50	8.68	6.47	1.57
c x H	alfalfa	2.90	5.67	5.79	7.27	3.58	1.89
c x I	other hay	2.07	3.87	6.79	7.57	4.39	2.80
c x J	irrigated pasture	1.24	2.54	4.76	5.35	4.95	2.91
1973							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
d	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.05**	**4.92**	**6.20**	**5.97**	**5.75**	**3.36**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	1.65	5.46	7.13	4.12	--	--
d x B	spring wheat	1.34	4.33	7.32	4.60	--	--
d x C	barley	1.42	4.81	7.40	5.33	1.95	0.84
d x D	oats	1.42	4.81	7.40	5.33	1.95	0.84
d x E	dry beans	0.76	1.23	5.50	7.06	3.32	0.84
d x F	sugar beets	1.31	2.36	5.08	6.57	6.33	2.89
d x G	corn	0.76	1.95	7.14	7.48	5.80	1.40
d x H	alfalfa	2.14	5.06	5.51	6.26	3.21	1.68
d x I	other hay	1.53	3.45	6.47	6.53	3.94	2.49
d x J	irrigated pasture	0.92	2.27	4.53	4.61	4.44	2.59

Table 2.1.4.46 Summary – maximum crop evapotranspiration - South Platte subbasin (cont)

Low flow years (2)							
1972							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
a	**(inches per month) (2)**	**3.65**	**4.85**	**6.34**	**6.53**	**5.69**	**4.14**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	1.97	5.38	7.29	4.51	--	--
a x B	spring wheat	1.61	4.27	7.48	5.03	--	--
a x C	barley	1.70	4.74	7.56	5.83	1.93	1.04
a x D	oats	1.70	4.74	7.56	5.83	1.93	1.04
a x E	dry beans	0.91	1.21	5.62	7.72	3.28	1.04
a x F	sugar beets	1.57	2.33	5.20	7.18	6.26	3.56
a x G	corn	0.91	1.93	7.30	8.18	5.74	1.73
a x H	alfalfa	2.56	4.99	5.64	6.85	3.18	2.07
a x I	other hay	1.83	3.40	6.61	7.14	3.90	3.07
a x J	irrigated pasture	1.10	2.24	4.63	5.04	4.39	3.20
1989							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_o						
b	**(inches per month) (2)**	**3.93**	**5.20**	**5.80**	**7.42**	**5.82**	**4.10**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	2.12	5.77	6.67	5.12	--	--
b x B	spring wheat	1.73	4.58	6.84	5.71	--	--
b x C	barley	1.84	5.08	6.92	6.63	1.97	1.03
b x D	oats	1.84	5.08	6.92	6.63	1.97	1.03
b x E	dry beans	0.98	1.30	5.14	8.78	3.36	1.03
b x F	sugar beets	1.69	2.50	4.76	8.16	6.40	3.53
b x G	corn	0.98	2.06	6.68	9.30	5.87	1.71
b x H	alfalfa	2.75	5.35	5.16	7.78	3.25	2.05
b x I	other hay	1.97	3.65	6.05	8.11	3.99	3.04
b x J	irrigated pasture	1.18	2.40	4.24	5.73	4.49	3.17

Table 2.1.4.46 Summary – maximum crop evapotranspiration - South Platte subbasin (cont)

1990							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
c	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.69**	**4.63**	**6.62**	**6.22**	**5.96**	**4.45**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	1.99	5.14	7.61	4.29	--	--
c x B	spring wheat	1.62	4.07	7.81	4.79	--	--
c x C	barley	1.72	4.52	7.90	5.55	2.02	1.11
c x D	oats	1.72	4.52	7.90	5.55	2.02	1.11
c x E	dry beans	0.92	1.16	5.87	7.36	3.44	1.11
c x F	sugar beets	1.59	2.22	5.43	6.84	6.56	3.83
c x G	corn	0.92	1.84	7.63	7.79	6.01	1.86
c x H	alfalfa	2.59	4.76	5.89	6.52	3.33	2.23
c x I	other hay	1.85	3.25	6.90	6.80	4.08	3.30
c x J	irrigated pasture	1.11	2.13	4.84	4.80	4.60	3.44
1992							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
d	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.47**	**5.55**	**5.76**	**6.18**	**5.53**	**4.53**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	2.41	6.16	6.62	4.26	--	--
d x B	spring wheat	1.97	4.88	6.80	4.76	--	--
d x C	barley	2.09	5.42	6.87	5.52	1.87	1.13
d x D	oats	2.09	5.42	6.87	5.52	1.87	1.13
d x E	dry beans	1.12	1.39	5.11	7.31	3.19	1.13
d x F	sugar beets	1.92	2.66	4.72	6.80	6.08	3.90
d x G	corn	1.12	2.20	6.64	7.74	5.58	1.89
d x H	alfalfa	3.13	5.71	5.12	6.48	3.09	2.27
d x I	other hay	2.24	3.90	6.01	6.75	3.79	3.36
d x J	irrigated pasture	1.34	2.56	4.21	4.77	4.27	3.50

Table 2.1.4.46 Summary – maximum crop evapotranspiration - South Platte subbasin (cont)

Normal or average flow years (2)							
1974							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
a	**Reference evapotranspiration, ET_o (inches per month) (2)**	**3.40**	**5.19**	**5.87**	**6.61**	**5.51**	**3.72**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
a x A	winter wheat	1.84	5.76	6.75	4.56	--	--
a x B	spring wheat	1.50	4.57	6.93	5.09	--	--
a x C	barley	1.59	5.07	7.00	5.90	1.87	0.93
a x D	oats	1.59	5.07	7.00	5.90	1.87	0.93
a x E	dry beans	0.85	1.30	5.21	7.82	3.18	0.93
a x F	sugar beets	1.46	2.49	4.81	7.27	6.06	3.20
a x G	corn	0.85	2.06	6.76	8.28	5.56	1.55
a x H	alfalfa	2.38	5.34	5.22	6.93	3.07	1.86
a x I	other hay	1.70	3.64	6.12	7.22	3.77	2.76
a x J	irrigated pasture	1.02	2.39	4.29	5.10	4.25	2.87
1983							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
b	**Reference evapotranspiration, ET_o (inches per month) (2)**	**2.88**	**4.27**	**5.46**	**6.99**	**6.42**	**4.58**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
b x A	winter wheat	1.56	4.74	6.28	4.82	--	--
b x B	spring wheat	1.27	3.76	6.44	5.38	--	--
b x C	barley	1.34	4.17	6.51	6.24	2.18	1.15
b x D	oats	1.34	4.17	6.51	6.24	2.18	1.15
b x E	dry beans	0.72	1.07	4.84	8.27	3.70	1.15
b x F	sugar beets	1.24	2.05	4.48	7.69	7.06	3.94
b x G	corn	0.72	1.70	6.29	8.76	6.48	1.91
b x H	alfalfa	2.02	4.39	4.85	7.33	3.58	2.29
b x I	other hay	1.44	3.00	5.69	7.64	4.40	3.40
b x J	irrigated pasture	0.86	1.97	3.99	5.40	4.96	3.54

Table 2.1.4.46 Summary – maximum crop evapotranspiration - South Platte subbasin (cont)

1988							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
c	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.02**	**5.15**	**6.89**	**7.21**	**6.33**	**4.27**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
c x A	winter wheat	2.17	5.72	7.92	4.97	--	--
c x B	spring wheat	1.77	4.53	8.13	5.55	--	--
c x C	barley	1.88	5.03	8.22	6.44	2.15	1.07
c x D	oats	1.88	5.03	8.22	6.44	2.15	1.07
c x E	dry beans	1.01	1.29	6.11	8.53	3.65	1.07
c x F	sugar beets	1.73	2.47	5.65	7.93	6.96	3.67
c x G	corn	1.01	2.04	7.94	9.03	6.39	1.78
c x H	alfalfa	2.82	5.30	6.13	7.56	3.53	2.14
c x I	other hay	2.01	3.62	7.19	7.88	4.34	3.17
c x J	irrigated pasture	1.21	2.37	5.04	5.57	4.89	3.30
1982							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
d	**Reference evapotranspiration, ET_o (inches per month) (2)**	**3.88**	**4.74**	**5.65**	**6.83**	**6.12**	**3.87**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
d x A	winter wheat	2.10	5.26	6.50	4.71	--	--
d x B	spring wheat	1.71	4.17	6.67	5.26	--	--
d x C	barley	1.81	4.63	6.74	6.10	2.07	0.97
d x D	oats	1.81	4.63	6.74	6.10	2.07	0.97
d x E	dry beans	0.97	1.19	5.01	8.08	3.53	0.97
d x F	sugar beets	1.67	2.28	4.63	7.51	6.73	3.33
d x G	corn	0.97	1.88	6.51	8.56	6.18	1.61
d x H	alfalfa	2.72	4.88	5.02	7.16	3.41	1.94
d x I	other hay	1.94	3.33	5.89	7.47	4.19	2.87
d x J	irrigated pasture	1.16	2.19	4.13	5.27	4.72	2.99
1987							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
e	**Reference evapotranspiration, ET_o (inches per month) (2)**	**4.48**	**4.82**	**6.42**	**7.08**	**5.58**	**4.33**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
e x A	winter wheat	2.42	5.35	7.38	4.89	--	--
e x B	spring wheat	1.97	4.24	7.58	5.45	--	--
e x C	barley	2.09	4.71	7.66	6.32	1.89	1.08
e x D	oats	2.09	4.71	7.66	6.32	1.89	1.08
e x E	dry beans	1.12	1.21	5.69	8.38	3.22	1.08
e x F	sugar beets	1.93	2.31	5.26	7.79	6.14	3.72
e x G	corn	1.12	1.91	7.40	8.87	5.63	1.81
e x H	alfalfa	3.14	4.96	5.71	7.43	3.11	2.17
e x I	other hay	2.24	3.38	6.70	7.74	3.82	3.21
e x J	irrigated pasture	1.34	2.22	4.69	5.47	4.31	3.34

Table 2.1.4.46 Summary – maximum crop evapotranspiration - South Platte subbasin (cont)

1979							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
f	**(inches per month) (2)**	**3.83**	**4.19**	**5.82**	**6.85**	**5.74**	**4.75**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
f x A	winter wheat	2.07	4.65	6.69	4.73	--	--
f x B	spring wheat	1.69	3.69	6.87	5.27	--	--
f x C	barley	1.79	4.09	6.94	6.12	1.95	1.19
f x D	oats	1.79	4.09	6.94	6.12	1.95	1.19
f x E	dry beans	0.96	1.05	5.16	8.10	3.31	1.19
f x F	sugar beets	1.65	2.01	4.77	7.54	6.31	4.09
f x G	corn	0.96	1.66	6.70	8.58	5.79	1.98
f x H	alfalfa	2.68	4.31	5.17	7.19	3.20	2.38
f x I	other hay	1.92	2.94	6.07	7.49	3.93	3.52
f x J	irrigated pasture	1.15	1.93	4.25	5.29	4.43	3.67
1976							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
g	**(inches per month) (2)**	**3.43**	**4.59**	**5.81**	**6.70**	**5.55**	**3.96**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
g x A	winter wheat	1.85	5.09	6.68	4.62	--	--
g x B	spring wheat	1.51	4.04	6.86	5.16	--	--
g x C	barley	1.60	4.48	6.93	5.98	1.88	0.99
g x D	oats	1.60	4.48	6.93	5.98	1.88	0.99
g x E	dry beans	0.86	1.15	5.15	7.93	3.20	0.99
g x F	sugar beets	1.47	2.20	4.76	7.37	6.11	3.41
g x G	corn	0.86	1.82	6.69	8.40	5.60	1.65
g x H	alfalfa	2.40	4.72	5.17	7.03	3.10	1.98
g x I	other hay	1.72	3.22	6.06	7.32	3.80	2.94
g x J	irrigated pasture	1.03	2.12	4.25	5.17	4.28	3.06
1980							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
	Reference evapotranspiration, ET_O						
h	**(inches per month) (2)**	**3.59**	**4.59**	**7.18**	**7.47**	**6.20**	**4.66**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
h x A	winter wheat	1.94	5.09	8.26	5.15	--	--
h x B	spring wheat	1.58	4.04	8.47	5.75	--	--
h x C	barley	1.68	4.48	8.57	6.67	2.10	1.17
h x D	oats	1.68	4.48	8.57	6.67	2.10	1.17
h x E	dry beans	0.90	1.15	6.37	8.84	3.58	1.17
h x F	sugar beets	1.54	2.20	5.89	8.22	6.82	4.01
h x G	corn	0.90	1.82	8.27	9.36	6.26	1.94
h x H	alfalfa	2.52	4.72	6.38	7.84	3.46	2.33
h x I	other hay	1.80	3.22	7.49	8.16	4.25	3.46
h x J	irrigated pasture	1.08	2.12	5.25	5.77	4.79	3.60

Table 2.1.4.46 Summary – maximum crop evapotranspiration - South Platte subbasin (cont)

Row	Parameter	Apr	May	Jun	Jul	Aug	Sep
	1977						
i	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.66**	**4.89**	**6.23**	**6.40**	**5.08**	**4.43**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
i x A	winter wheat	1.98	5.43	7.16	4.42	--	--
i x B	spring wheat	1.61	4.30	7.35	4.93	--	--
i x C	barley	1.71	4.78	7.43	5.72	1.72	1.11
i x D	oats	1.71	4.78	7.43	5.72	1.72	1.11
i x E	dry beans	0.92	1.22	5.53	7.57	2.93	1.11
i x F	sugar beets	1.57	2.35	5.11	7.04	5.59	3.81
i x G	corn	0.92	1.94	7.18	8.02	5.13	1.85
i x H	alfalfa	2.57	5.03	5.54	6.71	2.83	2.22
i x I	other hay	1.83	3.43	6.50	7.00	3.48	3.29
i x J	irrigated pasture	1.10	2.25	4.55	4.94	3.92	3.42
	1978						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
j	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.57**	**4.22**	**6.07**	**6.79**	**5.60**	**4.28**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
j x A	winter wheat	1.93	4.68	6.98	4.69	--	--
j x B	spring wheat	1.57	3.71	7.16	5.23	--	--
j x C	barley	1.67	4.12	7.24	6.06	1.90	1.07
j x D	oats	1.67	4.12	7.24	6.06	1.90	1.07
j x E	dry beans	0.89	1.06	5.38	8.03	3.23	1.07
j x F	sugar beets	1.54	2.03	4.98	7.47	6.16	3.68
j x G	corn	0.89	1.68	6.99	8.51	5.65	1.78
j x H	alfalfa	2.50	4.34	5.40	7.12	3.12	2.14
j x I	other hay	1.79	2.96	6.33	7.42	3.84	3.18
j x J	irrigated pasture	1.07	1.95	4.44	5.24	4.32	3.30
	1981						
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
k	**Reference evapotranspiration, ET_O (inches per month) (2)**	**4.53**	**4.44**	**6.60**	**6.82**	**5.78**	**4.55**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
k x A	winter wheat	2.45	4.93	7.59	4.71	--	--
k x B	spring wheat	1.99	3.91	7.79	5.25	--	--
k x C	barley	2.12	4.34	7.87	6.09	1.96	1.14
k x D	oats	2.12	4.34	7.87	6.09	1.96	1.14
k x E	dry beans	1.13	1.11	5.85	8.07	3.34	1.14
k x F	sugar beets	1.95	2.13	5.41	7.50	6.36	3.91
k x G	corn	1.13	1.76	7.60	8.55	5.83	1.90
k x H	alfalfa	3.18	4.57	5.87	7.15	3.23	2.28
k x I	other hay	2.27	3.12	6.88	7.45	3.96	3.38
k x J	irrigated pasture	1.36	2.05	4.82	5.27	4.46	3.51

Table 2.1.4.46 Summary – maximum crop evapotranspiration - South Platte subbasin (cont)

1975							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
l	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.09**	**4.23**	**5.58**	**6.36**	**5.95**	**4.01**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
l x A	winter wheat	1.67	4.70	6.42	4.39	--	--
l x B	spring wheat	1.36	3.72	6.58	4.90	--	--
l x C	barley	1.44	4.13	6.66	5.68	2.02	1.00
l x D	oats	1.44	4.13	6.66	5.68	2.02	1.00
l x E	dry beans	0.77	1.06	4.95	7.52	3.43	1.00
l x F	sugar beets	1.33	2.03	4.58	7.00	6.55	3.45
l x G	corn	0.77	1.68	6.43	7.97	6.00	1.67
l x H	alfalfa	2.17	4.35	4.96	6.67	3.32	2.01
l x I	other hay	1.55	2.97	5.82	6.95	4.08	2.98
l x J	irrigated pasture	0.93	1.95	4.08	4.91	4.59	3.10
1991							
Row	**Parameter**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
m	**Reference evapotranspiration, ET_O (inches per month) (2)**	**3.54**	**4.92**	**6.04**	**6.46**	**5.92**	**4.22**
	Maximum average crop evapotranspiration, $ET_{C(MAX)}$ (inches per month)						
m x A	winter wheat	1.91	5.46	6.95	4.46	--	--
m x B	spring wheat	1.56	4.33	7.13	4.97	--	--
m x C	barley	1.65	4.81	7.21	5.77	2.01	1.06
m x D	oats	1.65	4.81	7.21	5.77	2.01	1.06
m x E	dry beans	0.89	1.23	5.36	7.64	3.42	1.06
m x F	sugar beets	1.52	2.36	4.95	7.11	6.51	3.63
m x G	corn	0.89	1.95	6.96	8.09	5.97	1.76
m x H	alfalfa	2.48	5.06	5.37	6.78	3.30	2.11
m x I	other hay	1.77	3.45	6.30	7.06	4.06	3.13
m x J	irrigated pasture	1.06	2.27	4.42	4.99	4.57	3.26

Notes:
(1) See Table 2.1.4.39.
(2) See Table 2.1.4.38.

2.1.4.6 Irrigated, Harvested Acres by Crop and by Subbasin

Basin plan consumptive use calculations were dependent on determination of irrigated, harvested acreages for each crop assessed and in each of the seven Wyoming Platte River Basin subbasins. This determination involved combining county-based crop statistics with geographically-based project Geographic Information System (GIS) data.

2.1.4.6.1 Assessing National Agricultural Statistics Services (NASS) Cropping Data

Annual data pertaining to annual acres of irrigated crops harvested by county are published by the National Agricultural Statistics Services (NASS) and the U.S. Agricultural Census of the U.S. Department of Agriculture. During this study, these data were collected and organized:

- for the same 1972 through 2001 study period as was used in other components of this study
- for the 11 Wyoming counties that are located partly or entirely within the Platte River Basin, including Albany, Carbon, Converse, Fremont, Goshen, Laramie, Natrona, Niobrara, Platte, Sublette, and Sweetwater
- for the following irrigated, harvested crops, all of which have historically been harvested in one or more of the counties listed above, and for irrigated pasture:
  - winter wheat
  - spring wheat
  - barley
  - oats
  - dry beans
  - sugar beets
  - corn (for grain)
  - alfalfa
  - other hay

National Agricultural Statistics Services (NASS) cropping data and U.S. Agricultural Census irrigated pasture data were first collected and assessed to determine the average acreages of irrigated, harvested crops in each of the 11 counties listed above during the 1972 through 2001 study period. These listings and calculations, organized by crop, are summarized in Table 2.1.4.47. The average irrigated, harvested acreage during the period 1972 through 2001 for each crop in each county is shown on the bottom row of each page of this table, and irrigated pasture acreage data are shown at the bottom of the last page of this table. As shown on this table, NASS harvested acreage data for some crops in some counties and during some portions of the 1972 through 2001 study period were limited or non-existent. In some cases, the reasonable conclusion arising from this fact is that some crops have not historically been cultivated in some Wyoming counties. For example, NASS harvested acreage data do not exist for the study period for wheat, dry beans, sugar beets, and corn in Albany County. It is reasonable to assume that these crops were not cultivated to a significant extent in Albany County during the basin plan study period.

Table 2.1.4.47 Irrigated acres harvested by county during the period 1972 through 2001
Winter wheat - irrigated acres harvested

	County:										
Year:	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	**Sweetwater**
1972		400	200	200	1,600	1,000		200	500		
1973		600	200	200	1,300	1,100		600	800		
1974		900	200	200	1,200	1,300		700	1,000		
1975		800	200	200	1,300	1,200		800	1,000		
1976		800	200	200	1,200	1,200		800	1,000		
1977		700	200	100	800	900		700	800		
1978			200			2,200		400	800		
1979		500	200		300	3,100		200	900		
1980			100		300	3,900		200	600		
1981			100		300	3,700		200	300		
1982		100	100		400	4,500		200	200		
1983		100	200		1,200	3,200		300	300		
1984		100	300	100	2,500	3,200		900	300		
1985		100	400	100	2,800	5,500		600	400		
1986		300	400	100	3,000	5,600		700	900		
1987		300	400	100	3,000	6,000		600	800		
1988		200	400	100	2,200	4,300		400	700		
1989		300	300	100	2,000	4,800		400	500		
1990		200	200	100	2,100	5,500		300	300		
1991	100	400	200	300	1,100	5,300		800	900		
1992		400	200	200	1,600	5,900		400	600		
1993		100	200	200	800	5,400		300	600		100
1994		200		200	900	6,100		300	200		
1995					2,000	5,200		800	500		
1996					2,500	5,600			1,100		
1997					3,300	8,100			800		
1998					1,900	5,200					
1999					2,000	5,000			400		
2000					1,500	6,500					
2001					1,200	7,500			600		
Total		**7,500**	**5,100**	**2,700**	**46,300**	**128,000**		**11,800**	**17,800**		
Data points	**1**	**20**	**22**	**17**	**29**	**30**	**0**	**24**	**28**	**0**	**1**
Average,'72-'01		**375**	**232**	**159**	**1,597**	**4,267**		**492**	**636**		

Table 2.1.4.47 Irrigated acres harvested by county during the period 1972 through 2001 (cont)
Spring wheat - irrigated acres harvested

	County:										
Year:	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	**Sweetwater**
1972		200	100	300	100		50		200		
1973		150	150	200	200		50	150	150		
1974		300	300	200	300	1,000	100	300	200		
1975		300	400	600	300	1,300	100	300	200		
1976		300	500	1,200	300	1,300	100	500	400		
1977		100	500	400	300	700	100	400	200		
1978		100	500	300	200	600	100	400	200		
1979		100	500	300	100	400	100	100	500		
1980		100	400	300	100	200	100	200	400		
1981		100	400	200	200	200	100	200	200		
1982		200	800	400	500	500	100	300	300		
1983		200	800	500	600	600		300	300		
1984		100	800	1,100	400	500		200	400		
1985		100	500	800	400	700		200	300		
1986		200	500	1,300	1,000	1,200		600	400		
1987		200	300	900	300	700		300	300		
1988		200	300	800	300	500		300	300		
1989		200	400	600	300	700		400	400		
1990			100	200	100	300			100		
1991						200	100	200			
1992				200	500	700		400			
1993				100		300		200			
1994				1,200	300	900		600			
1995				500	400	1,300					
1996				300		800					
1997					500	1,100			300		
1998											
1999											
2000											
2001											
Total		**3,150**	**8,250**	**12,900**	**7,700**	**16,700**	**1,100**	**6,550**	**5,750**		
Data points	**0**	**18**	**19**	**24**	**23**	**24**	**12**	**21**	**20**	**0**	**0**
Average,'72-'01		**175**	**434**	**538**	**335**	**696**	**92**	**312**	**288**		

Table 2.1.4.47 Irrigated acres harvested by county during the period 1972 through 2001 (cont)
Barley - irrigated acres harvested

Year:	County: Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	Sweetwater
1972		300	1,900	12,000	2,200	500	800	200	500	100	600
1973		200	1,400	11,000	1,500	1,100	500	300	400	100	400
1974		200	1,800	13,500	1,500	3,300	400	1,500	1,400		300
1975		200	1,300	14,500	1,700	3,000	400	700	1,100		200
1976		100	1,000	14,500	2,700	3,500	500	800	1,500		200
1977	200	300	1,100	14,500	2,300	3,300	600	1,300	2,100		200
1978	300	400	1,400	15,000	3,400	3,800	500	3,200	2,400		200
1979	800	400	1,600	15,800	2,700	4,400		2,300	2,200		
1980	500	100	900	14,300	3,200	5,100	300	1,100	1,700		500
1981	800	200	900	15,800	2,900	4,500		800	1,300		100
1982	400	100	600	20,000	1,700	3,200	300	700	2,100		600
1983	200	400	800	22,300	2,400	4,200	200	1,100	1,600		400
1984	200	500	600	23,700	3,200	3,900	200	1,400	2,000		500
1985	200	500	1,000	23,800	3,600	3,700	100	1,400	1,700		400
1986	100	700	600	21,900	1,300	2,800	100	1,100	1,000		300
1987	100	800	1,100	17,000	1,300	2,500	200	500	1,600		300
1988	100	600	800	15,400	1,300	2,500	300	400	1,700		200
1989	100	600	600	10,000	1,700	3,500	100	400	1,300		200
1990	100	600	1,000	14,200	1,600	4,200	300	1,000	2,500		200
1991	100	300	1,000	14,900	1,500	2,700	300	700	700		200
1992			1,200	12,200	800	1,300	500	300	800		200
1993			200	8,900	400	1,200	400	200	1,200		200
1994			700	3,300	900	1,500	200	200	700		
1995			300	4,000	200				1,200		
1996				7,300	2,200				2,900		
1997				8,000	1,500	1,100	700		3,100		800
1998				6,000			700		1,900		
1999				5,700	500						800
2000				4,800					4,100		
2001				2,500							
Total	**4,200**	**7,500**	**23,800**	**386,800**	**50,200**	**70,800**	**8,600**	**21,600**	**46,700**		**8,000**
Data points	**15**	**20**	**24**	**30**	**27**	**24**	**23**	**23**	**28**		**23**
Average,'72-'01	**280**	**375**	**992**	**12,893**	**1,859**	**2,950**	**374**	**939**	**1,668**		**348**

Table 2.1.4.47 Irrigated acres harvested by county during the period 1972 through 2001 (cont)
Oats - irrigated acres harvested

	County:										
Year:	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	**Sweetwater**
1972	100	800	1,600	5,500	1,400	1,200	2,200	400	700	200	800
1973	100	800	2,000	3,800	1,200	1,000	1,800	900	1,200	200	600
1974	100	800	2,200	2,700	1,900	700	1,300	700	1,600	100	400
1975	100	800	2,200	3,000	1,900	600	1,500	700	1,600	100	300
1976	100	1,000	2,400	2,800	1,200	800	1,400	700	1,400	100	400
1977	100	600	2,900	2,900	1,800	2,200	1,300	700	900	100	400
1978	200	700	2,300	4,200	2,000	2,200	1,300	1,500	900	100	10,000
1979	300	900	1,600	2,800	2,000	2,900	1,100	1,000	1,200	200	300
1980	400	1,200	2,700	3,000	2,000	3,300	1,000	900	1,000	200	400
1981	400	1,500	3,000	3,800	1,600	2,600	1,500	1,000	1,800	200	300
1982	400	800	1,500	4,500	1,800	1,900	1,900	1,000	1,700	200	400
1983	400	600	1,800	7,500	1,600	3,300	2,700	1,000	2,200	200	400
1984	400	800	1,500	7,500	1,400	1,300	1,500	800	700	200	200
1985	500	700	700	5,500	800	700	1,800	400	700	100	300
1986	400	900	1,400	3,400	1,000	2,200	2,000	1,100	900	100	300
1987	300	800	1,400	3,300	1,400	1,100	1,800	600	400	100	500
1988	200	400	800	2,400	900	800	800	200	200	100	400
1989	300	200	400	2,600	600	700	1,100	100	100	200	300
1990	200	500	500	1,600	600	1,300	1,200	400	100	100	300
1991	100	300	800	1,800	1,200	700	1,500	300	600	100	600
1992		100	700	2,000	1,100	700	900	700	700	300	300
1993		300	500	2,400	700	400	800	700	800	100	100
1994		100	500	1,500	1,200	600	600	300	1,100	100	100
1995				1,700			1,800		1,100		
1996				2,900		900	1,300	100			
1997			1,100	2,400	700	400	900	100	700		500
1998				900		600	400		400		400
1999			400	1,400	400		500				400
2000				900							
2001				600	2,000	800			900		
Total	**5,100**	**15,600**	**36,900**	**91,300**	**34,400**	**35,900**	**37,900**	**16,300**	**25,600**	**3,400**	**19,400**
Data points	**20**	**23**	**25**	**30**	**26**	**27**	**28**	**25**	**27**	**23**	**26**
Average,'72-'01	**255**	**678**	**1,476**	**3,043**	**1,323**	**1,330**	**1,354**	**652**	**948**	**148**	**746**

Table 2.1.4.47 Irrigated acres harvested by county during the period 1972 through 2001 (cont)
Dry beans - irrigated acres harvested

Year:	County: Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	Sweetwater
1972			400	1,800	9,500	1,000			2,600		
1973			400	1,000	7,500	500			2,600		
1974			500	1,800	8,600	700			2,600		
1975			800	1,900	10,200	500			2,500		
1976			800	2,000	9,500	500			2,200		
1977			800	1,500	9,400	600			2,200		
1978			800	1,800	9,300	1,900			2,000		
1979			1,200	1,500	7,700	2,800			3,200		
1980			700	3,300	9,700	3,000			6,300		
1981			500	4,100	10,300	3,800			7,400		
1982			200	2,000	9,500	3,000			3,400		
1983			200	900	5,800	2,100			2,200		
1984			400	2,600	7,600	4,500			3,000		
1985			300	2,500	6,400	4,600			2,800		
1986			300	1,800	7,900	4,400			3,400		
1987			300	1,500	8,300	3,400			3,100		
1988			400	1,900	9,800	4,300			3,800		
1989			600	2,600	13,000	4,400		100	4,400		
1990			600	3,400	14,200	5,800			5,700		
1991			200	2,600	11,900	6,200			4,100		
1992				1,600	8,800	2,700			1,500		
1993				2,000	6,200	1,400			2,100		
1994				3,000	11,000	3,500			3,000		
1995				1,800	9,100	2,100			2,000		
1996				2,900	9,800	3,000			1,600		
1997				2,700	9,100	3,300			1,700		
1998				2,900	12,200	4,000			1,900		
1999				2,900	10,600	3,800			1,900		
2000				1,900	9,600	4,000			1,700		
2001				700	7,300	3,800			1,300		
Total			**10,400**	**64,900**	**279,800**	**89,600**			**88,200**		
Data points	**0**	**0**	**20**	**30**	**30**	**30**	**0**	**1**	**30**	**0**	**0**
Average,'72-'01			**520**	**2,163**	**9,327**	**2,987**			**2,940**		

Table 2.1.4.47 Irrigated acres harvested by county during the period 1972 through 2001 (cont)
Sugarbeets - irrigated acres harvested

Year:	County: Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	Sweetwater
1972			500	2,520	14,600	1,200			2,200		
1973			210	1,840	13,500	1,210			1,650		
1974					14,080	930			2,120		
1975					16,800	1,090			2,730		
1976					16,870	730			2,600		
1977					15,000	150			1,550		
1978					14,200	300			2,600		
1979					14,300	400			2,600		
1980					13,800	500					
1981					15,300	450			900		
1982					14,300	400			850		
1983					3,650	150			1,300		
1984				400	10,250	600			3,150		
1985				100	10,300	350			2,900		
1986				700	10,050	350			3,000		
1987				1,550	11,400	350			2,800		
1988				1,500	12,800	400			3,000		
1989				1,750	14,300	400			3,400		
1990				2,660	14,800	510			3,340		
1991				3,820	15,840	530			3,200		
1992				4,550	16,380	970			3,570		
1993				4,320	15,690	650			3,560		
1994				4,070	11,600	770			3,730		
1995				4,050	10,840	1,490			3,800		
1996				4,100	6,600	1,600			3,800		
1997				4,100	8,800	2,100			4,600		
1998				2,900	5,900	2,000			3,500		
1999				4,000	7,800	3,000			4,100		
2000				4,600	6,900	3,200			3,900		
2001				1,800	4,800	1,800			3,100		
Total				**55,330**	**361,450**	**28,580**			**83,550**		
Data points	**0**	**0**	**2**	**20**	**30**	**30**	**0**	**0**	**29**	**0**	**0**
Average,'72-'01				**2,767**	**12,048**	**953**			**2,881**		

Table 2.1.4.47 Irrigated acres harvested by county during the period 1972 through 2001 (cont)
Corn (for grain)- irrigated acres harvested

	County:										
Year:	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	**Sweetwater**
1972		100	400	2,500	13,000	800	1,000		3,400		
1973	100	200		1,800	16,600	500	900		4,700		
1974		200		2,800	16,100	400	600		3,900		
1975		100		800	12,500	200	700		2,700		
1976		100	100	2,700	11,000	200	800		3,100		
1977		100		3,500	15,000	400	1,000		4,500		
1978		100	200	3,100	19,000	1,000	500	400	3,900		
1979			100	1,500	17,800	100	200	400	4,800		
1980			200	2,000	20,600	200	200	500	6,900		
1981			100	1,200	29,500	100	500	700	6,600		
1982			100	1,800	27,800	1,400	200	700	6,900		
1983			100	3,700	40,700	2,500	400	700	7,000		
1984				2,000	33,500	4,600	200	600	7,000		
1985				900	31,000	3,000	200	400	6,900		
1986				1,500	31,000	2,500	400	300	6,200		
1987			500	1,100	27,500	1,900	200	300	4,500		
1988			600	1,900	31,900	4,800	100	700	6,300		
1989			400	1,300	25,600	4,000	300	600	2,900		
1990			400	2,000	29,800	4,000	300	600	5,000		
1991			400	1,200	31,000	4,700	400	700	4,800		
1992			400	1,600	31,400	6,500	400		6,000		
1993			400	600	27,400	5,200			4,800		
1994				900	30,600	6,100			5,100		
1995				800					3,700		
1996				1,200			300		4,200		
1997				1,400	31,700	4,600			5,000		
1998					34,600	6,300			4,600		
1999				700	35,500	3,500			4,000		
2000				1,400		6,300					
2001					33,900	5,400			3,400		
Total		**900**	**4,400**	**47,900**	**706,000**	**81,200**	**9,800**	**7,600**	**142,800**		
Data points	**1**	**7**	**15**	**28**	**27**	**28**	**22**	**14**	**29**	**0**	**0**
Average,'72-'01		**129**	**293**	**1,711**	**26,148**	**2,900**	**445**	**543**	**4,924**		

Table 2.1.4.47 Irrigated acres harvested by county during the period 1972 through 2001 (cont)
Alfalfa hay - irrigated acres harvested

Year:	County: Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	Sweetwater
1972	3,000	12,500	19,000	48,000	24,000	8,500	17,500	6,000	16,500	11,000	11,000
1973	3,000	12,000	20,000	48,000	23,000	8,000	17,000	6,900	17,000	11,000	10,500
1974	3,500	12,000	21,000	48,000	26,000	8,500	15,500	6,500	17,000	11,500	9,000
1975	4,000	14,000	21,000	50,000	29,000	9,000	16,000	6,500	17,500	12,500	10,000
1976	3,500	11,500	21,000	51,000	30,000	8,500	14,000	6,500	17,000	12,000	9,000
1977	3,000	10,000	23,000	51,000	28,000	9,000	15,000	7,000	18,000	12,000	7,000
1978	3,000	10,000	22,000	48,000	32,000	9,000	15,000	8,000	21,000	12,000	15,000
1979	2,800	11,000	23,000	56,000	31,000	8,000	15,000	7,000	21,000	12,500	7,200
1980	3,000	9,000	22,000	50,500	27,000	10,000	15,500	5,000	17,000	8,000	8,000
1981	3,000	10,500	23,000	53,000	28,500	11,500	18,500	7,000	19,000	8,000	11,500
1982	3,500	9,500	24,000	52,000	29,000	14,000	20,500	8,500	22,000	7,000	13,000
1983	2,500	9,500	24,000	50,000	27,000	15,000	15,500	8,000	19,500	6,000	13,000
1984	2,500	11,000	24,500	47,000	23,500	15,000	15,000	6,500	14,000	5,500	14,500
1985	3,000	8,000	21,000	51,000	29,000	18,000	14,500	5,000	13,000	4,000	10,500
1986	3,000	9,000	29,000	57,000	36,000	24,000	15,000	7,000	20,000	7,000	14,000
1987	2,500	8,500	21,500	51,000	37,000	26,000	11,500	13,000	21,500	8,500	13,000
1988	3,500	9,500	26,000	51,000	35,500	23,000	13,500	8,000	22,000	10,500	10,500
1989	2,700	7,500	26,000	58,000	36,000	20,500	13,300	9,500	18,000	10,500	7,500
1990	3,500	8,000	29,000	60,000	36,000	22,500	15,500	9,000	23,000	12,500	9,500
1991	5,500	15,500	26,000	66,000	38,000	29,000	15,000	7,000	30,000	10,000	16,000
1992	6,000	9,000	26,000	62,000	28,000	19,000	8,000	8,000	22,000	8,000	9,000
1993	6,000	10,500	26,500	65,000	31,000	26,000	22,500	8,500	25,000	15,000	9,000
1994	7,000	8,500	26,000	63,000	30,000	27,000	21,500	6,000	23,000	9,000	11,000
1995	8,000	8,000	26,000	67,000	28,000	25,000		6,000	19,000	7,000	
1996			23,000		26,000	18,000		10,000	23,000		
1997			24,000	67,000	31,000	18,000	17,500	6,000	21,000	3,000	
1998	10,900				30,800	18,000		6,000	17,200		
1999	10,700		25,000		33,000	21,000		10,000	24,000		
2000		15,000	30,000		36,000	18,000		9,000	20,000		
2001	4,300	5,000	22,000	66,000	37,000	19,000	17,400	8,000	26,000	5,000	11,300
Total	**116,900**	**264,500**	**694,500**	**1,436,500**	**916,300**	**506,000**	**395,200**	**225,400**	**604,200**	**239,000**	**260,000**
Data points	**27**	**26**	**29**	**26**	**30**	**30**	**25**	**30**	**30**	**26**	**24**
Average,'72-'01	**4,330**	**10,173**	**23,948**	**55,250**	**30,543**	**16,867**	**15,808**	**7,513**	**20,140**	**9,192**	**10,833**

Table 2.1.4.47 Irrigated acres harvested by county during the period 1972 through 2001 (cont)
Other hay - irrigated acres harvested

	County:										
Year:	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	**Sweetwater**
1972	75,000	96,000	12,000	19,000	9,000	16,000	7,000	3,000	12,000	121,000	7,000
1973	70,500	86,000	12,000	23,700	9,500	19,000	7,000	2,620	15,000	128,000	6,500
1974	67,000	81,500	8,000	21,500	8,400	15,000	5,200	2,100	10,500	110,000	6,300
1975	90,000	86,000	9,000	23,500	9,000	17,500	7,800	3,500	9,000	104,000	8,200
1976	104,500	100,000	8,500	22,500	8,000	20,500	9,800	3,500	10,500	103,000	8,200
1977	98,000	77,500	7,800	21,300	9,500	19,000	8,500	1,500	8,200	97,500	8,000
1978	97,000	95,000	9,400	23,500	8,600	16,000	10,000	2,500	8,000	108,000	200
1979	109,000	92,000	9,000	25,400	9,000	22,000	6,500	2,800	10,200	112,000	8,500
1980	108,000	100,000	10,000	23,500	6,000	23,000	7,000	2,500	9,000	117,000	7,000
1981	104,000	101,000	9,000	22,600	7,700	20,000	6,500	3,500	10,800	119,000	7,500
1982	81,000	92,100	6,700	25,000	4,300	24,600	5,500	3,600	15,300	112,100	11,000
1983	100,000	90,000	7,500	32,500	6,000	21,500	8,500	4,000	18,500	126,000	10,000
1984	81,000	83,000	6,000	38,000	11,500	15,000	9,500	7,000	16,500	110,000	10,000
1985	72,000	61,000	3,000	31,000	13,500	8,000	8,000	4,500	14,500	100,000	6,000
1986	66,000	73,000	6,000	31,000	19,000	15,000	10,000	3,000	23,000	106,000	7,000
1987	54,000	56,000	17,000	33,000	17,000	28,000	12,000	2,000	23,000	107,000	6,000
1988	51,500	61,500	15,000	31,500	17,000	29,000	10,500	2,000	19,000	108,000	5,000
1989	43,500	70,000	12,000	34,500	12,500	28,000	8,500	3,000	27,000	83,000	5,000
1990	47,000	57,500	13,000	36,500	13,000	27,000	7,500	1,500	18,000	86,000	6,000
1991	76,000	74,000	13,000	39,500	15,000	27,000	15,000	2,000	18,000	83,000	11,000
1992	69,000	85,000	8,000	32,500	9,000	18,000	10,000	4,000	15,000	90,000	14,000
1993	56,000	88,000	7,000	36,000	11,500	18,000	12,000	3,000	13,500	91,000	14,000
1994	41,000	77,000	4,000	26,600	12,000	21,000	16,500	1,000	11,000	93,000	14,500
1995	59,000	95,000	6,000		7,000	18,000		3,000	14,000	95,000	
1996			8,000		5,000	12,000		3,000	12,000		
1997			8,000	26,500	4,000	19,000	7,500	2,000	14,000	104,000	
1998	80,000				7,500	23,000		3,000	21,000		
1999	80,000		10,000		9,000	21,000		4,000	20,000	82,000	
2000	75,000		6,000		6,000	12,000		3,000	21,000	80,000	8,000
2001	77,000	80,000	7,000	22,000	8,000	16,000		1,000	17,500		
Total	**2,132,000**	**2,058,100**	**257,900**	**702,600**	**292,500**	**589,100**	**216,300**	**87,120**	**455,000**	**2,775,600**	**194,900**
Data points	**22**	**19**	**23**	**19**	**24**	**24**	**18**	**24**	**24**	**21**	**18**
Average,'72-'01	**76,143**	**82,324**	**8,893**	**28,104**	**9,750**	**19,637**	**9,013**	**2,904**	**15,167**	**102,800**	**8,121**

Irrigated pasture

	County:										
Year:	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	**Sweetwater**
1974	49,931	50,065	7,852	46,749	13,836	2,409	7,687	1,732	13,607	33,091	6,766
1978	82,179	71,892	13,502	36,006	23,763	4,805	8,977	3,070	16,678	52,842	10,592
1982	84,352	44,471	7,081	31,891	12,812	2,007	7,949		9,222	33,884	11,886
1987	46,797	40,362	7,666	39,311	11,501	2,854	11,079		12,632	45,191	8,525
1992	54,901	63,377	3,692	30,175	8,948	1,519	7,992	1,354	9,537	39,263	6,616
1997	71,495	87,087	11,526	40,940	39,843	4,812	23,511	1,548	10,112	65,468	11,304
Total:	**389,655**	**357,254**	**51,319**	**225,072**	**110,703**	**18,406**	**67,195**	**7,704**	**71,788**	**269,739**	**55,689**
Average:	**64,943**	**59,542**	**8,553**	**37,512**	**18,451**	**3,068**	**11,199**	**1,926**	**11,965**	**44,957**	**9,282**

Sources: Irrigated acreage from National Agricultural Statistics Service, U.S. Department of Agriculture (internet site); irrigated pasture data from U.S. Census of Agriculture, U.S. Department of Agriculture

National Agricultural Statistics Service (NASS) cropping data were used to calculate the portion of total average county irrigated, harvested acreage that has been cultivated in each crop under consideration. These calculations are summarized in Table 2.1.4.48. As shown in Table 2.1.4.48, the portions of total average 1972 through 2001 irrigated, harvested crops in Albany County consisted of about 3 percent alfalfa, about 52 percent other hay, and about 44 percent irrigated pasture. Comparable data for crops in the other counties that lie wholly or partially within Wyoming's Platte River Basin are also shown in this table.

Table 2.1.4.48 Summary - average irrigated, harvested acreages organized by county and by crop during the period 1972 through 2001

	Albany County:		Carbon County		Converse County		Fremont County	
Crop:	Average acres	Percentage of total average acres	Average acres	Percentage of total average acres	Average acres	Percentage of total average acres	Average acres	Percentage of total average acres
Winter wheat	0	0	375	0	232	1	159	0
Spring wheat	0	0	175	0	434	1	538	0
Barley	280	0	375	0	992	2	12,893	9
Oats	255	0	678	0	1,476	3	3,043	2
Dry Beans	0	0	0	0	520	1	2,163	2
Sugarbeets	0	0	0	0	0	0	2,767	2
Corn	0	0	129	0	293	1	1,711	1
Alfalfa	4,330	3	10,173	7	23,948	53	55,250	38
Other hay	76,143	52	82,324	54	8,893	20	28,104	19
Pasture	64,943	44	59,542	39	8,553	19	37,512	26

	Goshen County		Laramie County		Natrona County		Niobrara County	
Crop:	Average acres	Percentage of total average acres	Average acres	Percentage of total average acres	Average acres	Percentage of total average acres	Average acres	Percentage of total average acres
Winter wheat	1,597	1	4,267	8	0	0	492	3
Spring wheat	335	0	696	1	92	0	312	2
Barley	1,859	2	2,950	5	374	1	939	6
Oats	1,323	1	1,330	2	1,354	4	652	4
Dry Beans	9,327	8	2,987	5	0	0	0	0
Sugarbeets	12,048	11	953	2	0	0	0	0
Corn	26,148	23	2,900	5	445	1	543	4
Alfalfa	30,543	27	16,867	30	15,808	41	7,513	49
Other hay	9,750	9	19,637	35	9,013	24	2,904	19
Pasture	18,451	17	3,068	6	11,199	29	1,926	13

	Platte County		Sublette County		Sweetwater County	
Crop:	Average acres	Percentage of total average acres	Average acres	Percentage of total average acres	Average acres	Percentage of total average acres
Winter wheat	636	1	0	0	0	0
Spring wheat	288	0	0	0	0	0
Barley	1,668	3	0	0	348	1
Oats	948	2	148	0	746	3
Dry Beans	2,940	5	0	0	0	0
Sugarbeets	2,881	5	0	0	0	0
Corn	4,924	8	0	0	0	0
Alfalfa	20,140	33	9,192	6	10,833	37
Other hay	15,167	25	102,800	65	8,121	28
Pasture	11,965	19	44,957	29	9,282	32

Note:
See Table 2.1.4.47. for derivation of average irrigated,harvested acres shown in this table.

2.1.4.6.2 Geographic Information System (GIS) Irrigated Acreage Data

The basin plan Geographic Information System (GIS) map contains solid green areas that represent irrigated acreage in Wyoming's Platte River Basin. Above Pathfinder subbasin irrigated acreage shown in the basin plan GIS was mapped by the Wyoming State Engineer's Office (SEO) during the 1999 irrigation season for compliance with the 1945 North Platte Decree. The South Platte subbasin and a small portion of Lower Laramie subbasin irrigated acreages were delineated and reviewed by the SEO for use in this study. Irrigated acreage in the remainder of the basin was delineated under the direction of the Wyoming Attorney General's Office in 1995 and provided for use during this study. It is important to note that:

- quantities of irrigated acreage used during basin plan consumptive use calculations were those derived from the project GIS, not values that may be derived from National Agricultural Statistics Service (NASS) data described above,
- basin plan irrigated acreage in the Pathfinder to Guernsey subbasin includes Kendrick Project irrigated acreage, while Supreme Court (2001) consumptive use calculations for this subbasin do not include Kendrick Project irrigated acreage, and
- while NASS crop yield data show historical cultivation of crops other than alfalfa, other hay, and irrigated pasture in Fremont County, basin plan irrigated acreage calculations for the Above Pathfinder subbasin were based on the assumption that only alfalfa, other hay, and irrigated pasture have historically been cultivated in that portion of Fremont County that lies within the Above Pathfinder subbasin.

As noted above, National Agricultural Statistics Service (NASS) cropping data is organized on the basis of political boundaries – counties and states. Project consumptive use calculations were completed and organized on the basis of geographic boundaries – the seven Platte River Basin subbasins in Wyoming. Correlation of NASS county cropping data and project geographical information system (GIS) irrigated acreage data was therefore required.

Table 2.1.4.49 summarizes project GIS-derived areas, in units of square meters and acres, within each of the 11 Wyoming counties that lie partially or entirely within each of Wyoming's Platte River Basin subbasins. This table also shows derived areas and percentages of each county that lie within the basin. Relatively small portions of Fremont, Niobrara, Sublette, and Sweetwater Counties lie within Wyoming's Platte River Basin.

Table 2.1.4.49 Total areas of Wyoming counties located partially or entirely within Wyoming's Platte River Basin

County name	Subbasin name	Area within subbasin (square meters)	Area within subbasin (acres)	Total area (acres)	Total county area inside Platte River Basin (acres)	Percentage of total county area inside Platte River Basin
Albany	South Platte	590,391,218	145,903			
	Above Pathfinder	163,708	40			
	Above Pathfinder	373,759,864	92,367			
	Horse Creek	221,636,158	54,773			
	Upper Laramie	4,815,345,311	1,190,014			
	Lower Laramie	2,483,688,073	613,793			
	Pathfinder to Guernsey	204,174,720	50,458			
	Pathfinder to Guernsey	173,937,871	42,985			
	Pathfinder to Guernsey	1,220,133	302			
	Above Pathfinder	2,287,124,129	565,216	2,755,851	2,755,851	100.0
Carbon	Upper Laramie	2,176,786	538			
	Upper Laramie	184,815,365	45,673			
	OUTSIDE PRB (1)	6,243,063,710	1,542,845			
	Pathfinder to Guernsey	194,350,259	48,030			
	Pathfinder to Guernsey	172,179	43			
	Above Pathfinder	13,999,467,174	3,459,681	5,096,810	3,553,965	69.7
Converse	Lower Laramie	11,666	3			
	Above Pathfinder	654,088	162			
	Above Pathfinder	51,728,950	12,784			
	Pathfinder to Guernsey	5,483,265,935	1,355,077			
	OUTSIDE PRB (1)	5,502,629,005	1,359,862	2,727,888	1,368,026	50.1
Fremont	OUTSIDE PRB (1)	44,256,570	10,937			
	OUTSIDE PRB (1)	185,628,800	45,874			
	OUTSIDE PRB (1)	285,820,504	70,635			
	Above Pathfinder	4,551,654,100	1,124,848			
	Above Pathfinder	1,156,760	286			
	OUTSIDE PRB (1)	18,963,712,657	4,686,493	5,939,073	1,125,134	18.9
Goshen	Horse Creek	1,836,629,779	453,885			
	Lower Laramie	838,078,834	207,114			
	Pathfinder to Guernsey	54,415,495	13,448			
	Pathfinder to Guernsey	78,312,335	19,353			
	Guernsey to State Line	2,767,725,538	683,987			
	OUTSIDE PRB (1)	201,859,920	49,886	1,427,673	1,377,787	96.5
Laramie	South Platte	4,714,233,272	1,165,026			
	Horse Creek	1,916,397,474	473,598			
	Lower Laramie	324,256,417	80,133	1,718,757	1,718,757	100.0
Natrona	Above Pathfinder	13,728,034	3,393			
	Above Pathfinder	21,838,258	5,397			
	OUTSIDE PRB (1)	84,013	21			
	Above Pathfinder Dam	2,064,822,341	510,279			
	Pathfinder to Guernsey	5,875,682,116	1,452,054			
	OUTSIDE PRB (1)	5,943,367,666	1,468,781	3,439,925	1,971,123	57.3
Niobrara	Guernsey to State Line	81,803,214	20,216			
	Pathfinder to Guernsey	423,183,787	104,581			
	OUTSIDE PRB (1)	6,296,092,616	1,555,950	1,680,747	124,797	7.4
Platte	Horse Creek	135,214,679	33,416			
	Lower Laramie	3,221,566,828	796,144			
	Guernsey to State Line	2,390,748	591			
	Pathfinder to Guernsey	2,103,654,700	519,875	1,350,026	1,350,026	100.0
Sublette	Above Pathfinder	143,953,898	35,575			
	OUTSIDE PRB (1)	12,680,322,833	3,133,682	3,169,257	35,575	1.1
Sweetwater	Above Pathfinder	6,986,951	1,727			
	Above Pathfinder	59,372,046	14,673			
	OUTSIDE PRB (1)	27,155,755,875	6,710,988	6,727,388	16,400	0.2
Total:				**36,033,395**	**15,397,441**	

Note:
(1) OUTSIDE PRB = lands located within the county but outside the Platte River Basin

Source: Project GIS file *platte-counties-stats.dbf*

Table 2.1.4.50 summarizes project Geographic Information System (GIS)–derived irrigated acreages that lie within Wyoming's Platte River Basin organized by counties. It is again important to note that the acreages shown on this table were derived from the project GIS, not from National Agricultural Statistics Services (NASS) data. As shown in Table 2.1.4.50, relatively little or no GIS-delineated Platte River Basin irrigated acreage (46 acres, 266 acres, and 0 acres, respectively) lies within both Wyoming's Platte River Basin and Niobrara, Sublette, and Sweetwater Counties.

Table 2.1.4.50 Summary – Geographical Information System (GIS)–derived Platte River Basin irrigated agricultural acreages organized by county

County	Type of agricultural land	Platte River Basin subbasin	GIS-derived area (square meters)	Area (acres)	Percentage of total county area
Albany	Irrigated	Above Pathfinder	41,393,356.5100	10,230	9
	Irrigated	Pathfinder to Guernsey	1,975,891.5500	488	0
	Irrigated	Upper Laramie	363,649,372.3600	89,868	83
	Irrigated	Lower Laramie	31,003,495.2400	7,662	7
	Irrigated	Horse Creek	149,726.2100	37	0
	Irrigated	South Platte	1,527,516.0700	377	0
			Total:	**108,662**	**99**
Carbon	Irrigated	Above Pathfinder	533,135,673.9200	131,754	98
	Irrigated	Upper Laramie	9,379,238.9900	2,318	2
			Total:	**134,072**	**100**
Converse	Irrigated	Above Pathfinder	224,802.7100	56	0
	Irrigated	Pathfinder to Guernsey	182,096,002.1100	45,001	100
			Total:	**45,057**	**100**
Fremont	Irrigated	Above Pathfinder	22,387,671.0900	5,533	100
			Total:	**5,533**	**100**
Goshen	Irrigated	Guernsey to State Line	356,040,686.4200	87,988	63
	Irrigated	Lower Laramie	14,833,453.6100	3,666	3
	Irrigated	Horse Creek	189,854,381.5800	46,919	34
			Total:	**138,573**	**100**
Laramie	Irrigated	Lower Laramie	10,431,253.6300	2,578	4
	Irrigated	Horse Creek	49,782,008.6400	12,303	21
	Irrigated	South Platte	182,403,993.8500	45,077	75
			Total:	**59,958**	**100**
Natrona	Irrigated	Above Pathfinder	9,495,429.4300	2,347	6
	Irrigated	Pathfinder to Guernsey	140,613,825.6100	34,750	94
			Total:	**37,097**	**100**
Niobrara	Irrigated	Guernsey to State Line	184,707.0800	46	100
			Total:	**46**	**100**
Platte	Irrigated	Pathfinder to Guernsey	39,610,118.8800	9,789	12
	Irrigated	Lower Laramie	293,262,238.7800	72,474	88
	Irrigated	Horse Creek	1,062,158.6800	262	0
			Total:	**82,525**	**100**
Sublette	Irrigated	Above Pathfinder	1,077,771.0600	266	100
			Total:	**266**	**100**
Sweetwater	Irrigated	Above Pathfinder	0.0000	0	--
			Total:	0	--
			Total, all counties:	**611,789**	

Source: Project GIS file *Irrigated_land_Stats_2_28_FINAL.xls*

Table 2.1.4.51 summarizes project Geographic Information System (GIS)–derived county irrigated acreages that lie within Wyoming's Platte River Basin organized by subbasins. Note that total GIS-derived Platte River Basin irrigated acreage shown in both Table 2.1.4.50 and Table 2.1.4.51 is 611, 651 acres.

Table 2.1.4.51 Summary - Geographical Information System (GIS)-derived Platte River Basin irrigated agricultural land organized by subbasin

Subbasin	County	Type of agricultural land	Area (square meters)	Area (acres)	Percent of total area per subbasin
Above Pathfinder	Albany	Irrigated	41,393,356.5100	10,230	6.8
	Carbon	Irrigated	533,135,673.9200	131,754	87.7
	Converse	Irrigated	224,802.7100	56	0.0
	Fremont	Irrigated	22,387,671.0900	5,533	3.7
	Goshen	Irrigated	0	0	0.0
	Laramie	Irrigated	0	0	0.0
	Natrona	Irrigated	9,495,429.4300	2,347	1.6
	Niobrara	Irrigated	0	0	0.0
	Platte	Irrigated	0	0	0.0
	Sublette	Irrigated	1,077,771.0600	266	0.2
	Sweetwater	Irrigated	0	0	0.0
			Total:	**150,186**	**100.0**
Pathfinder to Guernsey	Albany	Irrigated	1,975,891.5500	488	1.0
	Carbon	Irrigated	0	0	0.0
	Converse	Irrigated	182,096,002.1100	45,001	50.0
	Fremont	Irrigated	0	0	0.0
	Goshen	Irrigated	0	0	0.0
	Laramie	Irrigated	0	0	0.0
	Natrona	Irrigated	140,613,825.6100	34,750	39.0
	Niobrara	Irrigated	0	0	0.0
	Platte	Irrigated	39,610,118.8800	9,789	11.0
	Sublette	Irrigated	0	0	0.0
	Sweetwater	Irrigated	0	0	0.0
			Total:	**90,028**	**101.0**
Guernsey to State Line	Albany	Irrigated	0	0	0.0
	Carbon	Irrigated	0	0	0.0
	Converse	Irrigated	0	0	0.0
	Fremont	Irrigated	0	0	0.0
	Goshen	Irrigated	356,040,686.4200	87,988	100.0
	Laramie	Irrigated	0	0	0.0
	Natrona	Irrigated	0	0	0.0
	Niobrara	Irrigated	184,707.0800	46	0.0
	Platte	Irrigated	0	0	0.0
	Sublette	Irrigated	0	0	0.0
	Sweetwater	Irrigated	0	0	0.0
			Total:	**88,034**	**100.0**

Table 2.1.4.51 Summary - Geographical Information System (GIS)-derived Platte River Basin irrigated agricultural land organized by subbasin (cont)

Subbasin	County	Type of agricultural land	Area (square meters)	Area (acres)	Percent of total area per subbasin
Upper Laramie	Albany	Irrigated	363,649,372.3600	89,868	97.0
	Carbon	Irrigated	9,379,238.9900	2,318	3.0
	Converse	Irrigated	0	0	0.0
	Fremont	Irrigated	0	0	0.0
	Goshen	Irrigated	0	0	0.0
	Laramie	Irrigated	0	0	0.0
	Natrona	Irrigated	0	0	0.0
	Niobrara	Irrigated	0	0	0.0
	Platte	Irrigated	0	0	0.0
	Sublette	Irrigated	0	0	0.0
	Sweetwater	Irrigated	0	0	0.0
			Total:	**92,186**	**100.0**
Lower Laramie	Albany	Irrigated	31,003,495.2400	7,662	9.0
	Carbon	Irrigated	0	0	0.0
	Converse	Irrigated	0	0	0.0
	Fremont	Irrigated	0	0	0.0
	Goshen	Irrigated	14,833,453.6100	3,666	4.0
	Laramie	Irrigated	10,431,253.6300	2,578	3.0
	Natrona	Irrigated	0	0	0.0
	Niobrara	Irrigated	0	0	0.0
	Platte	Irrigated	293,262,238.7800	72,474	84.0
	Sublette	Irrigated	0	0	0.0
	Sweetwater	Irrigated	0	0	0.0
			Total:	**86,380**	**100.0**
Horse Creek	Albany	Irrigated	149,726.2100	37	0.0
	Carbon	Irrigated	0	0	0.0
	Converse	Irrigated	0	0	0.0
	Fremont	Irrigated	0	0	0.0
	Goshen	Irrigated	189,854,381.5800	46,919	79.0
	Laramie	Irrigated	49,782,008.6400	12,303	21.0
	Natrona	Irrigated	0	0	0.0
	Niobrara	Irrigated	0	0	0.0
	Platte	Irrigated	1,062,158.6800	262	0.0
	Sublette	Irrigated	0	0	0.0
	Sweetwater	Irrigated	0	0	0.0
			Total:	**59,521**	**100.0**

Table 2.1.4.51 Summary - Geographical Information System (GIS)-derived Platte River Basin irrigated agricultural land organized by subbasin (cont)

Subbasin	County	Type of agricultural land	Area (square meters)	Area (acres)	Percent of total area per subbasin
South Platte	Albany	Irrigated	1,527,516.0700	377	1.0
	Carbon	Irrigated	0	0	0.0
	Converse	Irrigated	0	0	0.0
	Fremont	Irrigated	0	0	0.0
	Goshen	Irrigated	0	0	0.0
	Laramie	Irrigated	182,403,993.8500	45,077	99.0
	Natrona	Irrigated	0	0	0.0
	Niobrara	Irrigated	0	0	0.0
	Platte	Irrigated	0	0	0.0
	Sublette	Irrigated	0	0	0.0
	Sweetwater	Irrigated	0	0	0.0
			Total:	**45,454**	**100.0**
Total irrigated acreage in Wyoming's North Platte Basin:				**611,789**	

Geographic Information System (GIS) irrigated areas for each of the seven Platte River Basin subbasins are shown on Figures 2.1.4.9 through 2.1.4.15.

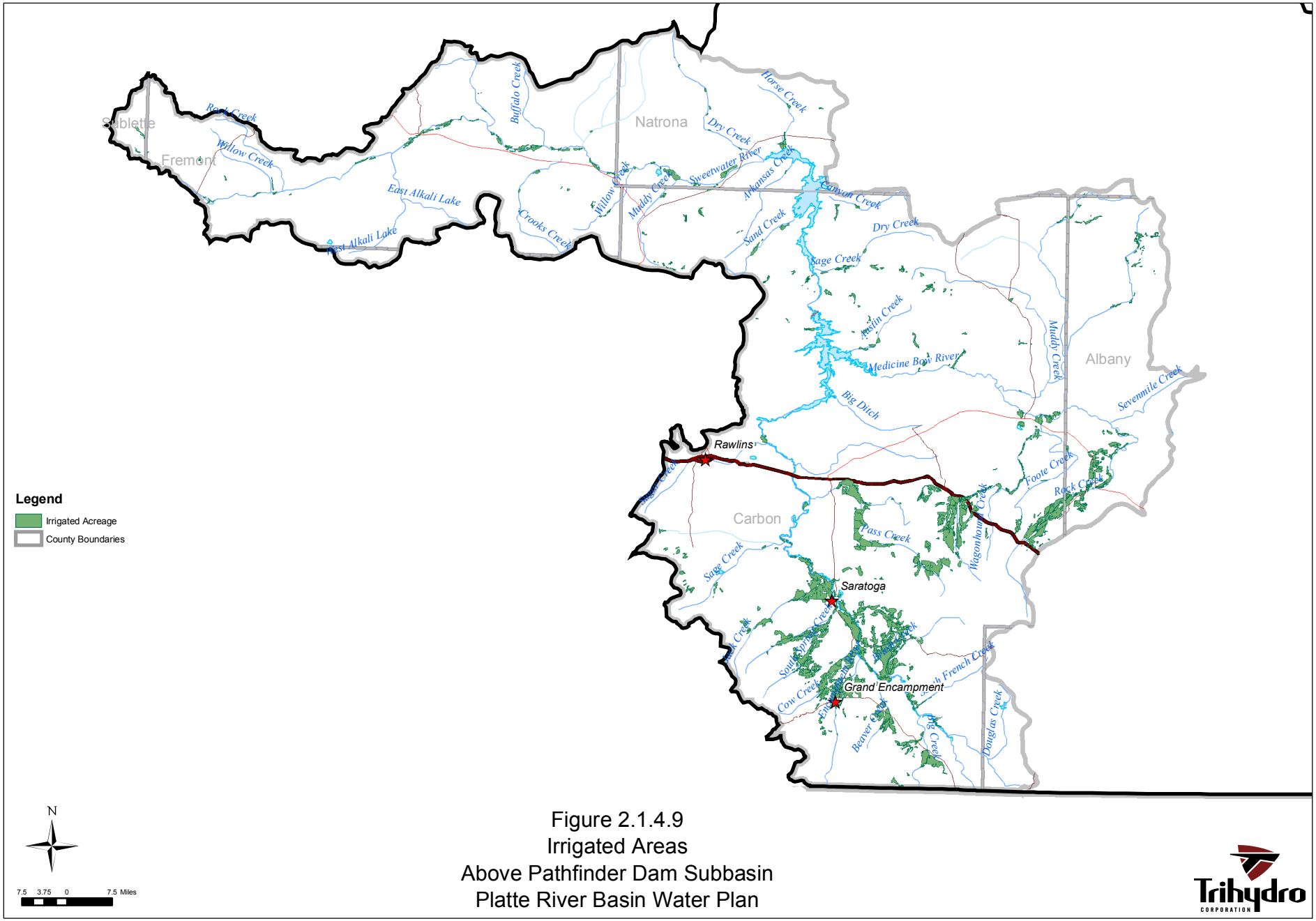


Figure 2.1.4.9
Irrigated Areas
Above Pathfinder Dam Subbasin
Platte River Basin Water Plan

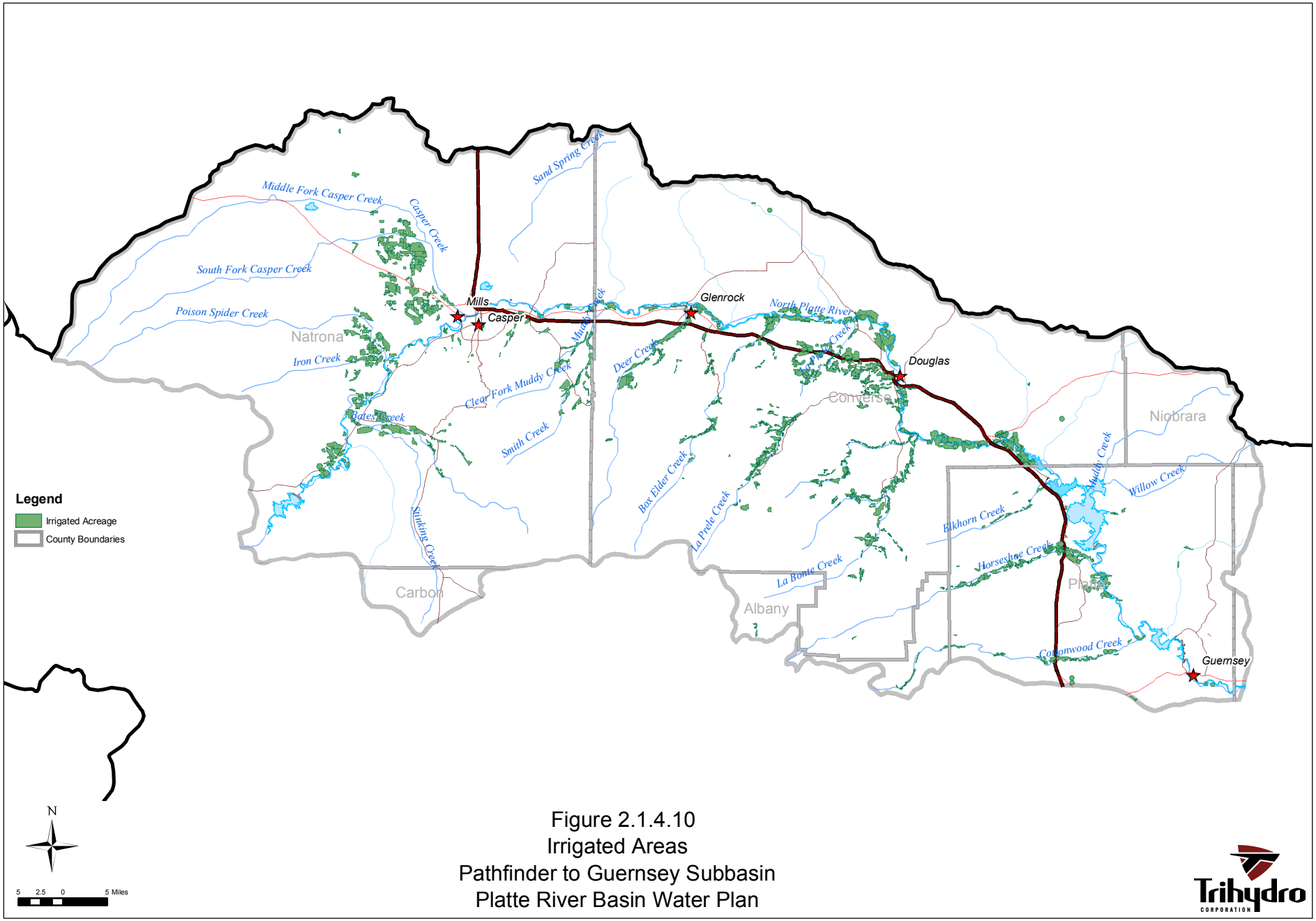


Figure 2.1.4.10
Irrigated Areas
Pathfinder to Guernsey Subbasin
Platte River Basin Water Plan

Trihydro CORPORATION

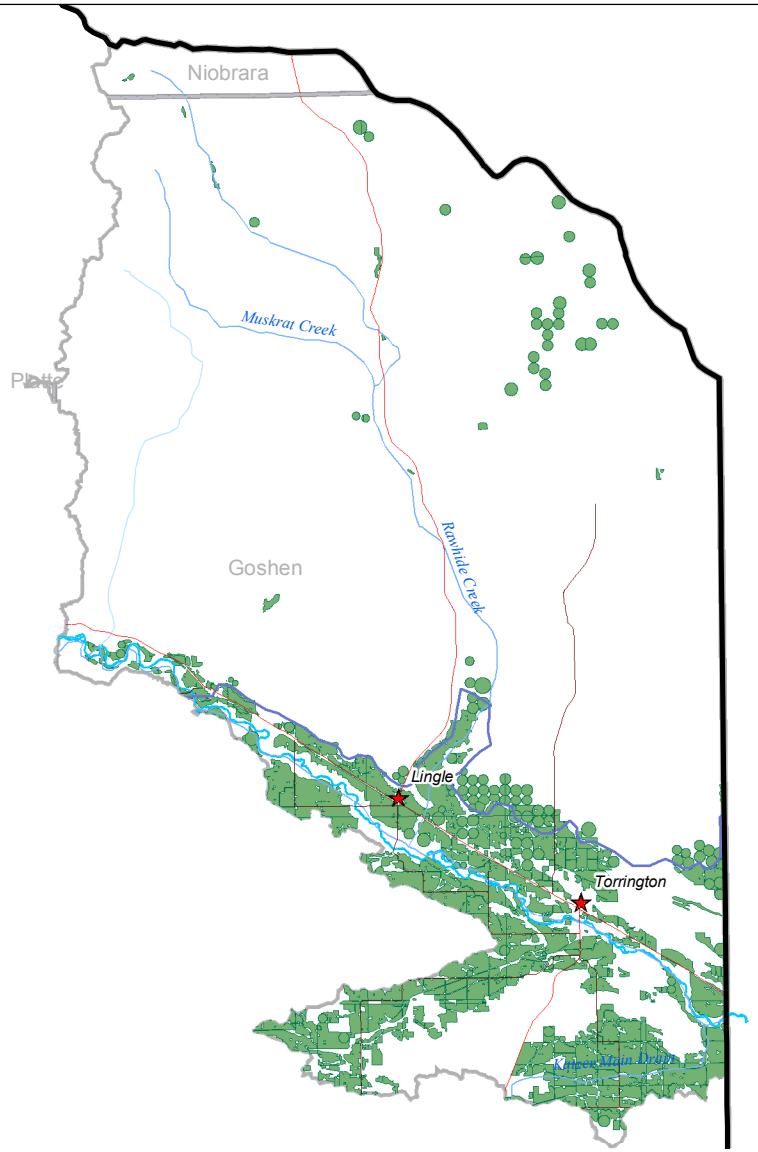


Figure 2.1.4.11
Irrigated Areas
Guernsey to State Line Subbasin
Platte River Basin Water Plan

Trihydro CORPORATION

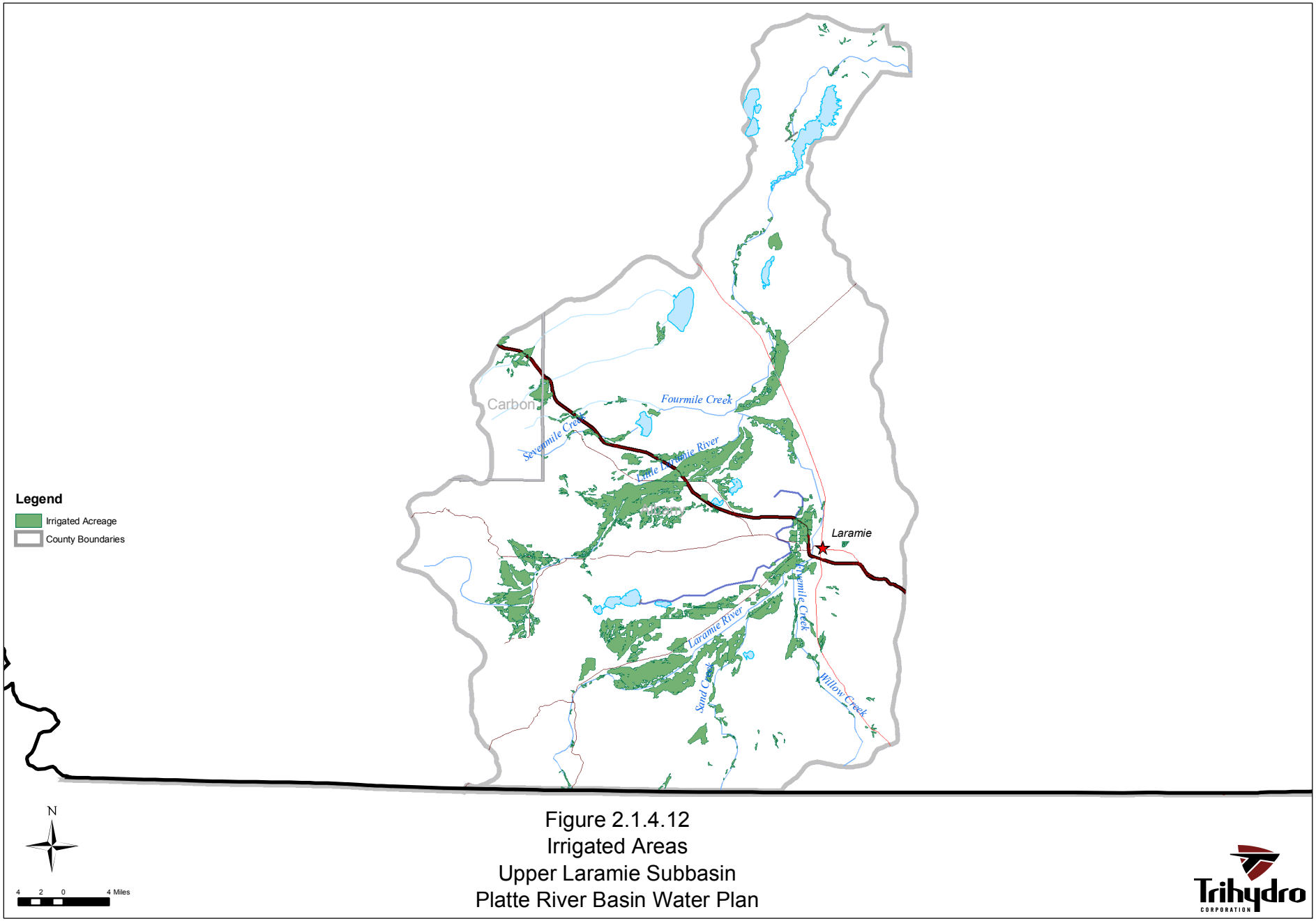


Figure 2.1.4.12
Irrigated Areas
Upper Laramie Subbasin
Platte River Basin Water Plan

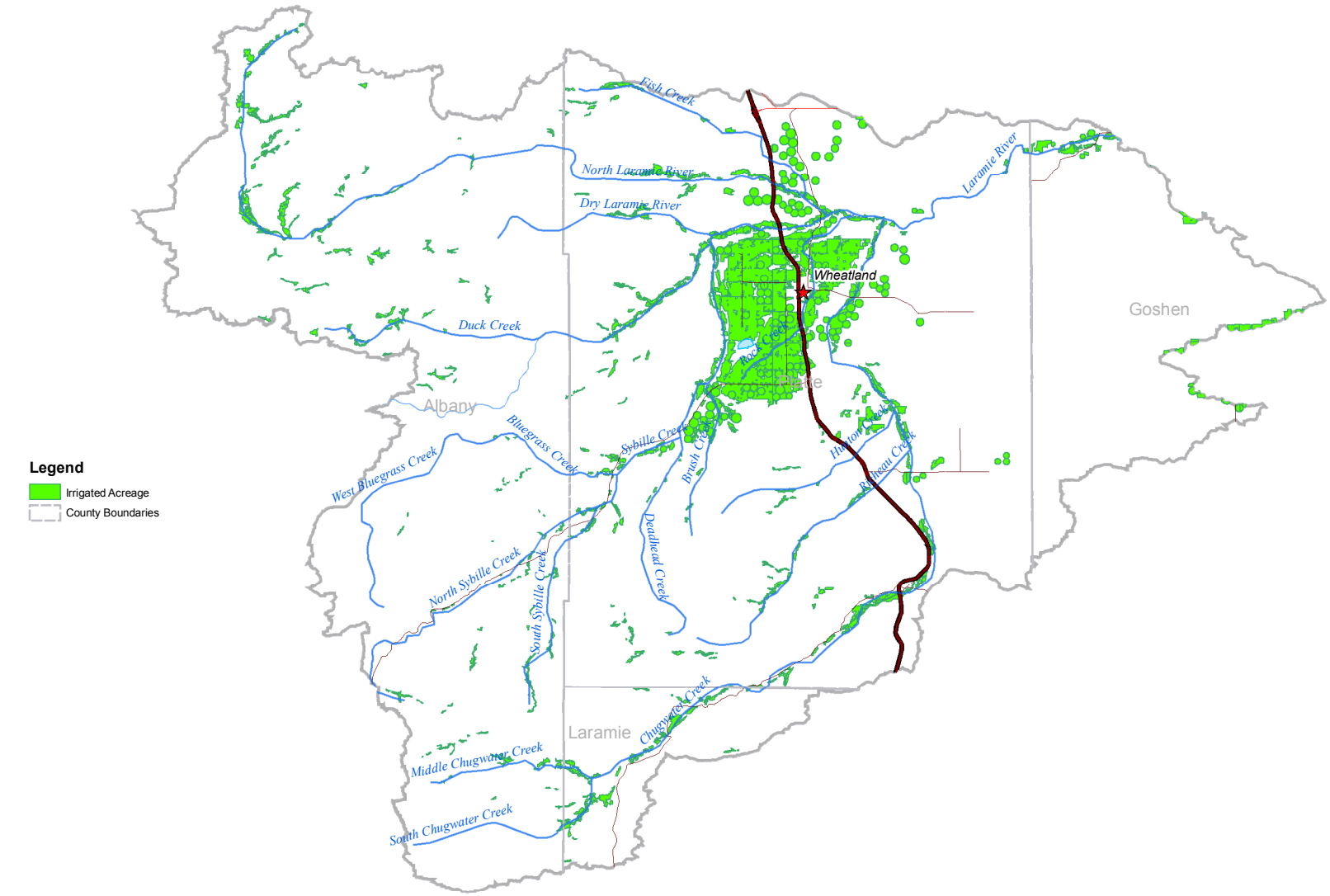


Figure 2.1.4.13
Irrigated Areas
Lower Laramie Subbasin
Platte River Basin Water Plan

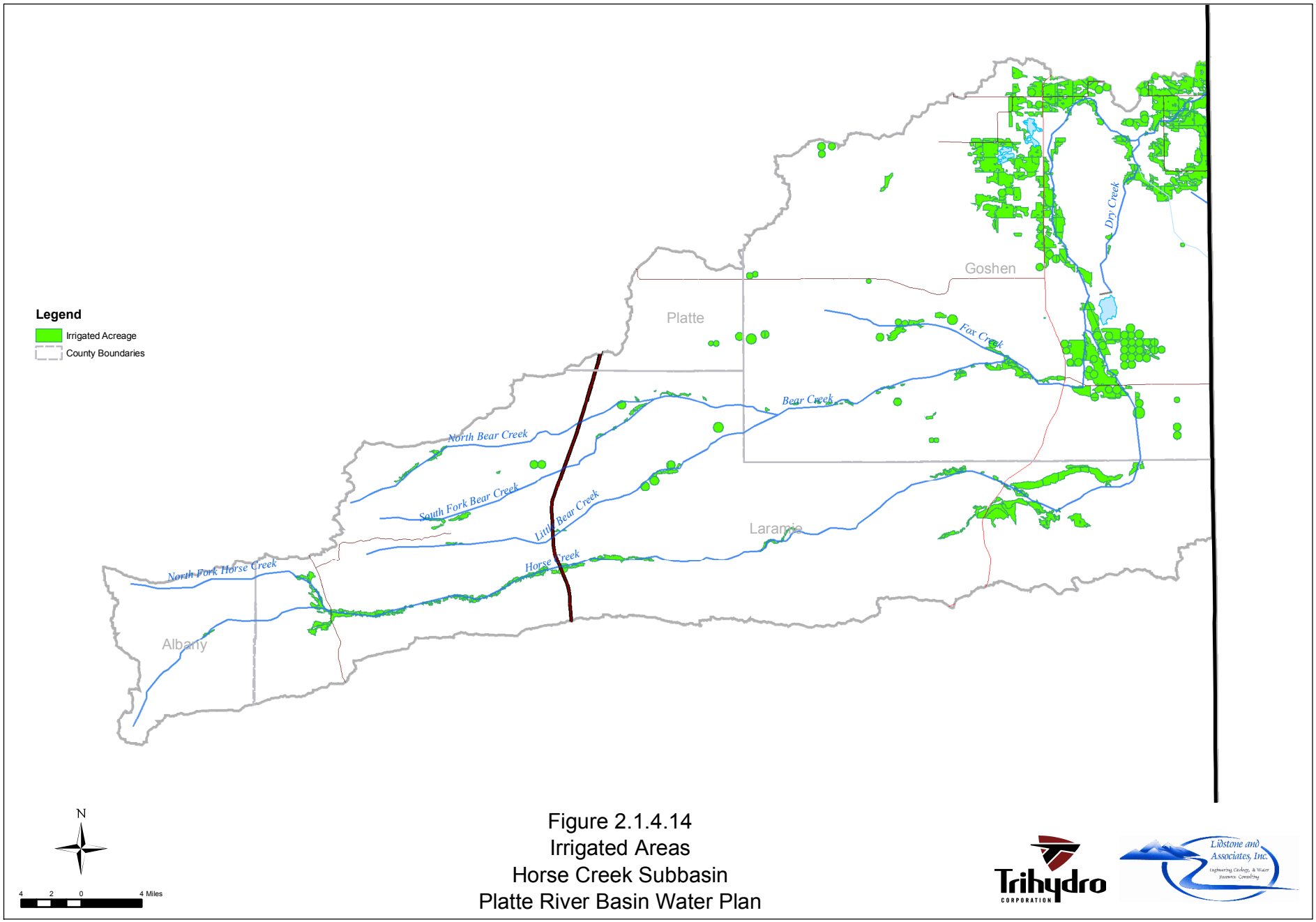


Figure 2.1.4.14
Irrigated Areas
Horse Creek Subbasin
Platte River Basin Water Plan

Trihydro CORPORATION

Lidstone and Associates, Inc.
Engineering, Geology, & Water Resources Consulting

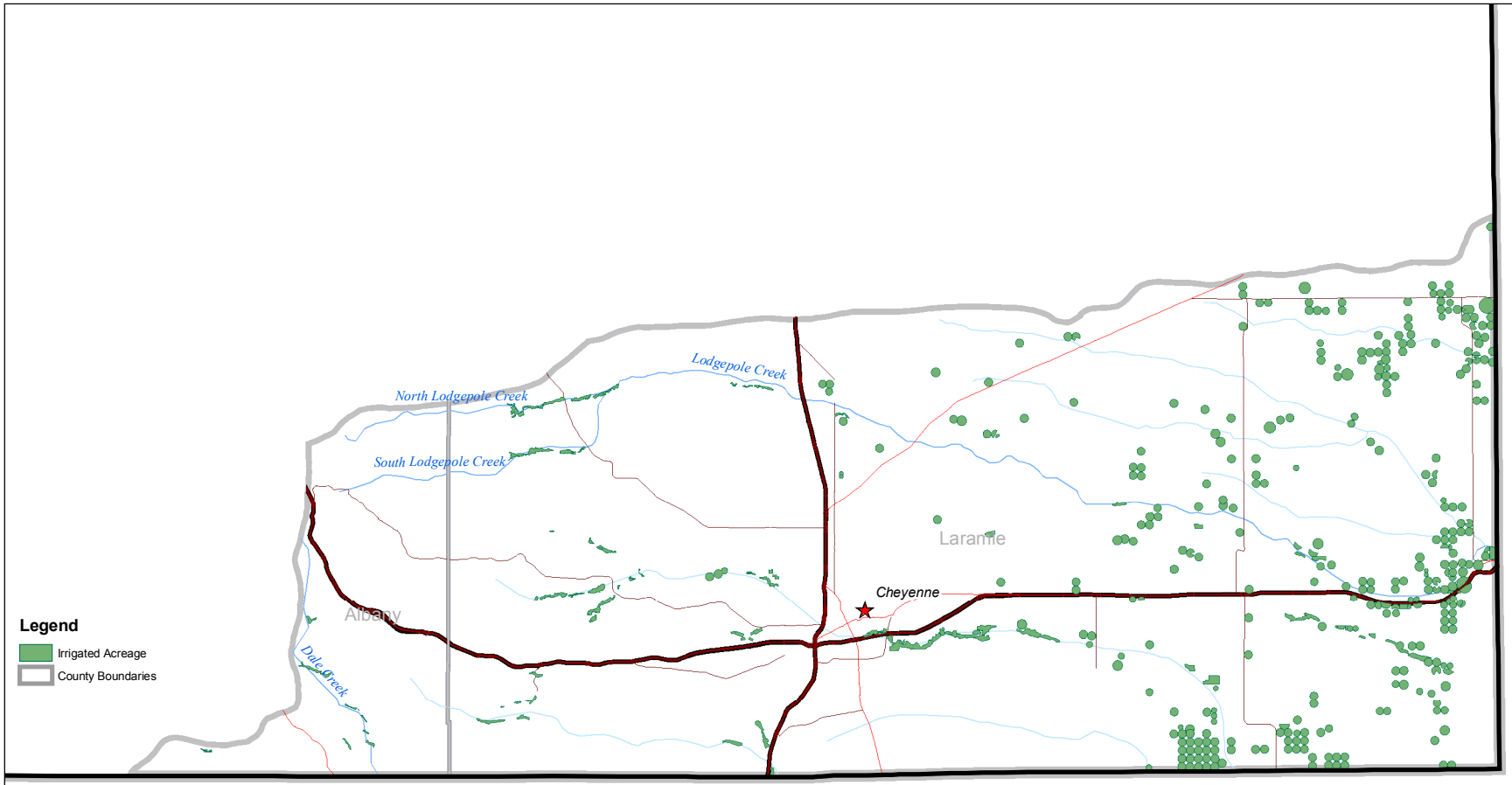


Figure 2.1.4.15
Irrigated Areas
South Platte Subbasin
Platte River Basin Water Plan

Trihydro CORPORATION

2.1.4.6.3 Derivation of Subbasin Irrigated Acreages for Each Crop

Table 2.1.4.48 summarizes average 1972 through 2001 harvested, irrigated acres of land organized by crop and by county as obtained from National Agricultural Statistics Service (NASS) and U.S. Agricultural Census data. Table 2.1.4.51 summarizes project Geographical Information System (GIS)-derived irrigated acreages organized by subbasins and counties. Table 2.1.4.52 combines Table 2.1.4.48 National Agricultural Statistics Service (NASS) county-based cropping data with Table 2.1.4.51 project Geographical Information System (GIS)-derived map-based irrigated acreages. Table 2.1.4.52 includes calculation of average 1972 through 2001 study period irrigated, harvested acres for each crop in each subbasin as the product of the percent of each county that is cultivated in each of the crops under consideration and the GIS-derived irrigated acreages for each county in each subbasin. These average irrigated acreages for each crop in each subbasin are located in the right-hand column of Table 2.1.4.52. Crop acreages shown in the right-hand column have been mathematically adjusted. This was done so that the total irrigated acreages shown in the right-hand column equal those shown near each subbasin name at the left side of the table.

Table 2.1.4.52 Summary - Geographical Information System (GIS) -derived irrigated, harvested Platte River Basin lands organized by subbasin and crop

		Albany	Carbon	Converse	Fremont (2)	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	Sweetwater
	Winter wheat	0	0	1	0	1	8	0	3	1	0	0
	Spring wheat	0	0	1	0	0	1	0	2	0	0	0
	Barley	0	0	2	0	2	5	1	6	3	0	1
Percent of each county cultivated in each crop (1)	Oats	0	0	3	0	1	2	4	4	2	0	3
	Dry beans	0	0	1	0	8	5	0	0	5	0	0
	Sugar beets	0	0	0	0	11	2	0	0	5	0	0
	Corn	0	0	1	0	23	5	1	4	8	0	0
	Alfalfa	3	7	53	46	27	30	41	49	33	6	37
	Other hay	52	54	20	23	9	35	24	19	25	65	28
	Irrigated pasture	44	39	19	31	17	6	29	13	19	29	32

Subbasin	Total GIS-derived irrigated acreage	GIS-derived irrigated, harvested area in each county in the subbasin (acres) (3)											Derived total acres per crop	Adjusted total acres per crop
		Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	Sweetwater		
Above Pathfinder	**150,186**	10,230	131,754	56	5,533	0	0	2,347	0	0	266	0		
	Winter wheat	0	0	1	0	0	0	0	0	0	0	0	1	**1**
	Spring wheat	0	0	1	0	0	0	0	0	0	0	0	1	**1**
	Barley	0	0	1	0	0	0	23	0	0	0	0	24	**24**
Derived average acreage of each crop cultivated in each county (4)	Oats	0	0	2	0	0	0	94	0	0	0	0	96	**96**
	Dry beans	0	0	1	0		0	0	0	0	0	0	1	**1**
	Sugar beets	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Corn	0	0	1	0	0	0	23	0	0	0	0	24	**24**
	Alfalfa	307	9223	30	2545	0	0	962	0	0	16	0	13,083	**13,092**
	Other hay	5320	71147	11	1273	0	0	563	0	0	173	0	78,487	**78,539**
	Irrigated pasture	4501	51384	11	1715	0	0	681	0	0	77	0	58,369	**58,408**
												Total:	150,086	**150,186**

Subbasin	Total GIS-derived irrigated acreage	GIS-derived irrigated, harvested area in each county in the subbasin (acres) (3)											Derived total acres per crop	Adjusted total acres per crop
		Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	Sweetwater		
Pathfinder to Guernsey	**90,028**	488	0	45,001	0	0	0	34,750	0	9,789	0	0		
	Winter wheat	0	0	450	0	0	0	0	0	98	0	0	548	**545**
	Spring wheat	0	0	450	0	0	0	0	0	0	0	0	450	**447**
	Barley	0	0	900	0	0	0	348	0	294	0	0	1,542	**1,533**
Derived average acreage of each crop cultivated in each county (4)	Oats	0	0	1350	0	0	0	1390	0	196	0	0	2,936	**2,918**
	Dry beans	0	0	450	0	0	0	0	0	489	0	0	939	**933**
	Sugar beets	0	0	0	0	0	0	0	0	489	0	0	489	**486**
	Corn	0	0	450	0	0	0	348	0	783	0	0	1,581	**1,571**
	Alfalfa	15	0	23851	0	0	0	14248	0	3230	0	0	41,344	**41,096**
	Other hay	254	0	9000	0	0	0	8340	0	2447	0	0	20,041	**19,920**
	Irrigated pasture	215	0	8550	0	0	0	10078	0	1860	0	0	20,703	**20,579**
												Total (5):	90,573	**90,028**

Subbasin	Total GIS-derived irrigated acreage	GIS-derived irrigated, harvested area in each county in the subbasin (acres) (3)											Derived total acres per crop	Adjusted total acres per crop
		Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	Sweetwater		
Guernsey to State Line	**88,034**	0	0	0	0	87,988	0	0	46	0	0	0		
	Winter wheat	0	0	0	0	880	0	0	1	0	0	0	881	**890**
	Spring wheat	0	0	0	0	0	0	0	1	0	0	0	1	**1**
	Barley	0	0	0	0	1760	0	0	3	0	0	0	1,763	**1,781**
Derived average acreage of each crop cultivated in each county (4)	Oats	0	0	0	0	880	0	0	2	0	0	0	882	**891**
	Dry beans	0	0	0	0	7039	0	0	0	0	0	0	7,039	**7,110**
	Sugar beets	0	0	0	0	9679	0	0	0	0	0	0	9,679	**9,777**
	Corn	0	0	0	0	20237	0	0	2	0	0	0	20,239	**20,442**
	Alfalfa	0	0	0	0	23757	0	0	23	0	0	0	23,780	**24,019**
	Other hay	0	0	0	0	7919	0	0	9	0	0	0	7,928	**8,008**
	Irrigated pasture	0	0	0	0	14958	0	0	6	0	0	0	14,964	**15,115**
												Total:	87,156	**88,034**

Table 2.1.4.52 Summary - Geographical Information System (GIS) -derived irrigated, harvested Platte River Basin lands organized by subbasin, crop, and county (cont)

Subbasin	Total GIS-derived irrigated acreage	GIS-derived irrigated, harvested area in each county in the subbasin (acres) (3)											Derived total acres per crop	Adjusted total acres per crop
		Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	Sweetwater		
Upper Laramie	**92,186**	89,868	2,318	0	0	0	0	0	0	0	0	0		
Derived average acreage of each crop cultivated in each county (4)	Winter wheat	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Spring wheat	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Barley	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Oats	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Dry beans	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Sugar beets	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Corn	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Alfalfa	2696	162	0	0	0	0	0	0	0	0	0	2,858	**2,886**
	Other hay	46731	1252	0	0	0	0	0	0	0	0	0	47,983	**48,456**
	Irrigated pasture	39542	904	0	0	0	0	0	0	0	0	0	40,446	**40,844**
												Total:	91,287	**92,186**

Subbasin	Total GIS-derived irrigated acreage	GIS-derived irrigated, harvested area in each county in the subbasin (acres) (3)											Derived total acres per crop	Adjusted total acres per crop
		Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	Sweetwater		
Lower Laramie	**86,380**	7,662	0	0	0	3,666	2,578	0	0	72,474	0	0		
Derived average acreage of each crop cultivated in each county (4)	Winter wheat	0	0	0	0	37	206	0	0	725	0	0	968	**961**
	Spring wheat	0	0	0	0	0	26	0	0	0	0	0	26	**26**
	Barley	0	0	0	0	73	129	0	0	2174	0	0	2,376	**2,360**
	Oats	0	0	0	0	37	52	0	0	1449	0	0	1,538	**1,528**
	Dry beans	0	0	0	0	293	129	0	0	3624	0	0	4,046	**4,019**
	Sugar beets	0	0	0	0	403	52	0	0	3624	0	0	4,079	**4,052**
	Corn	0	0	0	0	843	129	0	0	5798	0	0	6,770	**6,724**
	Alfalfa	230	0	0	0	990	773	0	0	23916	0	0	25,909	**25,734**
	Other hay	3984	0	0	0	330	902	0	0	18119	0	0	23,335	**23,178**
	Irrigated pasture	3371	0	0	0	623	155	0	0	13770	0	0	17,919	**17,798**
												Total:	86,966	**86,380**

Subbasin	Total GIS-derived irrigated acreage	GIS-derived irrigated, harvested area in each county in the subbasin (acres) (3)											Derived total acres per crop	Adjusted total acres per crop
		Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	Sweetwater		
Horse Creek	**59,521**	37	0	0	0	46,919	12,303	0	0	262	0	0		
Derived average acreage of each crop cultivated in each county (4)	Winter wheat	0	0	0	0	469	984	0	0	3	0	0	1,456	**1,471**
	Spring wheat	0	0	0	0	0	123	0	0	0	0	0	123	**124**
	Barley	0	0	0	0	938	615	0	0	8	0	0	1,561	**1,577**
	Oats	0	0	0	0	469	246	0	0	5	0	0	720	**727**
	Dry beans	0	0	0	0	3754	615	0	0	13	0	0	4,382	**4,426**
	Sugar beets	0	0	0	0	5161	246	0	0	13	0	0	5,420	**5,474**
	Corn	0	0	0	0	10791	615	0	0	21	0	0	11,427	**11,542**
	Alfalfa	1	0	0	0	12668	3691	0	0	86	0	0	16,446	**16,611**
	Other hay	19	0	0	0	4223	4306	0	0	66	0	0	8,614	**8,701**
	Irrigated pasture	16	0	0	0	7976	738	0	0	50	0	0	8,780	**8,868**
												Total:	58,929	**59,521**

Table 2.1.4.52 Summary - Geographical Information System (GIS) -derived irrigated, harvested Platte River Basin lands organized by subbasin, crop, and county (cont)

Subbasin	Total GIS-derived irrigated acreage	GIS-derived irrigated, harvested area in each county in the subbasin (acres) (3)											Derived total acres per crop	Adjusted total acres per crop
		Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	Sweetwater		
South Platte	45,454	377	0	0	0	0	45,077	0	0	0	0	0		
Derived average acreage of each crop cultivated in each county (4)	Winter wheat	0	0	0	0	0	3606	0	0	0	0	0	3,606	**3,642**
	Spring wheat	0	0	0	0	0	451	0	0	0	0	0	451	**456**
	Barley	0	0	0	0	0	2254	0	0	0	0	0	2,254	**2,277**
	Oats	0	0	0	0	0	902	0	0	0	0	0	902	**911**
	Dry beans	0	0	0	0	0	2254	0	0	0	0	0	2,254	**2,277**
	Sugar beets	0	0	0	0	0	902	0	0	0	0	0	902	**911**
	Corn	0	0	0	0	0	2254	0	0	0	0	0	2,254	**2,277**
	Alfalfa	11	0	0	0	0	13523	0	0	0	0	0	13,534	**13,670**
	Other hay	196	0	0	0	0	15777	0	0	0	0	0	15,973	**16,133**
	Irrigated pasture	166	0	0	0	0	2705	0	0	0	0	0	2,871	**2,900**
												Total:	45,001	**45,454**

Notes:

(1) See Table 2.1.4.48.

(2) Fremont county irrigated acreages have been adjusted to show cultivation of only alfalfa, other hay, and irrigated pasture in the portion of Fremont County that is located within the Above Pathfinder subbasin of the Platte River Basin.

(3) See Table 2.1.4.51.

(4) Derived average acreage of each crop cultivated in each county = (GIS-derived cultivated acreage in each county in the subbasin) x (percent of each county cultivated in each crop)

(5) Total irrigated acreage in the Pathfinder to Guernsey subbasin includes Kendrick Project irrigated acreage; 2001 Supreme Court irrigated acreage for this subbasin does NOT include Kendrick Project irrigated acreage.

2.1.4.7 Adjusting Maximum Crop Evapotranspiration, $ET_{c(max)}$

The next step in the consumptive use calculation methodology addresses "yield based adjustments" of maximum crop evapotranspiration, $ET_{c(max)}$, in order "to account for water use at less than the rates reflected in the K_{co} (grass reference crop coefficient) values" applied during Supreme Court (2001) consumptive use calculations. This process includes derivation of a theoretical "envelope" or "fully watered" yield, $Y_{env(i)}$, for a specific crop during a specific year, in units of quantity of crop per acre. The average actual yield for a crop in a given location during a specific year, Y_i, is also calculated and used in conjunction with $Y_{env(i)}$ and previously calculated maximum crop evapotranspiration, $ET_{C(max)}$ to determine an annual yield-adjusted evapotranspiration rate, $ET_{c(i)}$, in units of inches per month for a specific crop in a specific location. The following equation is taken from Supreme Court (2001):

$ET_{C(i)} = ((Y_i/(ky \times Y_{env(i)}) + 1 - (1/ky)) \times ET_{C(max)}$, where: (Equation 3)

$ET_{C(i)}$ = yield-adjusted evapotranspiration for a specific crop in a specific location during a specific year "i," in units of inches per month,

Y_i = average yield for the specific crop in question during a specific year "i" and in a specific Wyoming location, in units of quantity of crop per acre,

ky = the "crop response function" for the crop under consideration that is unitless and varies between 1.05 and 1.25 depending on the crop under consideration,

$Y_{env(i)}$ = the "fully watered" envelope yield for the specific crop during a specific year "i" and in the specific Wyoming location under consideration, and

$ET_{C(max)}$ = maximum evapotranspiration for the crop in question during the year and in the Wyoming location under consideration, in units of inches per month, as described in section 2.1.4.5. of this technical memorandum.

2.1.4.7.1 Average Crop Yield, Y_i

Average yields for the crops that were considered during this study were determined for each subbasin based on annual National Agricultural Statistical Service (NASS) county crop yield data. For this study, county yield data were used in conjunction with the project Geographical Information System (GIS) to calculate area-weighted annual NASS crop yield values for each crop in each subbasin. These values are shown in tables that are referenced below.

2.1.4.7.2 Envelope Crop Yield, Y_{env}

Supreme Court (2001) developed polynomial equations to reflect historical increases in yield for "fully watered" crops, i.e. "envelope" yields, in the Above Pathfinder and Pathfinder to Guernsey subbasins. This was done:

> by fitting a polynomial equation to three of the highest annual county yield values per decade. The resulting curve of Y_{env} for each crop was then used to determine the individual $Y_{env(i)}$ for individual year's calculations. (Supreme Court, 2001; p. 214)

Supreme Court (2001) goes on to state:

> The polynomial curve approach used for analysis of the historical period (1952 through 1999) successfully describes yield changes during the period of time when all crop yields were increasing. (Supreme Court, 2001, p. 214)

For the Above Pathfinder and Pathfinder to Guernsey subbasins, the Supreme Court (2001) polynomial equations were used to generate envelope yields, $Y_{env(i)}$, for this planning study. These equations were provided for use in this study by Hinckley Consulting, Laramie, Wyoming. Appendix 2.1.4.D includes those equations and graphs of derived Y_{env} values for the 1972 through 2001 basin plan study period.

For the subbasins and crops not addressed by Supreme Court (2001), similar methods and constraints were used to develop Y_{env} equations and values for the 1972 through 2001 study period as follows:

- Graphed Y_{env} curves and polynomial equations that were derived during this study were based, when possible, on three of the highest recorded crop yields during each of the 1972 through 1981, 1982 through 1991, and 1992 through 2001 decades of the 1972 through 2001 study period.
- Since Y_{env} values are intended to represent "fully watered yields," the ratio of the historical yield for a specific crop during a specific year to the $Y_{env(i)}$ value for that crop and year must be less than or equal to 1.0. Thus, as in Supreme Court (2001), basin plan acreage-weighted NASS crop yields, $Y_{(i)}$, in excess of the calculated $Y_{env(i)}$ value are assumed to be anomalies. Where polynomial equations generated during this study provided ratios of $Y_{(i)}$ values to corresponding $Y_{env(i)}$ values greater than 1.0, a ratio of 1.0 was used.

2.1.4.7.3 Crop Response Function, ky

Crop response functions, ky, were adopted without modification from Supreme Court (2001). These functions are shown in Table 2.1.4.53. The same crop response function values were applied regardless of the location within the Platte River Basin for which consumptive use of irrigation water was calculated.

Table 2.1.4.53 Crop response function, ky, values

Crop:	ky value (unitless)
Alfalfa and other hay	1.05
Corn	1.25
Beans, barley, oats, spring wheat, winter wheat, and sugarbeets	1.15

Note: While not shown in Appendix G of the *2001 Modified Platte River Decree*, a ky value of 1.15 for sugar beets was assumed during this study due to the position of this value in the mid-range of ky values for other crops that are addressed in Appendix G.

2.1.4.7.4 Adjusted Crop Evapotranspiration, ET_c – Above Pathfinder Subbasin

Annual crop yields and derived area-weighted annual crop yields for each crop during the 1972 through 2001 study period in the Above Pathfinder subbasin are shown in Table 2.1.4.54. As shown on this table, the Above Pathfinder subbasin consists primarily of portions of Albany and Carbon Counties and very small portions of Fremont and Natrona Counties. These four counties and the portions of the subbasin that they comprise are shown at the top of Table 2.1.4.54. The assumption, based on tabulated NASS yield data, underlying derivation of the area-weighted annual yields for each crop are included near the top of each individual crop yield tabulation. Examples of these assumptions in the Above Pathfinder subbasin are that corn has historically not been irrigated and harvested in the subbasin and that significant subbasin oats production ended after year 1994. This table also shows, below tabulated crop yield data, years and yields that were graphed to derive polynomial equations for determining $Y_{env(C)}$ for each crop in the subbasin or Supreme Court (2001) yield adjustment equations that were used during this study. Above Pathfinder subbasin area-weighted annual yield values during the study period for each crop, the Y_{env} polynomial trend lines, and the resultant Y_{env} polynomial equations are graphed in Figures 2.1.4.16 through 2.1.4.19.

Table 2.1.4.54 Area-weighted crop yields - Above Pathfinder subbasin

	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette
Portion of total Above Pathfinder subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)	0.0680	0.8770	0.0000	0.0370	0.0000	0.0000	0.0160	0.0000	0.0000	0.0020

Crop: alfalfa
Units: tons per acre

Assumption: alfalfa production ongoing through entire 1972 - 2001 period in all counties located partially or entirely within Above Pathfinder subbasin; estimated yield values (in shaded cells) incorporated where actual data is not available

National Agricultural Statistics Service (NASS) crop yield data			County:									Above Pathfinder subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Alfalfa	ton/acre	2.20	1.90	2.03	2.66	3.30	3.00	2.42	2.80	3.30	1.80	1.96
1973	Alfalfa	ton/acre	2.27	1.90	2.30	2.80	3.50	3.10	2.46	2.80	3.17	1.90	1.97
1974	Alfalfa	ton/acre	2.20	1.90	2.20	2.91	3.65	3.60	2.21	2.71	2.80	1.70	1.96
1975	Alfalfa	ton/acre	2.00	2.06	2.30	3.11	3.53	2.80	2.50	2.31	2.85	1.70	2.10
1976	Alfalfa	ton/acre	2.11	1.50	2.40	3.50	3.70	2.51	2.57	2.12	2.60	1.60	1.63
1977	Alfalfa	ton/acre	1.90	1.60	1.90	2.89	3.50	2.80	2.10	1.80	2.30	1.30	1.68
1978	Alfalfa	ton/acre	2.60	1.60	2.10	3.32	3.94	2.50	2.19	2.40	2.40	1.60	1.74
1979	Alfalfa	ton/acre	2.50	2.00	2.20	3.80	3.80	2.90	2.24	2.60	3.30	1.70	2.10
1980	Alfalfa	ton/acre	2.30	2.10	2.00	3.00	3.60	2.90	2.60	2.30	2.84	1.20	2.15
1981	Alfalfa	ton/acre	2.60	2.20	2.20	3.40	4.40	2.80	2.60	2.90	2.90	1.50	2.28
1982	Alfalfa	ton/acre	2.54	2.47	2.03	2.90	3.73	3.35	3.54	2.55	2.50	1.44	2.51
1983	Alfalfa	ton/acre	2.32	2.67	2.24	3.20	4.70	3.50	2.90	2.85	2.87	1.20	2.67
1984	Alfalfa	ton/acre	2.40	2.20	2.00	3.20	4.03	3.40	2.30	3.00	3.10	1.80	2.25
1985	Alfalfa	ton/acre	1.13	2.29	1.64	2.90	3.10	3.23	1.21	2.60	2.81	1.55	2.21
1986	Alfalfa	ton/acre	2.10	1.71	2.24	3.51	4.29	3.90	2.27	3.46	3.22	1.54	1.81
1987	Alfalfa	ton/acre	2.00	1.64	2.00	3.45	4.00	3.13	2.04	2.15	2.78	1.29	1.74
1988	Alfalfa	ton/acre	2.20	2.12	1.65	3.24	4.54	3.67	1.93	2.53	2.63	1.33	2.16
1989	Alfalfa	ton/acre	1.93	2.24	1.83	3.14	4.14	4.44	2.18	1.96	3.00	1.38	2.25
1990	Alfalfa	ton/acre	1.94	1.65	2.36	3.40	4.25	3.50	2.25	2.00	2.97	1.62	1.74
1991	Alfalfa	ton/acre	1.71	2.10	2.40	3.49	4.09	3.50	2.30	2.60	3.90	1.40	2.13
1992	Alfalfa	ton/acre	1.80	2.10	2.00	3.10	3.81	3.70	2.50	2.30	2.80	1.30	2.12
1993	Alfalfa	ton/acre	2.30	2.10	2.70	3.42	4.50	3.60	2.80	3.40	3.50	1.40	2.17
1994	Alfalfa	ton/acre	2.10	2.00	2.10	3.13	4.20	4.09	2.36	3.40	3.50	1.70	2.05
1995	Alfalfa	ton/acre	1.44	2.44	2.85	3.43	4.89	3.88	2.44	3.33	3.42	1.50	2.41
1996	Alfalfa	ton/acre	1.87	2.15	2.39	3.31	4.46	3.61	2.48	2.40	3.48	1.46	2.18
1997	Alfalfa	ton/acre	1.90	2.16	2.60	4.00	4.52	4.11	3.10	2.83	4.12	1.93	2.22
1998	Alfalfa	ton/acre	2.02	2.17	2.20	3.46	4.40	4.00	2.64	3.33	4.01	1.60	2.21
1999	Alfalfa	ton/acre	2.10	2.18	2.64	3.47	4.52	3.86	2.60	3.80	3.83	1.64	2.23
2000	Alfalfa	ton/acre	1.87	2.00	1.97	3.53	4.31	4.06	2.65	3.33	3.30	1.63	2.06
2001	Alfalfa	ton/acre	1.74	2.00	2.40	3.55	4.40	3.58	2.63	3.75	3.40	1.65	2.05

Derivation of Y_{env} equation

Derived $Y_{env(ALFALFA)}$ polynomial equation: $y = -0.0004x^2 + 0.0779x - 1.1168$ (from 2001 Mod Dec)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.54 Area-weighted crop yields - Above Pathfinder subbasin (cont)

Crop: barley

Units: bushels per acre

Assumption: significant barley production data for Albany and Carbon Counties, the two counties comprising most of the subbasin ends in 1991; assume no significant subbasin barley production after 1991; use Carbon County yields 1972 through 1976; weighted average of Carbon and Albany County yields, 1977 through 1991

National Agricultural Statistics Service (NASS) crop yield data			County:										Above Pathfinder subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Barley	bu/acre		50.00	51.00	73.00	56.00	67.00	50.00	51.00	66.00	46.00	50.00
1973	Barley	bu/acre		47.00	46.93	48.00	56.00	63.00	46.20	58.00	66.00	45.00	47.00
1974	Barley	bu/acre		52.00	39.00	62.00	60.53	53.09	58.00	42.47	60.43		52.00
1975	Barley	bu/acre		40.00	40.00	79.89	63.00	58.73	50.00	65.00	58.00		40.00
1976	Barley	bu/acre		60.00	50.00	79.00	56.00	58.94	70.00	50.00	50.00		60.00
1977	Barley	bu/acre	49.00	55.00	26.00	68.00	44.00	39.00	49.00	32.00	30.00		54.57
1978	Barley	bu/acre	62.00	70.00	32.00	77.00	62.00	61.00	60.00	42.00	37.00		69.42
1979	Barley	bu/acre	32.00	38.00	31.00	70.00	50.00	51.00		51.00	54.00		37.57
1980	Barley	bu/acre	43.60	60.00	53.11	79.79	53.47	49.76	34.00	42.55	49.53		58.82
1981	Barley	bu/acre	53.63	53.50	44.63	79.54	45.93	48.89		50.00	53.85		53.51
1982	Barley	bu/acre	65.00	65.00	55.00	63.40	57.06	56.28		55.00	62.00		65.00
1983	Barley	bu/acre	50.00	60.00	66.50	77.35	69.58	71.45	65.00	50.00	48.88		59.28
1984	Barley	bu/acre	50.00	70.00	66.00	65.00	70.00	70.00	64.00	51.00	54.00		68.56
1985	Barley	bu/acre	48.00	60.60	68.10	68.00	66.00	78.00	55.00	51.00	54.00		59.69
1986	Barley	bu/acre	50.00	73.29	66.33	77.49	68.46	74.29	57.00	65.00	69.00		71.61
1987	Barley	bu/acre	50.00	65.00	44.82	76.47	47.00	77.24	52.00	70.00	55.00		63.92
1988	Barley	bu/acre	60.00	70.00	33.00	51.88	45.00	41.48	46.00	42.00	41.00		69.28
1989	Barley	bu/acre	55.00	65.00	53.33	73.00	59.82	63.80	50.00	57.50	64.15		64.28
1990	Barley	bu/acre	60.00	70.00	55.00	73.03	62.50	67.76	45.00	60.50	66.44		69.28
1991	Barley	bu/acre	70.00	65.00	62.00	82.40	70.47	74.59	65.00	69.00	68.00		65.36
1992	Barley	bu/acre			66.00	83.20	70.00	75.00	81.00	61.00	60.00		
1993	Barley	bu/acre			65.00	101.80	65.00	68.33	55.00	70.00	67.50		
1994	Barley	bu/acre			55.00	70.00	69.00	66.00	75.00	76.00	36.00		
1995	Barley	bu/acre			86.00	103.00	83.00	70.34			69.00		
1996	Barley	bu/acre				93.36	75.91	70.85			81.03		
1997	Barley	bu/acre				87.00	57.00	80.09	70.00		86.00		
1998	Barley	bu/acre				85.33			82.86		101.05		
1999	Barley	bu/acre				96.51	78.80						
2000	Barley	bu/acre				75.00					100.00		
2001	Barley	bu/acre				76.00							

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	50.00
	1974	2	52.00
	1976	4	60.00
	1980	8	58.82
	1982	10	65.00
	1984	12	68.56
	1986	14	71.61
	1988	16	69.28

Derived $Y_{env(BARLEY)}$ polynomial equation: $y = -0.0327x^2 + 1.9082x + 48.022$ (see Figure 2.1.4.16.)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.54 Area-weighted crop yields - Above Pathfinder subbasin (cont)

Crop: corn
Units: bushels per acre

Assumption: corn production records for Albany and Carbon counties, which comprise most of the Above Pathfinder subbasin, indicate production in Carbon County during 1972 - 1978 period; assume that Above Pathfinder corn production is not significant during the entire study period; do not generate estimated yield values (in shaded cells) where actual data is not available and do not generate area-weighted basin-wide yield values

National Agricultural Statistics Service (NASS) crop yield data			County:									Above Pathfinder subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Corn	bu/acre		70.00	57.00	80.00	94.00	78.00	70.00		94.00		
1973	Corn	bu/acre	71.00	74.00		84.78	89.22	97.00	73.00		116.00		
1974	Corn	bu/acre		78.00		50.50	79.50	101.25	50.00		77.00		
1975	Corn	bu/acre		63.00		59.00	85.07	66.00	55.00		96.00		
1976	Corn	bu/acre		55.00		85.00	93.08	94.00	55.00		98.00		
1977	Corn	bu/acre		55.00		86.00	94.00	95.00	55.00		73.80		
1978	Corn	bu/acre		61.00	91.00	85.40	89.50	66.00	61.00	88.00	73.00		
1979	Corn	bu/acre			80.00	86.00	89.83	75.00	75.00	70.00	88.00		
1980	Corn	bu/acre			90.00	90.00	102.90	95.00	85.00	93.00	90.00		
1981	Corn	bu/acre			84.00	84.00	113.53	90.00	74.00	92.00	112.00		
1982	Corn	bu/acre			84.00	98.00	111.00	95.00	87.00	88.00	104.94		
1983	Corn	bu/acre			85.00	94.00	110.55	101.00	78.00	100.00	95.00		
1984	Corn	bu/acre				90.00	105.39	97.00	65.00	99.00	90.00		
1985	Corn	bu/acre				91.00	100.00	94.00	60.00	90.00	92.32		
1986	Corn	bu/acre				104.00	119.70	119.00	76.00	102.00	108.00		
1987	Corn	bu/acre			92.00	91.00	117.75	112.11	80.00	95.00	97.00		
1988	Corn	bu/acre			126.00	95.00	130.78	127.00	90.00	108.00	104.00		
1989	Corn	bu/acre			91.00	92.08	96.91	102.00	85.00	90.00	98.14		
1990	Corn	bu/acre			120.00	92.00	127.99	123.00	90.00	113.33	111.80		
1991	Corn	bu/acre			99.00	95.00	125.99	109.04	94.00	66.00	106.00		
1992	Corn	bu/acre			97.00	78.00	101.81	102.00	38.00		92.00		
1993	Corn	bu/acre			80.00	88.50	82.00	65.50			80.00		
1994	Corn	bu/acre				111.00	130.39	111.72			103.00		
1995	Corn	bu/acre				108.00					80.00		
1996	Corn	bu/acre				105.00	130.87		103.33		101.90		
1997	Corn	bu/acre				126.07	140.00	135.00			132.00		
1998	Corn	bu/acre					136.99	127.94			138.26		
1999	Corn	bu/acre				101.43	122.17	120.00			135.00		
2000	Corn	bu/acre				112.86	136.63	142.86			130.81		
2001	Corn	bu/acre						135.00			112.94		

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.54 Area-weighted crop yields - Above Pathfinder subbasin (cont)

Crop: dry beans

Units: hundred pounds per acre (cwt/acre)

Assumption: dry beans production records for Albany and Carbon counties, which comprise most of the Above Pathfinder subbasin, indicate no significant production of this crop in the Above Pathfinder subbasin during the study period; do not generate estimated yield values (in shaded cells) where actual data is not available and do not generate area-weighted basin-wide yield values

National Agricultural Statistics Service (NASS) crop yield data			County:										Above Pathfinder subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Dry beans	cwt/acre			17.75	18.80	19.70	18.30			19.50		
1973	Dry beans	cwt/acre			17.50	17.50	18.20	18.00			17.50		
1974	Dry beans	cwt/acre			17.20	17.80	19.48	19.90			19.90		
1975	Dry beans	cwt/acre			15.40	18.30	16.84	17.60			17.60		
1976	Dry beans	cwt/acre			16.00	19.30	17.80	16.00			16.50		
1977	Dry beans	cwt/acre			14.23	19.50	17.90	17.60			14.00		
1978	Dry beans	cwt/acre			15.80	16.60	16.29	14.30			15.80		
1979	Dry beans	cwt/acre			19.00	21.00	19.11	18.00			18.00		
1980	Dry beans	cwt/acre			18.80	19.00	21.70	20.70			18.43		
1981	Dry beans	cwt/acre			17.00	21.30	22.04	20.60			22.10		
1982	Dry beans	cwt/acre			15.00	19.70	18.07	16.60			17.00		
1983	Dry beans	cwt/acre			14.60	19.60	18.80	16.70			18.50		
1984	Dry beans	cwt/acre			19.00	19.80	22.20	20.00			19.46		
1985	Dry beans	cwt/acre			18.00	15.10	19.00	18.80			14.40		
1986	Dry beans	cwt/acre			18.00	19.50	18.65	17.80			16.35		
1987	Dry beans	cwt/acre			19.00	21.40	19.20	18.56			17.00		
1988	Dry beans	cwt/acre			20.00	17.42	21.30	17.53			18.50		
1989	Dry beans	cwt/acre			17.00	19.00	19.18	20.70			18.61		
1990	Dry beans	cwt/acre			17.50	17.00	21.03	20.79			19.00		
1991	Dry beans	cwt/acre			17.00	20.00	19.85	17.87			18.93		
1992	Dry beans	cwt/acre				20.00	18.83	15.56			15.67		
1993	Dry beans	cwt/acre				13.40	14.58	14.79			14.57		
1994	Dry beans	cwt/acre				18.17	20.45	20.60			16.00		
1995	Dry beans	cwt/acre				17.78	17.96	18.24			17.70		
1996	Dry beans	cwt/acre				26.34	23.99	22.20			16.94		
1997	Dry beans	cwt/acre				23.52	21.91	23.64			20.59		
1998	Dry beans	cwt/acre				22.41	22.63	24.25			22.58		
1999	Dry beans	cwt/acre				19.14	21.02	23.24			18.63		
2000	Dry beans	cwt/acre				21.05	22.86	24.68			18.12		
2001	Dry beans	cwt/acre				18.56	20.81	26.26			18.85		

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.54 Area-weighted crop yields - Above Pathfinder subbasin (cont)

Crop: oats
Units: bushels per acre

Assumption: significant oats production data for the two counties comprising most of the subbasin, Albany and Carbon Counties, ends in early 1990s; estimate Albany oats production for 1992 through 1994; assume no significant subbasin oats production after 1994

National Agricultural Statistics Service (NASS) crop yield data			County:										Above Pathfinder subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Oats	bu/acre	50.00	61.00	66.00	65.67	64.00	54.33	57.00	66.00	60.00	55.00	60.35
1973	Oats	bu/acre	50.00	50.00	52.20	53.21	53.00	61.00	50.00	59.00	49.00	50.00	50.12
1974	Oats	bu/acre	39.00	50.00	33.00	50.00	48.00	63.00	43.23	43.00	59.81	60.00	49.16
1975	Oats	bu/acre	52.00	52.00	45.82	60.00	46.00	49.00	50.40	40.00	46.00	44.00	52.25
1976	Oats	bu/acre	56.00	59.00	56.79	58.00	54.00	63.00	58.00	60.00	55.00	53.00	58.73
1977	Oats	bu/acre	52.00	53.00	30.00	63.62	44.00	34.00	51.85	51.00	42.00	52.00	53.30
1978	Oats	bu/acre	58.50	62.00	75.35	76.00	76.00	76.00	62.00	79.00	77.00	79.00	62.31
1979	Oats	bu/acre	67.00	62.00	43.00	62.00	56.00	48.00	66.18	46.00	39.00	77.50	62.44
1980	Oats	bu/acre	58.00	72.00	48.00	60.00	59.70	69.00	64.00	55.00	59.00	65.00	70.46
1981	Oats	bu/acre	43.00	46.73	49.00	59.03	65.63	67.00	50.00	54.00	58.00	64.00	47.02
1982	Oats	bu/acre	65.50	62.00	70.00	64.60	79.00	79.42	68.00	74.00	59.00	74.00	62.45
1983	Oats	bu/acre	65.00	60.00	58.17	66.23	60.00	64.00	61.00	60.00	51.00	64.00	60.59
1984	Oats	bu/acre	53.00	54.00	52.00	73.00	55.00	64.46	54.00	58.00	46.29	54.00	54.64
1985	Oats	bu/acre	53.00	51.00	59.00	65.65	60.00	59.00	50.44	58.00	47.00	63.00	51.69
1986	Oats	bu/acre	65.00	71.00	60.00	74.00	63.00	75.00	53.00	63.00	77.00	60.00	70.39
1987	Oats	bu/acre	61.00	68.00	48.36	63.33	80.21	85.27	51.00	71.00	69.00	56.00	67.06
1988	Oats	bu/acre	44.00	46.00	37.50	62.00	44.44	34.50	34.00	39.00	33.00	52.00	46.28
1989	Oats	bu/acre	60.00	62.00	42.50	62.00	47.00	63.00	52.00	50.00	50.00	61.00	61.70
1990	Oats	bu/acre	45.00	50.00	56.60	63.00	55.50	56.31	47.00	50.00	55.00	50.00	50.09
1991	Oats	bu/acre	45.00	56.00	72.00	71.00	69.00	60.00	53.00	50.00	85.00	56.00	55.76
1992	Oats	bu/acre	51.00	55.00	55.00	74.40	72.00	64.00	58.00	40.00	55.00	72.00	55.53
1993	Oats	bu/acre	49.00	65.00	59.00	86.00	86.00	82.75	72.50	66.00	77.00	65.00	64.81
1994	Oats	bu/acre	50.00	45.00	46.00	84.00	77.00	70.00	50.00	62.00	62.00	55.00	46.88
1995	Oats	bu/acre				94.12			91.67		73.64		
1996	Oats	bu/acre				80.69		46.67	44.23	70.00			
1997	Oats	bu/acre			51.82	85.42	71.43	75.00	72.22	80.00	64.29		
1998	Oats	bu/acre				88.89		71.67	75.00		50.00		
1999	Oats	bu/acre			55.00	94.29	70.00		78.00				
2000	Oats	bu/acre				108.89							
2001	Oats	bu/acre				76.67	67.00	75.00			96.67		

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1973	1	50.12
	1976	4	58.73
	1982	10	62.45
	1983	11	60.59
	1987	15	67.06

Derived $Y_{env(OATS)}$ polynomial equation: $y = -0.0319x^2 + 1.5893x + 48.673$ (see Figure 2.1.4.17.)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.54 Area-weighted crop yields - Above Pathfinder subbasin (cont)

Crop: other hay (not including alfalfa)
Units: tons per acre

Assumption: other hay production ongoing through entire 1972 - 2002 period in all counties located partially or entirely within Above Pathfinder subbasin; estimated yield values (in shaded cells) incorporated where actual data are not available

National Agricultural Statistics Service (NASS) crop yield data			County:										Above Pathfinder subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Other hay	ton/acre	1.10	1.11	1.16	1.50	1.20	1.50	1.00	1.10	1.30	1.17	1.12
1973	Other hay	ton/acre	1.00	1.13	1.20	1.70	1.20	1.30	1.60	1.00	1.10	1.45	1.15
1974	Other hay	ton/acre	1.00	1.19	1.40	1.53	1.20	1.40	0.80	1.10	1.20	1.23	1.18
1975	Other hay	ton/acre	0.84	1.10	0.90	1.46	1.50	1.04	1.30	0.90	1.10	1.05	1.10
1976	Other hay	ton/acre	1.01	1.20	1.10	1.56	1.20	0.70	1.00	1.00	0.87	1.27	1.20
1977	Other hay	ton/acre	0.90	0.98	1.00	1.24	1.13	0.70	0.80	0.90	1.00	1.00	0.98
1978	Other hay	ton/acre	1.10	1.30	0.90	1.80	1.60	0.90	1.30	1.10	1.20	1.14	1.30
1979	Other hay	ton/acre	1.20	1.40	0.90	2.24	1.20	1.37	1.20	1.20	1.10	1.32	1.41
1980	Other hay	ton/acre	0.90	1.30	1.39	1.51	1.10	1.10	0.90	0.90	1.40	1.11	1.27
1981	Other hay	ton/acre	1.00	1.40	1.40	1.63	1.50	1.20	1.20	1.40	1.47	1.18	1.38
1982	Other hay	ton/acre	1.16	1.59	1.70	1.60	1.86	1.03	2.40	1.61	1.10	1.16	1.57
1983	Other hay	ton/acre	1.31	1.62	2.20	2.20	1.50	1.40	1.85	1.10	1.55	1.28	1.62
1984	Other hay	ton/acre	1.20	1.60	1.40	2.20	1.80	1.10	1.20	1.40	1.40	1.20	1.59
1985	Other hay	ton/acre	1.06	1.66	1.27	1.91	1.47	1.38	1.24	1.00	1.37	1.03	1.62
1986	Other hay	ton/acre	1.24	1.37	0.90	1.73	2.02	1.64	1.90	1.90	1.61	1.18	1.38
1987	Other hay	ton/acre	1.44	1.57	1.36	2.30	1.48	1.99	1.67	1.90	1.15	0.84	1.59
1988	Other hay	ton/acre	1.37	1.36	0.75	0.97	1.41	1.16	1.55	1.60	1.34	0.80	1.35
1989	Other hay	ton/acre	0.68	0.87	0.70	1.29	1.36	1.31	0.78	1.90	1.11	0.78	0.87
1990	Other hay	ton/acre	1.10	1.27	1.00	1.56	1.55	1.53	1.01	1.87	1.60	0.99	1.26
1991	Other hay	ton/acre	1.90	1.34	1.60	1.79	1.83	1.70	1.70	1.40	1.70	1.09	1.40
1992	Other hay	ton/acre	1.11	1.30	1.30	1.79	1.40	1.29	0.90	0.90	1.00	0.89	1.30
1993	Other hay	ton/acre	1.30	1.80	1.90	2.10	2.10	2.10	1.80	1.30	1.20	1.10	1.78
1994	Other hay	ton/acre	1.20	1.42	1.20	1.70	1.50	1.90	0.90	1.40	1.00	0.86	1.41
1995	Other hay	ton/acre	1.10	1.66	1.70	1.80	1.80	1.71	1.26	1.40	1.70	1.23	1.62
1996	Other hay	ton/acre	1.32	1.50	1.56	1.84	1.66	1.67	1.31	0.90	1.38	1.03	1.50
1997	Other hay	ton/acre	1.21	1.54	1.81	2.17	2.00	1.58	1.60	2.00	2.11	1.10	1.54
1998	Other hay	ton/acre	1.14	1.58	1.62	1.92	2.20	1.70	1.37	2.33	1.29	1.06	1.56
1999	Other hay	ton/acre	1.50	1.54	1.90	1.89	1.67	1.50	1.29	1.13	1.90	1.18	1.55
2000	Other hay	ton/acre	1.40	1.56	1.67	1.92	1.50	1.58	1.37	1.00	1.00	1.09	1.56
2001	Other hay	ton/acre	1.03	1.13	1.71	1.91	2.25	1.31	1.39	1.00	1.31	1.01	1.16

Derivation of Y_{env} equation

Derived $Y_{env(OTHER\ HAY)}$ polynomial equation: $y = 0.00009x^2 + 0.0083x + 0.1592$ (from 2001 Mod Dec)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.54 Area-weighted crop yields - Above Pathfinder subbasin (cont)

Crop: spring wheat
Units: tons per acre

Assumption: spring wheat production records for Albany and Carbon counties, which comprise most of the Above Pathfinder subbasin, do not exist for Albany County and end for Carbon County after 1989; assume that Above Pathfinder spring wheat production after 1989 decreased to insignificance; assume subbasin yield 1972 - 1989 equals Carbon County yield

National Agricultural Statistics Service (NASS) crop yield data			County:									Above Pathfinder subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Spring wheat	bu/acre		40.00	35.00	47.00	35.00		36.00		34.00		40.00
1973	Spring wheat	bu/acre		34.00	33.67	44.00	33.00		30.00	33.00	33.00		34.00
1974	Spring wheat	bu/acre		36.00	35.33	50.00	33.00	41.00	28.00	35.00	37.00		36.00
1975	Spring wheat	bu/acre		34.00	40.00	37.00	42.00	35.00	27.00	38.00	35.00		34.00
1976	Spring wheat	bu/acre		35.00	43.00	45.00	40.00	35.00	27.00	39.00	33.00		35.00
1977	Spring wheat	bu/acre		34.00	38.00	47.00	39.00	33.00	30.00	36.00	31.00		34.00
1978	Spring wheat	bu/acre		36.00	32.00	55.00	34.00	33.00	32.00	34.00	32.00		36.00
1979	Spring wheat	bu/acre		38.00	49.40	61.00	42.00	50.00	34.00	45.00	50.00		38.00
1980	Spring wheat	bu/acre		32.00	35.00	41.67	32.00	34.00		33.00	34.00		32.00
1981	Spring wheat	bu/acre		27.00	29.50	34.00	34.00	36.00	25.00	32.00	37.00		27.00
1982	Spring wheat	bu/acre		38.00	37.25	50.00	52.00	58.00	32.00	52.33	56.67		38.00
1983	Spring wheat	bu/acre		40.00	40.00	59.60	54.00	60.00		53.00	60.00		40.00
1984	Spring wheat	bu/acre		60.00	44.00	63.00	55.00	50.00		53.00	45.00		60.00
1985	Spring wheat	bu/acre		49.00	40.00	49.00	40.75	41.00		42.00	38.00		49.00
1986	Spring wheat	bu/acre		44.00	50.00	40.00	63.00	57.50		55.00	53.00		44.00
1987	Spring wheat	bu/acre		36.00	40.00	42.00	34.00	42.00		40.00	38.00		36.00
1988	Spring wheat	bu/acre		37.00	41.00	52.00	55.00	52.00		44.00	41.00		37.00
1989	Spring wheat	bu/acre		43.00	43.00	65.00	46.00	43.00		47.00	47.00		43.00
1990	Spring wheat	bu/acre			30.00	56.00	50.00	47.00			30.00		
1991	Spring wheat	bu/acre						54.00	48.00	50.00			
1992	Spring wheat	bu/acre				65.00	40.00	73.00		36.00			
1993	Spring wheat	bu/acre				89.00		79.00		58.00			
1994	Spring wheat	bu/acre				54.17	41.00	45.00		44.17			
1995	Spring wheat	bu/acre				62.00	67.00	68.46					
1996	Spring wheat	bu/acre				66.67		60.00					
1997	Spring wheat	bu/acre					44.00	58.00			50.00		
1998	Spring wheat	bu/acre											
1999	Spring wheat	bu/acre											
2000	Spring wheat	bu/acre											
2001	Spring wheat	bu/acre											

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1974	2	36.00
	1979	7	38.00
	1983	11	40.00
	1985	13	49.00
	1986	14	44.00

Derived $Y_{env(SPRING\ WHEAT)}$ polynomial equation: $y = 0.0715x^2 - 0.4112x + 36.554$ (see Figure 2.1.4.18.)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.54 Area-weighted crop yields - Above Pathfinder subbasin (cont)

Crop: sugar beets
Units: tons per acre

Assumption: no sugar beet production records for Albany and Carbon counties, which comprise most of the Above Pathfinder subbasin; assume that Above Pathfinder sugar beet production is not significant; do not generate estimated yield values (in shaded cells) where actual data are not available and do not generate area-weighted basin-wide yield values

National Agricultural Statistics Service (NASS) crop yield data			County:										Above Pathfinder subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Sugar beets	ton/acre			14.70	19.90	22.93	15.30			22.80		
1973	Sugar beets	ton/acre			10.29	14.60	19.31	11.50			16.40		
1974	Sugar beets	ton/acre					18.46	15.86			17.76		
1975	Sugar beets	ton/acre					20.20	15.64			17.66		
1976	Sugar beets	ton/acre					20.90	17.81			17.85		
1977	Sugar beets	ton/acre					19.40	20.20			14.80		
1978	Sugar beets	ton/acre					18.61	14.60			16.70		
1979	Sugar beets	ton/acre					18.64	14.60			17.90		
1980	Sugar beets	ton/acre					21.80	20.20					
1981	Sugar beets	ton/acre					25.31	50.00			20.60		
1982	Sugar beets	ton/acre					19.40	22.00			18.30		
1983	Sugar beets	ton/acre					15.78	13.50			12.60		
1984	Sugar beets	ton/acre				13.70	20.87	11.20			15.60		
1985	Sugar beets	ton/acre				17.40	22.80	25.10			19.60		
1986	Sugar beets	ton/acre				18.90	23.41	23.60			19.90		
1987	Sugar beets	ton/acre				16.30	21.50	20.40			17.80		
1988	Sugar beets	ton/acre				19.20	22.00	23.25			19.57		
1989	Sugar beets	ton/acre				21.97	19.07	19.75			17.09		
1990	Sugar beets	ton/acre				20.19	21.00	13.53			19.34		
1991	Sugar beets	ton/acre				21.05	21.47	17.17			16.72		
1992	Sugar beets	ton/acre				20.88	16.97	17.53			16.53		
1993	Sugar beets	ton/acre				19.86	15.63	17.08			17.84		
1994	Sugar beets	ton/acre				16.93	20.56	20.25			20.49		
1995	Sugar beets	ton/acre				20.72	16.34	15.75			13.87		
1996	Sugar beets	ton/acre				20.02	16.88	17.81			17.95		
1997	Sugar beets	ton/acre				22.78	15.69	14.67			16.63		
1998	Sugar beets	ton/acre				21.07	19.37	18.70			17.80		
1999	Sugar beets	ton/acre				21.25	18.40	18.17			18.39		
2000	Sugar beets	ton/acre				21.54	18.70	15.41			19.49		
2001	Sugar beets	ton/acre				18.56	17.71	17.11			19.06		

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.54 Area-weighted crop yields - Above Pathfinder subbasin (cont)

Crop: winter wheat
Units: bushels per acre

Assumption: winter wheat production records for Albany and Carbon counties, which comprise most of the Above Pathfinder subbasin, exist for only one year for Albany County and end for Carbon County after 1994; assume that Above Pathfinder winter wheat production after 1994 decreased to insignificance; estimate Carbon County yields during years before 1994 for which data do not exist; assume subbasin yield 1972 - 1994 equals Carbon County yield

National Agricultural Statistics Service (NASS) crop yield data			County:										Above Pathfinder subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Winter wheat	bu/acre		40.00	40.00	41.00	43.06	42.00		42.00	40.00		40.00
1973	Winter wheat	bu/acre		39.00	38.00	37.00	38.54	37.00		38.00	38.00		39.00
1974	Winter wheat	bu/acre		33.00	36.00	32.00	37.17	36.00		36.00	38.00		33.00
1975	Winter wheat	bu/acre		36.00	38.00	32.00	39.54	36.00		37.00	37.00		36.00
1976	Winter wheat	bu/acre		36.00	32.00	39.00	33.00	33.00		32.00	29.00		36.00
1977	Winter wheat	bu/acre		34.00	25.00	38.00	23.00	26.00		22.00	22.50		34.00
1978	Winter wheat	bu/acre		35.60	34.00		44.00	33.59		33.00	35.00		35.60
1979	Winter wheat	bu/acre		30.00	23.00		35.00	42.00		38.00	34.56		30.00
1980	Winter wheat	bu/acre		34.32	29.00		48.00	33.31		28.00	35.00		34.32
1981	Winter wheat	bu/acre		33.98	32.00		41.00	40.41		33.50	35.00		33.98
1982	Winter wheat	bu/acre		40.00	36.00		51.50	53.00		33.00	39.00		40.00
1983	Winter wheat	bu/acre		38.00	38.00		53.00	54.00		44.00	40.00		38.00
1984	Winter wheat	bu/acre		50.00	40.00	53.00	42.60	59.00		37.00	35.00		50.00
1985	Winter wheat	bu/acre		45.00	35.00	52.00	34.00	38.73		35.00	33.00		45.00
1986	Winter wheat	bu/acre		32.00	38.00	55.00	46.20	60.00		36.00	35.00		32.00
1987	Winter wheat	bu/acre		35.00	37.00	51.00	39.00	56.00		41.00	40.00		35.00
1988	Winter wheat	bu/acre		40.00	39.25	53.00	50.00	54.63		39.00	38.00		40.00
1989	Winter wheat	bu/acre		35.00	36.00	36.00	43.00	46.98		33.00	41.00		35.00
1990	Winter wheat	bu/acre		40.00	40.00	58.00	46.67	65.45		40.00	43.33		40.00
1991	Winter wheat	bu/acre	47.00	40.00	32.50	68.33	55.91	50.32		50.25	45.67		40.00
1992	Winter wheat	bu/acre		43.00	42.00	55.00	46.00	55.59		42.00	47.00		43.00
1993	Winter wheat	bu/acre		50.00	50.00	60.50	52.50	56.96		54.00	55.00		50.00
1994	Winter wheat	bu/acre		50.00		65.00	65.00	42.00		41.00	50.00		50.00
1995	Winter wheat	bu/acre					59.00	80.00		75.00	82.00		
1996	Winter wheat	bu/acre					42.40	54.29			63.64		
1997	Winter wheat	bu/acre					61.21	80.25			56.25		
1998	Winter wheat	bu/acre					72.11	76.92					
1999	Winter wheat	bu/acre					65.00	79.20			60.00		
2000	Winter wheat	bu/acre					60.00	76.92					
2001	Winter wheat	bu/acre					73.33	72.00			50.00		

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1973	1	39.00
	1982	10	40.00
	1985	13	45.00
	1993	21	50.00
	1994	22	50.00

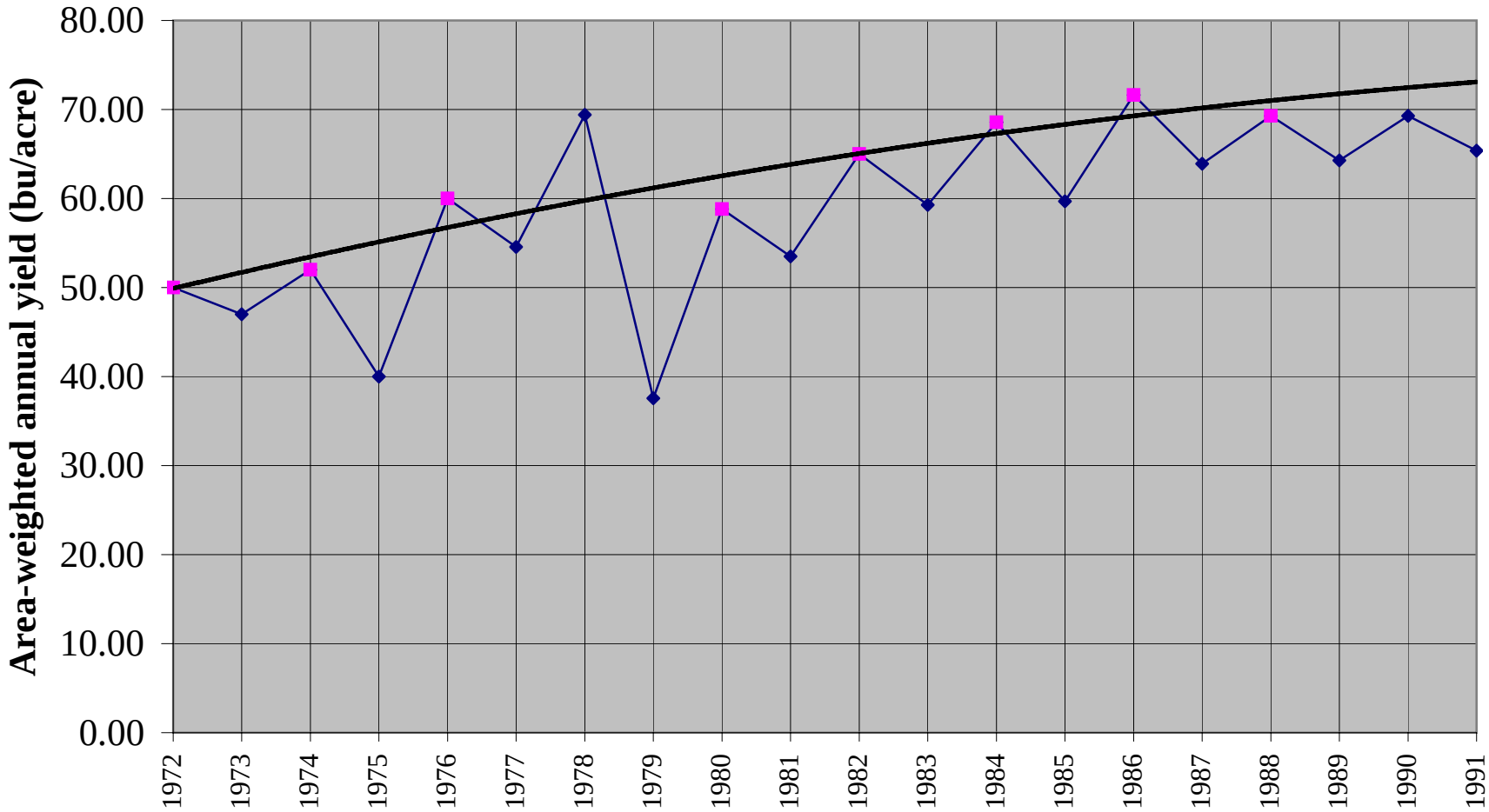
Derived $Y_{env(WINTER\ WHEAT)}$ polynomial equation: $y = 0.0196x^2 + 0.0718x + 38.524$ (see Figure 2.1.4.19.)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Notes:
(1) See Table 2.1.4.51.

Figure 2.1.4.16
Area-weighted annual barley yields and Y_{env} polynomial trend line and equation
Above Pathfinder subbasin



$y = -0.0327x^2 + 1.9082x + 48.022$

Figure 2.1.4.17
Area-weighted annual oats yields and Y_{env} polynomial trend line and equation
Above Pathfinder subbasin

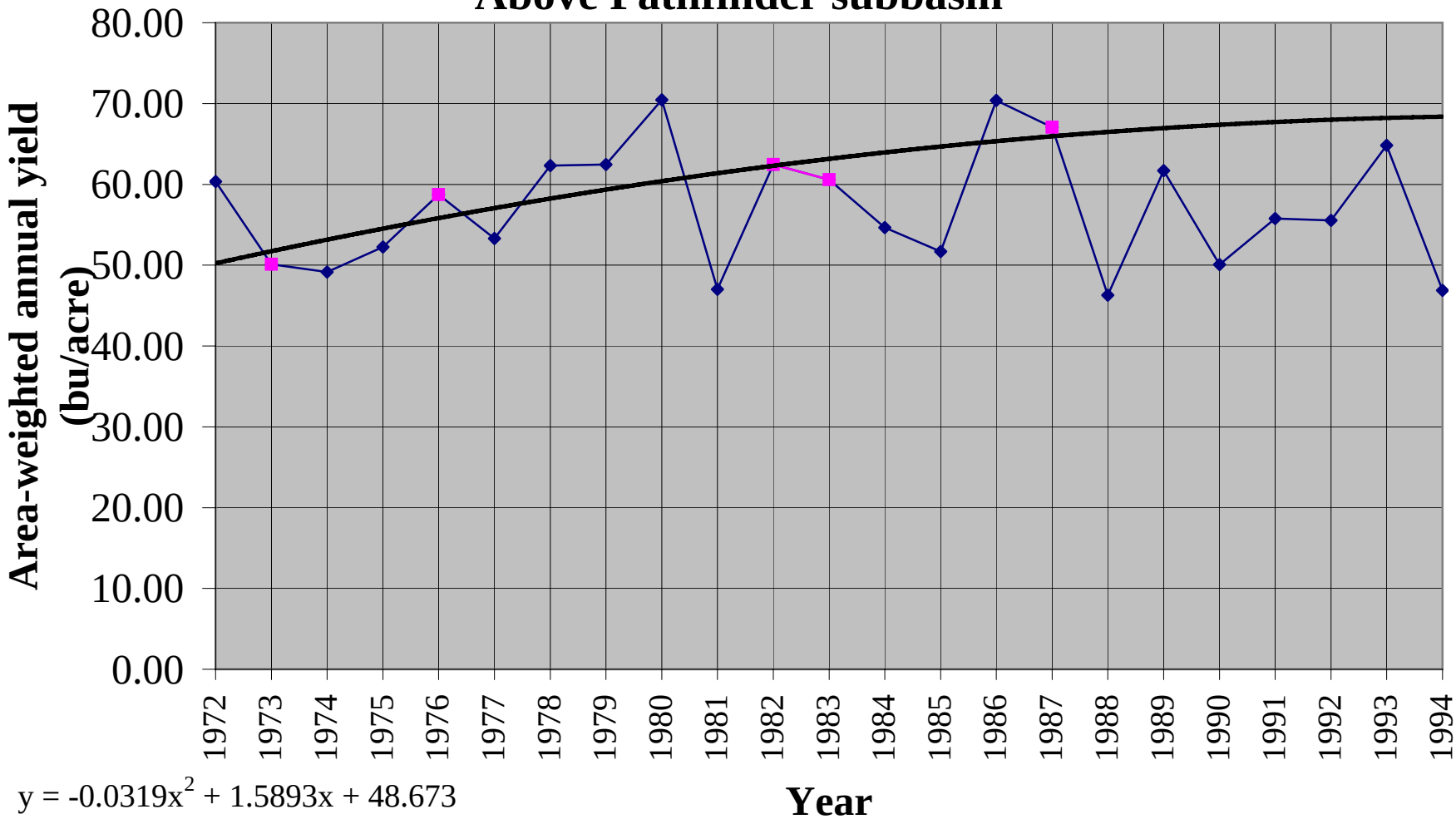
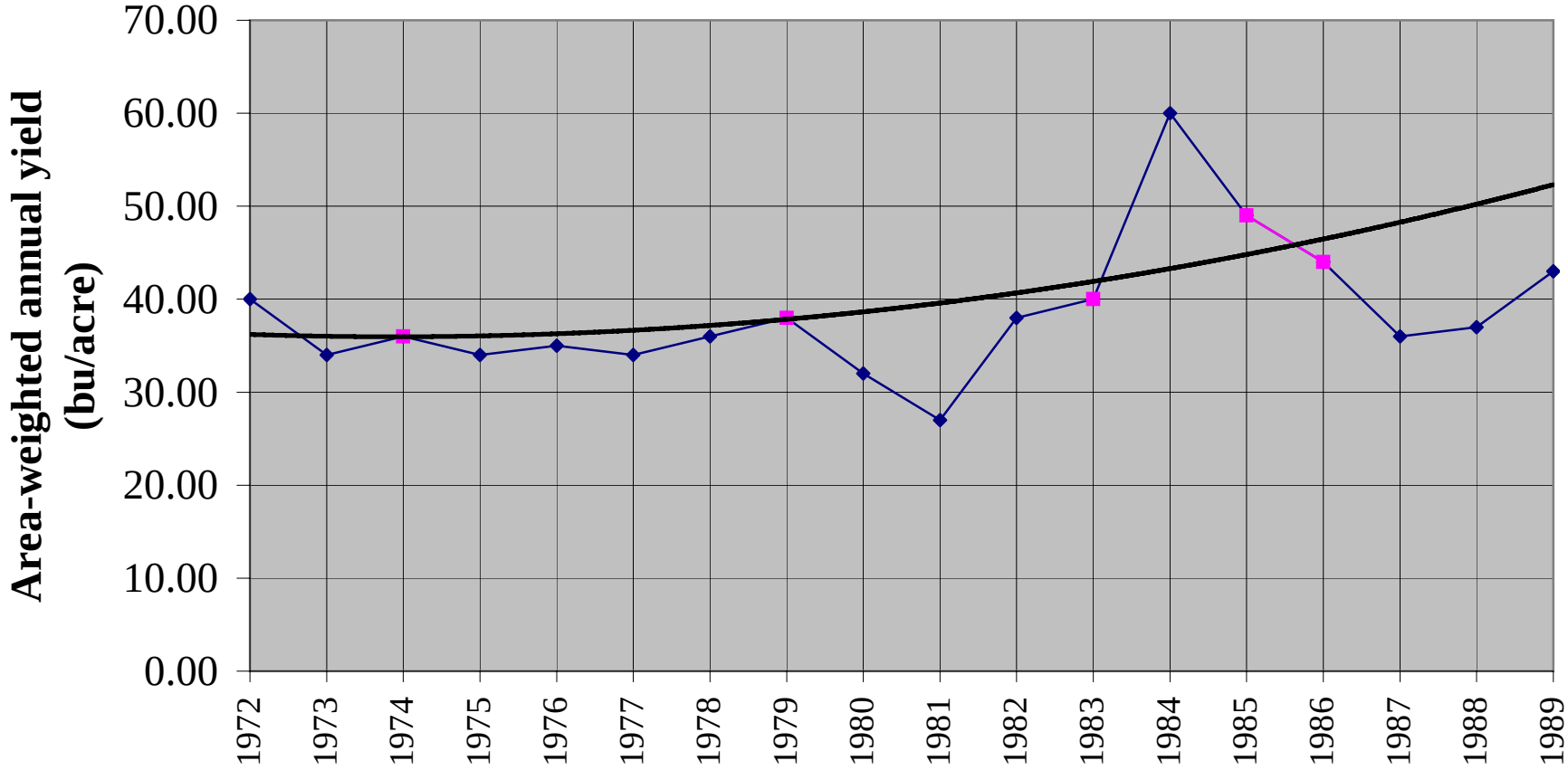
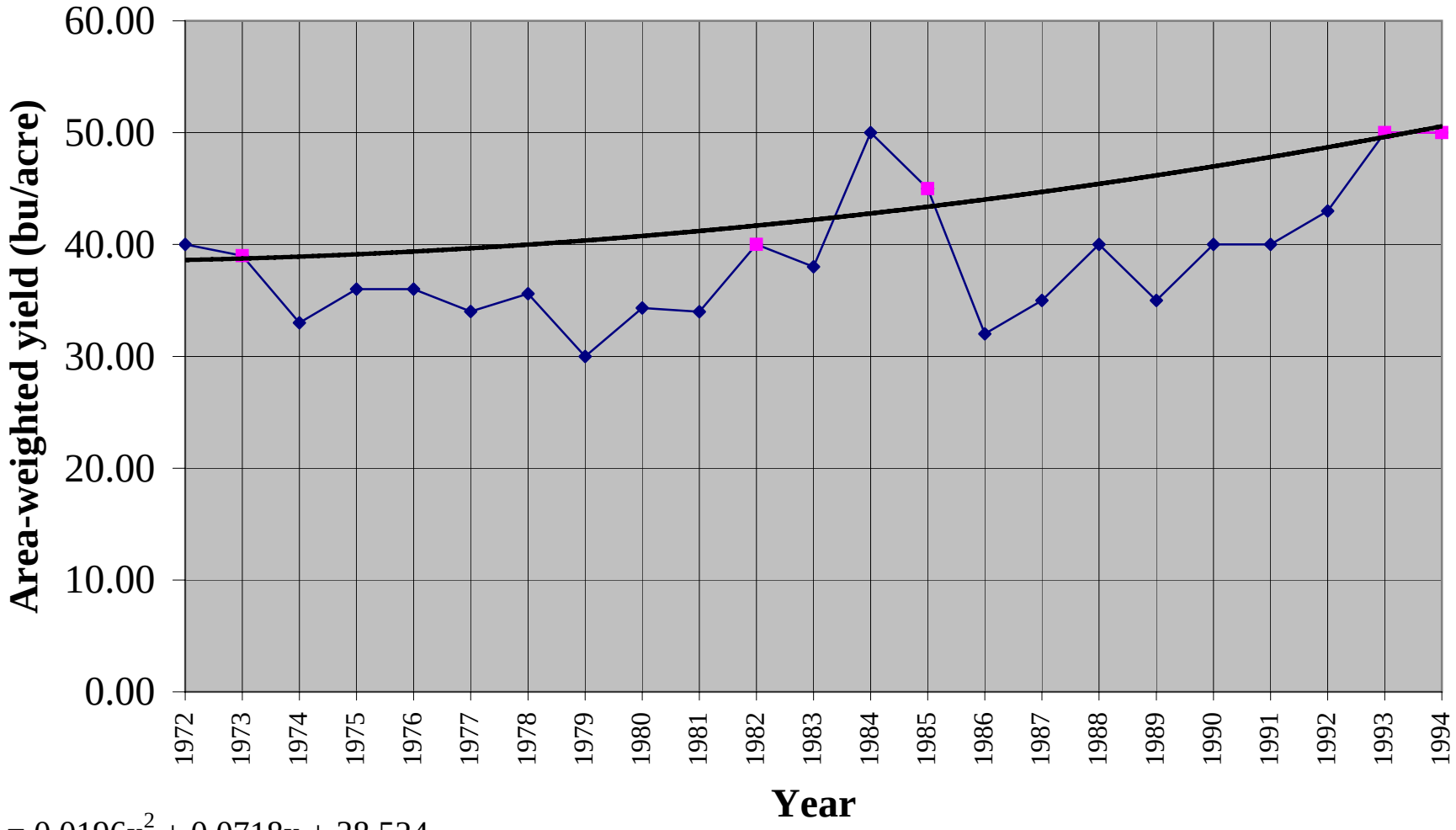


Figure 2.1.4.18
Area-weighted annual spring wheat yields and Y_{env} polynomial trendline and equation
Above Pathfinder subbasin



$y = 0.0715x^2 - 0.4112x + 36.554$

Figure 2.1.4.19
Area-weighted winter wheat yields and Y_{env} polynomial trendline and equation
Above Pathfinder subbasin



$y = 0.0196x^2 + 0.0718x + 38.524$

Derivation of adjusted, yield-based crop evapotranspiration values in the Above Pathfinder subbasin during high stream flow years using equations from Figures 2.1.4.16 through 2.1.4.19 and from Table 2.1.4.54 is summarized in Table 2.1.4.55.

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin

1984						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.15	4.27	6.98	6.85	2.94	--
Average yield, Yi (bu/acre) (2)			50.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			42.21			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month) (5)	**1.15**	**4.27**	**6.98**	**6.85**	**2.94**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.97	6.75	7.12	3.29	--
Average yield, Yi (bu/acre) (2)			60.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			41.92			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month) (5)	**--**	**2.97**	**6.75**	**7.12**	**3.29**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.31	5.09	7.12	6.05	1.99	0.99
Average yield, Yi (bu/acre) (2)			68.56			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.21			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.31**	**5.09**	**7.12**	**6.05**	**1.99**	**0.99**

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.31	5.09	7.12	6.05	1.99	0.99
Average yield, Yi (bu/acre) (2)			54.64			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.15			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.16**	**4.49**	**6.29**	**5.34**	**1.76**	**0.87**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1984 - 1900 = 84					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	0.92	2.65	6.83	5.48	2.81	1.89
Average yield, Yi (tons/acre) (2)			2.25			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.60			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.80**	**2.31**	**5.95**	**4.78**	**2.45**	**1.65**

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1984 - 1900 = 84					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.07	3.01	6.14	4.47	3.29	2.21
Average yield, Yi (tons/acre) (2)			1.59			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.49			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.07**	**3.01**	**6.14**	**4.47**	**3.29**	**2.21**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1984 - 1900 = 84					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.07	2.79	4.45	4.79	2.83	1.90
Average yield, Yi (2)			1.59			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.49			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.07**	**2.79**	**4.45**	**4.79**	**2.83**	**1.90**
1983						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.13	3.46	6.58	6.72	3.07	--
Average yield, Yi (bu/acre) (2)			38.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			41.69			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.04**	**3.19**	**6.07**	**6.20**	**2.83**	**--**

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.41	6.35	6.98	3.43	--
Average yield, Yi (bu/acre) (2)			40.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			40.68			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**2.37**	**6.26**	**6.88**	**3.38**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.28	4.12	6.70	5.94	2.08	1.09
Average yield, Yi (bu/acre) (2)			59.28			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.06			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.18**	**3.80**	**6.18**	**5.48**	**1.92**	**1.01**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.28	4.12	6.70	5.94	2.08	1.09
Average yield, Yi (bu/acre) (2)			60.59			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.30			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.25**	**4.02**	**6.54**	**5.80**	**2.03**	**1.06**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1983 - 1900 = 83					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	0.91	2.15	6.43	5.37	2.93	2.08
Average yield, Yi (tons/acre) (2)			2.67			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.59			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**0.91**	**2.15**	**6.43**	**5.37**	**2.93**	**2.08**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1983 - 1900 = 83					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.05	2.43	5.78	4.39	3.43	2.44
Average yield, Yi (tons/acre) (2)			1.62			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.47			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.05**	**2.43**	**5.78**	**4.39**	**3.43**	**2.44**
Irrigated pasture (4)	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1983 - 1900 = 83					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.05	2.26	4.19	4.70	2.95	2.10
Average yield, Yi (2)			1.62			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.47			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.05**	**2.26**	**4.19**	**4.70**	**2.95**	**2.10**

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

1985						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.63	4.34	7.53	6.79	3.14	--
Average yield, Yi (bu/acre) (2)			45.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			42.77			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month) (5)	**1.63**	**4.34**	**7.53**	**6.79**	**3.14**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	3.02	7.28	7.06	3.51	--
Average yield, Yi (bu/acre) (2)			49.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			43.29			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month) (5)	**--**	**3.02**	**7.28**	**7.06**	**3.51**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.85	5.17	7.68	6.00	2.13	0.92
Average yield, Yi (bu/acre) (2)			59.69			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.30			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.67**	**4.66**	**6.92**	**5.41**	**1.92**	**0.83**

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.85	5.17	7.68	6.00	2.13	0.92
Average yield, Yi (bu/acre) (2)			51.69			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.94			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.54**	**4.31**	**6.40**	**5.00**	**1.78**	**0.77**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1985 - 1900 = 85					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.31	2.69	7.37	5.43	3.00	1.76
Average yield, Yi (tons/acre) (2)			2.21			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.61			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.12**	**2.30**	**6.29**	**4.64**	**2.56**	**1.50**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1985 - 1900 = 85					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.52	3.05	6.62	4.44	3.50	2.06
Average yield, Yi (tons/acre) (2)			1.62			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.51			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.52**	**3.05**	**6.62**	**4.44**	**3.50**	**2.06**

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

Irrigated pasture (4)	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1985 - 1900 = 85					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.52	2.84	4.80	4.75	3.02	1.78
Average yield, Yi (2)			1.62			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.51			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.52**	**2.84**	**4.80**	**4.75**	**3.02**	**1.78**
1986						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.43	4.04	7.97	6.39	3.06	--
Average yield, Yi (bu/acre) (2)			32.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			43.37			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.10**	**3.12**	**6.15**	**4.93**	**2.36**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.81	7.70	6.65	3.43	--
Average yield, Yi (bu/acre) (2)			44.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			44.81			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**2.77**	**7.58**	**6.55**	**3.38**	**--**

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.63	4.82	8.12	5.65	2.07	0.92
Average yield, Yi (bu/acre) (2)			71.61			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			68.33			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.63**	**4.82**	**8.12**	**5.65**	**2.07**	**0.92**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.63	4.82	8.12	5.65	2.07	0.92
Average yield, Yi (bu/acre) (2)			70.39			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.67			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.63**	**4.82**	**8.12**	**5.65**	**2.07**	**0.92**
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1986 - 1900 = 86					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.15	2.51	7.79	5.11	2.93	1.76
Average yield, Yi (tons/acre) (2)			1.81			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.62			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.81**	**1.77**	**5.50**	**3.61**	**2.07**	**1.24**

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1986 - 1900 = 86					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.33	2.84	7.00	4.18	3.42	2.06
Average yield, Yi (tons/acre) (2)			1.38			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.54			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.20**	**2.56**	**6.31**	**3.77**	**3.08**	**1.86**
Irrigated pasture (4)	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1986 - 1900 = 86					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.33	2.64	5.07	4.48	2.95	1.78
Average yield, Yi (2)			1.38			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.54			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.20**	**2.38**	**4.57**	**4.04**	**2.66**	**1.60**
1973						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.05	3.87	7.18	6.39	3.04	--
Average yield, Yi (bu/acre) (2)			39.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			38.62			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month) (5)	**1.05**	**3.87**	**7.18**	**6.39**	**3.04**	**--**

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.69	6.94	6.65	3.40	--
Average yield, Yi (bu/acre) (2)			34.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			36.21			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**2.55**	**6.57**	**6.30**	**3.22**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.20	4.61	7.33	5.65	2.06	0.99
Average yield, Yi (bu/acre) (2)			47.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			49.90			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.14**	**4.38**	**6.96**	**5.36**	**1.96**	**0.94**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.20	4.61	7.33	5.65	2.06	0.99
Average yield, Yi (bu/acre) (2)			50.12			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			50.23			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.20**	**4.60**	**7.32**	**5.64**	**2.06**	**0.99**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1973 - 1900 = 73					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	0.84	2.40	7.02	5.11	2.90	1.88
Average yield, Yi (tons/acre) (2)			1.97			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.44			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.69**	**1.96**	**5.73**	**4.17**	**2.37**	**1.54**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1973 - 1900 = 73					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	0.98	2.72	6.31	4.18	3.39	2.20
Average yield, Yi (tons/acre) (2)			1.15			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.24			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**0.91**	**2.53**	**5.87**	**3.89**	**3.16**	**2.05**
Irrigated pasture (4)	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1973 - 1900 = 73					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.98	2.53	4.57	4.48	2.93	1.90
Average yield, Yi (2)			1.15			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.24			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.91**	**2.36**	**4.25**	**4.17**	**2.73**	**1.77**

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

1997						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.28	4.15	7.45	7.08	2.91	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)						
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)						
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.88	7.20	7.36	3.26	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.46	4.94	7.60	6.26	1.97	1.04
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.46	4.94	7.60	6.26	1.97	1.04
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1997 - 1900 = 97					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.03	2.58	7.29	5.66	2.78	1.98
Average yield, Yi (tons/acre) (2)			2.22			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.68			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.86**	**2.16**	**6.10**	**4.73**	**2.33**	**1.66**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1997 - 1900 = 97					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.20	2.92	6.55	4.63	3.25	2.32
Average yield, Yi (tons/acre) (2)			1.54			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.81			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.03**	**2.51**	**5.62**	**3.97**	**2.79**	**1.99**

Table 2.1.4.55 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Above Pathfinder subbasin (cont)

Irrigated pasture (4)	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1997 - 1900 = 97					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.20	2.71	4.75	4.96	2.81	2.00
Average yield, Yi (2)			1.54			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.81			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.03**	**2.32**	**4.08**	**4.26**	**2.41**	**1.72**

Notes:

(1) See Table 2.1.4.40.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

Derivation of adjusted, yield-based crop evapotranspiration in the Above Pathfinder subbasin during low stream flow years using equations from Table 2.1.4.54 and Figures 2.1.4.16 through 2.1.4.19 is summarized in Table 2.1.4.56.

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin

2001						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.49	4.30	7.73	7.54	3.24	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)						
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)						
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.99	7.47	7.84	3.62	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.70	5.12	7.89	6.67	2.19	1.14
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.70	5.12	7.89	6.67	2.19	1.14
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 2001 - 1900 = 101					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.20	2.67	7.56	6.04	3.09	2.18
Average yield, Yi (tons/acre) (2)			2.05			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.67			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.93**	**2.08**	**5.89**	**4.70**	**2.41**	**1.70**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 2001 - 1900 = 101					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.39	3.02	6.80	4.93	3.62	2.55
Average yield, Yi (tons/acre) (2)			1.16			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.92			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**0.87**	**1.88**	**4.24**	**3.07**	**2.26**	**1.59**

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 2001 - 1900 = 101					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.39	2.81	4.92	5.28	3.12	2.20
Average yield, Yi (2)			1.16			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.92			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.87**	**1.75**	**3.07**	**3.29**	**1.94**	**1.37**
1987						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.75	4.04	7.50	6.68	2.85	--
Average yield, Yi (bu/acre) (2)			35.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			44.01			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.44**	**3.32**	**6.16**	**5.49**	**2.34**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.81	7.24	6.94	3.19	--
Average yield, Yi (bu/acre) (2)			36.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			46.47			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**2.26**	**5.82**	**5.58**	**2.57**	**--**

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.99	4.82	7.65	5.90	1.93	1.08
Average yield, Yi (bu/acre) (2)			63.92			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			69.27			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.86**	**4.50**	**7.14**	**5.50**	**1.80**	**1.01**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.99	4.82	7.65	5.90	1.93	1.08
Average yield, Yi (bu/acre) (2)			67.06			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.34			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.99**	**4.82**	**7.65**	**5.90**	**1.93**	**1.08**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1987 - 1900 = 87					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.41	2.51	7.33	5.34	2.72	2.06
Average yield, Yi (tons/acre) (2)			1.74			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.63			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.96**	**1.70**	**4.97**	**3.62**	**1.84**	**1.40**

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1987 - 1900 = 87					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.63	2.84	6.59	4.36	3.18	2.40
Average yield, Yi (tons/acre) (2)			1.59			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.56			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.63**	**2.84**	**6.59**	**4.36**	**3.18**	**2.40**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1987 - 1900 = 87					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.63	2.64	4.78	4.67	2.74	2.07
Average yield, Yi (2)			1.59			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.56			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.63**	**2.64**	**4.78**	**4.67**	**2.74**	**2.07**
	1981					
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.75	3.48	7.69	6.98	3.04	--
Average yield, Yi (bu/acre) (2)			33.98			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			40.76			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.50**	**2.98**	**6.58**	**5.97**	**2.60**	**--**

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.42	7.42	7.26	3.40	--
Average yield, Yi (bu/acre) (2)			27.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			38.64			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**1.79**	**5.48**	**5.36**	**2.51**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.99	4.14	7.84	6.17	2.06	1.08
Average yield, Yi (bu/acre) (2)			53.51			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.53			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.74**	**3.62**	**6.86**	**5.40**	**1.80**	**0.94**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.99	4.14	7.84	6.17	2.06	1.08
Average yield, Yi (bu/acre) (2)			47.02			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			60.39			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.61**	**3.34**	**6.33**	**4.98**	**1.66**	**0.87**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1981 - 1900 = 81					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.41	2.16	7.52	5.58	2.90	2.07
Average yield, Yi (tons/acre) (2)			2.28			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.57			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.26**	**1.93**	**6.71**	**4.98**	**2.59**	**1.85**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1981 - 1900 = 81					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.63	2.45	6.75	4.56	3.39	2.42
Average yield, Yi (tons/acre) (2)			1.38			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.42			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.59**	**2.38**	**6.57**	**4.44**	**3.30**	**2.36**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1981 - 1900 = 81					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.63	2.27	4.89	4.89	2.93	2.09
Average yield, Yi (2)			1.38			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.42			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.59**	**2.21**	**4.76**	**4.76**	**2.85**	**2.03**

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin (cont)

1992						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.73	4.30	6.97	6.34	2.96	--
Average yield, Yi (bu/acre) (2)			43.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			47.80			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.58**	**3.92**	**6.36**	**5.79**	**2.70**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.99	6.73	6.59	3.32	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.97	5.12	7.11	5.61	2.01	1.06
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.97	5.12	7.11	5.61	2.01	1.06
Average yield, Yi (bu/acre) (2)			55.53			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.70			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.66**	**4.32**	**6.00**	**4.73**	**1.70**	**0.89**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1992 - 1900 = 92					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.39	2.67	6.82	5.07	2.83	2.03
Average yield, Yi (tons/acre) (2)			2.12			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.66			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.12**	**2.15**	**5.50**	**4.09**	**2.28**	**1.64**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1992 - 1900 = 92					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.62	3.02	6.13	4.14	3.31	2.37
Average yield, Yi (tons/acre) (2)			1.30			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.68			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.27**	**2.37**	**4.81**	**3.25**	**2.60**	**1.86**

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1992 - 1900 = 92					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.62	2.81	4.44	4.44	2.85	2.04
Average yield, Yi (2)			1.30			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.68			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.27**	**2.20**	**3.48**	**3.48**	**2.24**	**1.60**
1989						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.63	4.31	7.18	7.26	2.90	--
Average yield, Yi (bu/acre) (2)			35.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			45.41			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.31**	**3.45**	**5.75**	**5.81**	**2.32**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.99	6.94	7.55	3.24	--
Average yield, Yi (bu/acre) (2)			43.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			50.23			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**2.62**	**6.07**	**6.61**	**2.83**	**--**

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.86	5.13	7.33	6.42	1.96	1.05
Average yield, Yi (bu/acre) (2)			64.28			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			70.99			
Adjusted maximum evapotranspiration, $ET_{BARLEY(HIGH)}$ (inches per month)	**1.71**	**4.71**	**6.73**	**5.89**	**1.80**	**0.96**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.86	5.13	7.33	6.42	1.96	1.05
Average yield, Yi (bu/acre) (2)			61.70			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.47			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.74**	**4.81**	**6.87**	**6.02**	**1.84**	**0.98**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1989 - 1900 = 89					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.31	2.67	7.02	5.81	2.77	2.00
Average yield, Yi (tons/acre) (2)			2.25			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.65			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.12**	**2.29**	**6.01**	**4.97**	**2.37**	**1.71**

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1989 - 1900 = 89					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.52	3.03	6.31	4.75	3.24	2.34
Average yield, Yi (tons/acre) (2)			0.87			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.61			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**0.85**	**1.70**	**3.55**	**2.67**	**1.82**	**1.32**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1989 - 1900 = 89					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.52	2.81	4.57	5.08	2.79	2.01
Average yield, Yi (2)			0.87			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.61			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.85**	**1.58**	**2.57**	**2.86**	**1.57**	**1.13**
1977						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.63	4.32	8.46	7.10	2.94	--
Average yield, Yi (bu/acre) (2)			34.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			39.37			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.44**	**3.81**	**7.46**	**6.26**	**2.59**	**--**

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	3.00	8.17	7.38	3.29	--
Average yield, Yi (bu/acre) (2)			34.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			36.29			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**2.84**	**7.72**	**6.98**	**3.11**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.86	5.15	8.63	6.28	1.99	1.12
Average yield, Yi (bu/acre) (2)			54.57			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			56.73			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.86**	**5.15**	**8.63**	**6.28**	**1.99**	**1.12**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.86	5.15	8.63	6.28	1.99	1.12
Average yield, Yi (bu/acre) (2)			53.30			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			55.82			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.79**	**4.95**	**8.29**	**6.03**	**1.91**	**1.08**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						

Table 2.1.4.56 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Above Pathfinder subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec)					
	x = 1977 - 1900 = 77					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.31	2.68	8.27	5.68	2.81	2.14
Average yield, Yi (tons/acre) (2)			1.68			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.51			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**0.90**	**1.84**	**5.67**	**3.89**	**1.93**	**1.47**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec)					
	x = 1977 - 1900 = 77					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.52	3.04	7.43	4.64	3.29	2.50
Average yield, Yi (bu/acre) (2)			0.98			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (bu/acre) (2)			1.33			
Adjusted maximum evapotranspiration, $ET_{OHAY(HIGH)}$ (inches per month)	**1.14**	**2.28**	**5.57**	**3.48**	**2.47**	**1.87**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec)					
	x = 1977 - 1900 = 77					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.52	2.82	5.39	4.97	2.83	2.15
Average yield, Yi (2)			0.98			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.33			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.14**	**2.11**	**4.04**	**3.72**	**2.12**	**1.61**

Notes:

(1) See Table 2.1.4.40.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

Derivation of adjusted, yield-based crop evapotranspiration in the Above Pathfinder subbasin during normal or average stream flow years using equations from Table 2.1.4.54 and Figures 2.1.4.16 through 2.1.4.19 is summarized in Table 2.1.4.57.

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin

1995						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.37	3.24	6.42	6.66	3.22	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)						
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)						
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.25	6.20	6.92	3.61	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.56	3.86	6.55	5.88	2.18	1.01
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.56	3.86	6.55	5.88	2.18	1.01
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1995 - 1900 = 95					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.10	2.01	6.28	5.32	3.08	1.94
Average yield, Yi (tons/acre) (2)			2.41			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.67			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.00**	**1.82**	**5.70**	**4.83**	**2.79**	**1.76**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1995 - 1900 = 95					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.28	2.28	5.64	4.35	3.60	2.26
Average yield, Yi (bu/acre) (2)			1.62			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (bu/acre) (2)			1.76			
Adjusted maximum evapotranspiration, $ET_{OHAY(HIGH)}$ (inches per month)	**1.18**	**2.11**	**5.21**	**4.02**	**3.33**	**2.09**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1995 - 1900 = 95					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.28	2.12	4.09	4.66	3.10	1.95
Average yield, Yi (2)			1.62			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.76			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.18**	**1.96**	**3.78**	**4.31**	**2.87**	**1.80**
1974						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.39	4.31	7.77	6.98	2.99	--
Average yield, Yi (bu/acre) (2)			33.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			38.75			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.21**	**3.75**	**6.77**	**6.08**	**2.60**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	3.00	7.50	7.26	3.34	--
Average yield, Yi (bu/acre) (2)			36.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			36.02			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**3.00**	**7.50**	**7.26**	**3.34**	**--**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.58	5.14	7.92	6.17	2.02	1.05
Average yield, Yi (bu/acre) (2)			52.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			51.71			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.58**	**5.14**	**7.92**	**6.17**	**2.02**	**1.05**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.58	5.14	7.92	6.17	2.02	1.05
Average yield, Yi (bu/acre) (2)			49.16			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			51.72			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.51**	**4.92**	**7.58**	**5.90**	**1.93**	**1.00**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1974 - 1900 = 74					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.12	2.68	7.60	5.58	2.85	2.00
Average yield, Yi (tons/acre) (2)			1.96			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.46			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.90**	**2.16**	**6.13**	**4.50**	**2.30**	**1.61**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1974 - 1900 = 74					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.30	3.04	6.83	4.56	3.34	2.34
Average yield, Yi (tons/acre) (2)			1.18			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.27			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.21**	**2.83**	**6.37**	**4.25**	**3.11**	**2.18**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1974 - 1900 = 74					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.30	2.82	4.95	4.89	2.88	2.02
Average yield, Yi (2)			1.18			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.27			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.21**	**2.63**	**4.62**	**4.56**	**2.69**	**1.88**
	1980					
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.37	3.88	7.91	7.07	2.97	--
Average yield, Yi (bu/acre) (2)			34.32			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			40.35			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.19**	**3.38**	**6.88**	**6.15**	**2.58**	**--**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.70	7.64	7.35	3.32	--
Average yield, Yi (bu/acre) (2)			32.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			37.84			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**2.34**	**6.61**	**6.36**	**2.87**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.56	4.62	8.06	6.25	2.01	1.07
Average yield, Yi (bu/acre) (2)			58.82			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.19			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.56**	**4.62**	**8.06**	**6.25**	**2.01**	**1.07**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.56	4.62	8.06	6.25	2.01	1.07
Average yield, Yi (bu/acre) (2)			70.46			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.35			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.56**	**4.62**	**8.06**	**6.25**	**2.01**	**1.07**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1980 - 1900 = 80					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.11	2.41	7.73	5.66	2.83	2.05
Average yield, Yi (tons/acre) (2)			2.15			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.56			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.94**	**2.04**	**6.55**	**4.80**	**2.40**	**1.74**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1980 - 1900 = 80					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.28	2.73	6.95	4.62	3.31	2.40
Average yield, Yi (tons/acre) (2)			1.27			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.40			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.17**	**2.49**	**6.34**	**4.21**	**3.02**	**2.19**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1980 - 1900 = 80					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.28	2.54	5.04	4.95	2.86	2.07
Average yield, Yi (2)			1.27			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.40			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.17**	**2.32**	**4.59**	**4.51**	**2.61**	**1.89**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

1982						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.44	3.75	6.84	6.74	3.03	--
Average yield, Yi (bu/acre) (2)			40.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			41.20			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.40**	**3.66**	**6.67**	**6.57**	**2.95**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.60	6.61	7.00	3.39	--
Average yield, Yi (bu/acre) (2)			38.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			39.59			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**2.51**	**6.38**	**6.76**	**3.27**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.64	4.46	6.98	5.96	2.05	0.93
Average yield, Yi (bu/acre) (2)			65.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.83			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.64**	**4.46**	**6.98**	**5.96**	**2.05**	**0.93**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.)					
	x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.64	4.46	6.98	5.96	2.05	0.93
Average yield, Yi (bu/acre) (2)			62.45			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.38			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.64**	**4.46**	**6.98**	**5.96**	**2.05**	**0.93**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec)					
	x = 1982 - 1900 = 82					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.16	2.33	6.69	5.39	2.89	1.78
Average yield, Yi (tons/acre) (2)			2.51			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.58			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.13**	**2.27**	**6.52**	**5.25**	**2.82**	**1.73**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec)					
	x = 1982 - 1900 = 82					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.34	2.64	6.01	4.40	3.38	2.09
Average yield, Yi (tons/acre) (2)			1.57			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.44			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.34**	**2.64**	**6.01**	**4.40**	**3.38**	**2.09**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1982 - 1900 = 82					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.34	2.45	4.36	4.72	2.92	1.80
Average yield, Yi (2)			1.57			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.44			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.34**	**2.45**	**4.36**	**4.72**	**2.92**	**1.80**
1978						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.55	3.81	7.38	7.36	2.99	--
Average yield, Yi (bu/acre) (2)			35.60			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			39.66			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.41**	**3.47**	**6.72**	**6.70**	**2.72**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.65	7.13	7.65	3.35	--
Average yield, Yi (bu/acre) (2)			36.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			36.66			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**2.61**	**7.02**	**7.53**	**3.30**	**--**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.77	4.54	7.53	6.51	2.03	1.09
Average yield, Yi (bu/acre) (2)			69.42			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.29			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.77**	**4.54**	**7.53**	**6.51**	**2.03**	**1.09**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.77	4.54	7.53	6.51	2.03	1.09
Average yield, Yi (bu/acre) (2)			62.31			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			57.06			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.77**	**4.54**	**7.53**	**6.51**	**2.03**	**1.09**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1978 - 1900 = 78					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.25	2.37	7.22	5.89	2.86	2.08
Average yield, Yi (tons/acre) (2)			1.74			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.53			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.88**	**1.67**	**5.07**	**4.14**	**2.01**	**1.46**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1978 - 1900 = 78					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.45	2.68	6.49	4.81	3.34	2.44
Average yield, Yi (tons/acre) (2)			1.30			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.35			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.40**	**2.59**	**6.26**	**4.64**	**3.22**	**2.35**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1978 - 1900 = 78					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.45	2.49	4.70	5.15	2.88	2.10
Average yield, Yi (2)			1.30			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.35			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.40**	**2.40**	**4.53**	**4.97**	**2.78**	**2.03**
1996						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.49	4.00	7.80	7.25	3.25	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)						
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)						

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.78	7.54	7.54	3.64	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.70	4.77	7.96	6.41	2.20	1.01
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)						
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.70	4.77	7.96	6.41	2.20	1.01
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)						
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1996 - 1900 = 96					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.20	2.48	7.63	5.80	3.11	1.93
Average yield, Yi (tons/acre) (2)			2.18			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.68			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.99**	**2.04**	**6.27**	**4.77**	**2.56**	**1.59**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1996 - 1900 = 96					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.39	2.82	6.86	4.74	3.63	2.26
Average yield, Yi (tons/acre) (2)			1.50			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.79			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.18**	**2.38**	**5.80**	**4.01**	**3.07**	**1.91**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1996 - 1900 = 96					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.39	2.62	4.97	5.08	3.13	1.95
Average yield, Yi (2)			1.50			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.79			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.18**	**2.22**	**4.20**	**4.30**	**2.65**	**1.65**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

1979						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.44	3.85	7.53	7.16	2.78	--
Average yield, Yi (bu/acre) (2)			30.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			39.99			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.13**	**3.01**	**5.89**	**5.60**	**2.18**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.67	7.28	7.44	3.11	--
Average yield, Yi (bu/acre) (2)			38.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			37.18			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month) (5)	**--**	**2.67**	**7.28**	**7.44**	**3.11**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.64	4.58	7.68	6.33	1.88	1.17
Average yield, Yi (bu/acre) (2)			37.57			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.78			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.11**	**3.10**	**5.20**	**4.28**	**1.27**	**0.79**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.)					
	x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.64	4.58	7.68	6.33	1.88	1.17
Average yield, Yi (bu/acre) (2)			62.44			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.24			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.64**	**4.58**	**7.68**	**6.33**	**1.88**	**1.17**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec)					
	x = 1979 - 1900 = 79					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.16	2.39	7.37	5.73	2.66	2.24
Average yield, Yi (tons/acre) (2)			2.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.54			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.97**	**2.00**	**6.15**	**4.78**	**2.22**	**1.87**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec)					
	x = 1979 - 1900 = 79					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.34	2.71	6.62	4.68	3.11	2.62
Average yield, Yi (tons/acre) (2)			1.41			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.38			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.34**	**2.71**	**6.62**	**4.68**	**3.11**	**2.62**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1979 - 1900 = 79					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.34	2.51	4.80	5.01	2.68	2.26
Average yield, Yi (2)			1.41			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.38			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.34**	**2.51**	**4.80**	**5.01**	**2.68**	**2.26**
1999						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.27	3.86	7.21	7.21	3.05	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)						
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)						
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.68	6.96	7.50	3.41	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.45	4.60	7.35	6.38	2.06	1.00
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.45	4.60	7.35	6.38	2.06	1.00
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1999 - 1900 = 99					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.02	2.40	7.05	5.77	2.91	1.91
Average yield, Yi (tons/acre) (2)			2.23			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.67			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.86**	**2.02**	**5.94**	**4.86**	**2.45**	**1.61**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1999 - 1900 = 99					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.19	2.72	6.33	4.71	3.40	2.24
Average yield, Yi (tons/acre) (2)			1.55			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.86			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.00**	**2.29**	**5.33**	**3.96**	**2.86**	**1.88**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1999 - 1900 = 99					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.19	2.52	4.59	5.05	2.94	1.93
Average yield, Yi (2)			1.55			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.86			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.00**	**2.12**	**3.86**	**4.25**	**2.47**	**1.62**
	1993					
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.28	3.96	6.58	6.58	2.86	--
Average yield, Yi (bu/acre) (2)			50.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			48.68			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month) (5)	**1.28**	**3.96**	**6.58**	**6.58**	**2.86**	**--**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.75	6.35	6.84	3.20	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.46	4.72	6.70	5.81	1.94	1.00
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.46	4.72	6.70	5.81	1.94	1.00
Average yield, Yi (bu/acre) (2)			64.81			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.98			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.40**	**4.53**	**6.43**	**5.57**	**1.86**	**0.96**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1993 - 1900 = 93					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.03	2.46	6.43	5.26	2.73	1.90
Average yield, Yi (tons/acre) (2)			2.17			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.67			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.85**	**2.02**	**5.28**	**4.32**	**2.24**	**1.56**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1993 - 1900 = 93					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.19	2.79	5.78	4.30	3.19	2.22
Average yield, Yi (tons/acre) (2)			1.78			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.71			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.19**	**2.79**	**5.78**	**4.30**	**3.19**	**2.22**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1993 - 1900 = 93					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.19	2.59	4.19	4.60	2.75	1.92
Average yield, Yi (2)			1.78			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.71			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.19**	**2.59**	**4.19**	**4.60**	**2.75**	**1.92**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

1975						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.25	3.72	6.83	6.96	3.04	--
Average yield, Yi (bu/acre) (2)			36.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			38.92			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.17**	**3.48**	**6.38**	**6.51**	**2.84**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.59	6.60	7.23	3.40	--
Average yield, Yi (bu/acre) (2)			34.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			35.96			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**2.47**	**6.29**	**6.89**	**3.24**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.42	4.44	6.97	6.15	2.06	1.06
Average yield, Yi (bu/acre) (2)			40.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			53.45			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.11**	**3.47**	**5.44**	**4.80**	**1.61**	**0.83**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.)					
	x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.42	4.44	6.97	6.15	2.06	1.06
Average yield, Yi (bu/acre) (2)			52.25			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			53.15			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.40**	**4.37**	**6.87**	**6.06**	**2.03**	**1.04**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec)					
	x = 1975 - 1900 = 75					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.00	2.31	6.68	5.57	2.90	2.02
Average yield, Yi (tons/acre) (2)			2.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.48			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.85**	**1.97**	**5.71**	**4.76**	**2.48**	**1.73**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec)					
	x = 1975 - 1900 = 75					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.16	2.62	6.00	4.55	3.39	2.36
Average yield, Yi (tons/acre) (2)			1.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.29			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.00**	**2.25**	**5.16**	**3.91**	**2.91**	**2.03**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1975 - 1900 = 75					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.16	2.43	4.35	4.87	2.93	2.03
Average yield, Yi (2)			1.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.29			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.00**	**2.09**	**3.74**	**4.19**	**2.52**	**1.75**
1998						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.47	4.35	6.41	7.19	3.09	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)						
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)						
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	3.02	6.19	7.48	3.46	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.67	5.18	6.54	6.36	2.09	1.16
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.67	5.18	6.54	6.36	2.09	1.16
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1998 - 1900 = 98					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.18	2.70	6.27	5.75	2.95	2.22
Average yield, Yi (tons/acre) (2)			2.21			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.68			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.98**	**2.25**	**5.22**	**4.79**	**2.46**	**1.85**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1998 - 1900 = 98					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.37	3.06	5.63	4.70	3.45	2.60
Average yield, Yi (tons/acre) (2)			1.56			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.84			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.17**	**2.62**	**4.81**	**4.02**	**2.95**	**2.22**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1998 - 1900 = 98					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.37	2.84	4.08	5.03	2.97	2.24
Average yield, Yi (2)			1.56			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.84			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.17**	**2.43**	**3.49**	**4.30**	**2.54**	**1.92**
1988						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.69	4.20	7.71	7.34	3.09	--
Average yield, Yi (bu/acre) (2)			40.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			44.69			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.54**	**3.82**	**7.01**	**6.67**	**2.81**	**--**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.92	7.45	7.63	3.46	--
Average yield, Yi (bu/acre) (2)			37.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			48.28			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**2.33**	**5.94**	**6.08**	**2.76**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.92	5.00	7.86	6.49	2.10	1.02
Average yield, Yi (bu/acre) (2)			69.28			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			70.18			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.90**	**4.94**	**7.77**	**6.42**	**2.08**	**1.01**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.92	5.00	7.86	6.49	2.10	1.02
Average yield, Yi (bu/acre) (2)			46.28			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.94			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.42**	**3.70**	**5.82**	**4.81**	**1.56**	**0.76**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1988 - 1900 = 88					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.36	2.61	7.54	5.87	2.95	1.95
Average yield, Yi (tons/acre) (2)			2.16			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.64			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.12**	**2.16**	**6.23**	**4.85**	**2.44**	**1.61**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1988 - 1900 = 88					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.57	2.95	6.77	4.80	3.45	2.28
Average yield, Yi (tons/acre) (2)			1.35			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.59			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.34**	**2.53**	**5.80**	**4.11**	**2.95**	**1.95**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1988 - 1900 = 88					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.57	2.74	4.91	5.14	2.98	1.96
Average yield, Yi (2)			1.35			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.59			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.34**	**2.35**	**4.20**	**4.40**	**2.55**	**1.68**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

1976						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.45	4.28	6.96	7.20	2.89	--
Average yield, Yi (bu/acre) (2)			36.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			39.12			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.35**	**3.98**	**6.48**	**6.70**	**2.69**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.98	6.72	7.49	3.24	--
Average yield, Yi (bu/acre) (2)			35.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			36.05			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**--**	**2.90**	**6.55**	**7.30**	**3.16**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.65	5.10	7.10	6.37	1.96	1.07
Average yield, Yi (bu/acre) (2)			60.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			55.13			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.65**	**5.10**	**7.10**	**6.37**	**1.96**	**1.07**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.)					
	x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.65	5.10	7.10	6.37	1.96	1.07
Average yield, Yi (bu/acre) (2)			58.73			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			54.52			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.65**	**5.10**	**7.10**	**6.37**	**1.96**	**1.07**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec)					
	x = 1976 - 1900 = 76					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.17	2.66	6.81	5.76	2.76	2.04
Average yield, Yi (tons/acre) (2)			1.63			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.49			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.79**	**1.79**	**4.57**	**3.87**	**1.85**	**1.37**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec)					
	x = 1976 - 1900 = 76					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.36	3.01	6.12	4.71	3.23	2.38
Average yield, Yi (tons/acre) (2)			1.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.31			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.25**	**2.77**	**5.63**	**4.33**	**2.97**	**2.19**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1976 - 1900 = 76					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.36	2.80	4.43	5.04	2.79	2.05
Average yield, Yi (2)			1.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.31			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.25**	**2.58**	**4.08**	**4.64**	**2.57**	**1.89**
1972						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.50	4.13	7.28	6.99	3.03	--
Average yield, Yi (bu/acre) (2)			40.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			38.52			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month) (5)	**1.50**	**4.13**	**7.28**	**6.99**	**3.03**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.87	7.03	7.27	3.39	--
Average yield, Yi (bu/acre) (2)			40.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			36.55			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month) (5)	**--**	**2.87**	**7.03**	**7.27**	**3.39**	**--**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.)					
	x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.71	4.92	7.42	6.18	2.05	1.02
Average yield, Yi (bu/acre) (2)			50.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			48.02			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.71**	**4.92**	**7.42**	**6.18**	**2.05**	**1.02**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.)					
	x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.71	4.92	7.42	6.18	2.05	1.02
Average yield, Yi (bu/acre) (2)			60.35			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			48.67			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.71**	**4.92**	**7.42**	**6.18**	**2.05**	**1.02**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec)					
	x = 1972 - 1900 = 72					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.21	2.57	7.12	5.59	2.89	1.94
Average yield, Yi (tons/acre) (2)			1.96			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.42			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.99**	**2.10**	**5.83**	**4.58**	**2.37**	**1.59**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1972 - 1900 = 72					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.40	2.91	6.39	4.57	3.38	2.27
Average yield, Yi (tons/acre) (2)			1.12			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.22			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.29**	**2.68**	**5.89**	**4.21**	**3.12**	**2.09**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1972 - 1900 = 72					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.40	2.70	4.63	4.89	2.92	1.96
Average yield, Yi (2)			1.12			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.22			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.29**	**2.49**	**4.27**	**4.51**	**2.69**	**1.81**
1991						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.36	3.97	7.28	6.77	3.03	--
Average yield, Yi (bu/acre) (2)			40.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			46.96			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.18**	**3.46**	**6.34**	**5.90**	**2.64**	**--**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.76	7.03	7.04	3.39	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.55	4.73	7.42	5.98	2.05	1.03
Average yield, Yi (bu/acre) (2)			65.36			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			72.47			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.42**	**4.33**	**6.79**	**5.47**	**1.88**	**0.94**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.55	4.73	7.42	5.98	2.05	1.03
Average yield, Yi (bu/acre) (2)			55.76			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.35			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.32**	**4.02**	**6.31**	**5.09**	**1.74**	**0.88**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1991 - 1900 = 91					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.10	2.46	7.12	5.41	2.90	1.96
Average yield, Yi (tons/acre) (2)			2.13			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.66			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.89**	**1.99**	**5.77**	**4.38**	**2.35**	**1.59**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1991 - 1900 = 91					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.27	2.79	6.39	4.42	3.39	2.30
Average yield, Yi (tons/acre) (2)			1.40			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.66			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.08**	**2.37**	**5.44**	**3.76**	**2.88**	**1.96**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1991 - 1900 = 91					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.27	2.59	4.63	4.74	2.92	1.98
Average yield, Yi (2)			1.40			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.66			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.08**	**2.20**	**3.94**	**4.03**	**2.48**	**1.68**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

2000						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.71	4.52	7.89	7.67	3.27	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)						
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)						
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	3.14	7.62	7.97	3.66	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.95	5.38	8.04	6.78	2.21	1.03
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.95	5.38	8.04	6.78	2.21	1.03
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 2000 - 1900 = 100					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.38	2.80	7.71	6.13	3.12	1.96
Average yield, Yi (bu/acre) (2)			2.06			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (bu/acre) (2)			2.67			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.08**	**2.19**	**6.03**	**4.80**	**2.44**	**1.53**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 2000 - 1900 = 100					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.60	3.18	6.93	5.01	3.65	2.29
Average yield, Yi (tons/acre) (2)			1.56			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.89			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.33**	**2.65**	**5.78**	**4.18**	**3.04**	**1.91**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 2000 - 1900 = 100					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.60	2.95	5.02	5.37	3.15	1.98
Average yield, Yi (2)			1.56			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.89			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.33**	**2.46**	**4.19**	**4.48**	**2.63**	**1.65**
1990						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.56	3.97	7.37	6.60	3.01	--
Average yield, Yi (bu/acre) (2)			40.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			46.17			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.38**	**3.51**	**6.51**	**5.83**	**2.66**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	2.76	7.12	6.86	3.37	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.77	4.73	7.52	5.83	2.04	1.11
Average yield, Yi (bu/acre) (2)			69.28			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			71.77			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.72**	**4.59**	**7.29**	**5.65**	**1.98**	**1.08**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.77	4.73	7.52	5.83	2.04	1.11
Average yield, Yi (bu/acre) (2)			50.09			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.94			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.38**	**3.69**	**5.87**	**4.55**	**1.59**	**0.87**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1990 - 1900 = 90					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.25	2.46	7.21	5.28	2.88	2.11
Average yield, Yi (tons/acre) (2)			1.74			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.65			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.84**	**1.66**	**4.85**	**3.55**	**1.94**	**1.42**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1990 - 1900 = 90					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.46	2.79	6.48	4.31	3.37	2.47
Average yield, Yi (tons/acre) (2)			1.26			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.64			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.14**	**2.17**	**5.05**	**3.36**	**2.63**	**1.92**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1990 - 1900 = 90					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.46	2.59	4.69	4.62	2.90	2.13
Average yield, Yi (2)			1.26			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.64			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.14**	**2.02**	**3.66**	**3.60**	**2.26**	**1.66**
1994						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0196x2 + 0.0718x + 38.524 (see Figure 2.1.4.19.) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.54	4.64	8.17	7.16	3.21	--
Average yield, Yi (bu/acre) (2)			50.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			49.59			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month) (5)	**1.54**	**4.64**	**8.17**	**7.16**	**3.21**	**--**

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0715x2 - 0.4112x + 36.554 (see Figure 2.1.4.18.) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	--	3.23	7.89	7.44	3.59	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0327x2 + 1.9082x + 48.022 (see Figure 2.1.4.16.) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.76	5.53	8.33	6.33	2.17	1.10
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0319x2 + 1.5893x + 48.673 (see Figure 2.1.4.17.) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.76	5.53	8.33	6.33	2.17	1.10
Average yield, Yi (bu/acre) (2)			46.88			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			68.20			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.28**	**4.03**	**6.07**	**4.61**	**1.58**	**0.80**
Dry beans						
Not grown in Above Pathfinder subbasin						
Sugar beets						
Not grown in Above Pathfinder subbasin						
Corn						
Not grown in Above Pathfinder subbasin						

Table 2.1.4.57 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Above Pathfinder subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0004x2 + 0.0779x - 1.1168 (from 2001 Mod Dec) x = 1994 - 1900 = 94					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.24	2.88	7.99	5.73	3.06	2.10
Average yield, Yi (tons/acre) (2)			2.05			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.67			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.97**	**2.24**	**6.22**	**4.46**	**2.38**	**1.64**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1994 - 1900 = 94					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.44	3.27	7.18	4.68	3.58	2.46
Average yield, Yi (tons/acre) (2)			1.41			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.73			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.19**	**2.69**	**5.92**	**3.86**	**2.95**	**2.03**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.00009x2 + 0.0083x + 0.1592 (from 2001 Mod Dec) x = 1994 - 1900 = 94					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.44	3.03	5.20	5.01	3.09	2.12
Average yield, Yi (2)			1.41			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.73			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.19**	**2.50**	**4.28**	**4.13**	**2.55**	**1.75**

Notes:

(1) See Table 2.1.4.40.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

A summary of adjusted, yield-based crop evapotranspiration values during high, low, and normal or average stream flow years–derivations of which are shown in Tables 2.1.4.55, 2.1.4.56, and 2.1.4.57–is included in Table 2.1.4.58.

Table 2.1.4.58 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Above Pathfinder subbasin

High stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1984	winter wheat	1.15	4.27	6.98	6.85	2.94	--	**22.19**
	spring wheat	--	2.97	6.75	7.12	3.29	--	**20.13**
	barley	1.31	5.09	7.12	6.05	1.99	0.99	**22.55**
	oats	1.16	4.49	6.29	5.34	1.76	0.87	**19.91**
	dry beans	Not cultivated						
	sugar beets	Not cultivated						
	corn	Not cultivated						
	alfalfa	0.80	2.31	5.95	4.78	2.45	1.65	**17.94**
	other hay	1.07	3.01	6.14	4.47	3.29	2.21	**20.19**
	irrigated pasture	1.07	2.79	4.45	4.79	2.83	1.90	**17.83**
1983	winter wheat	1.04	3.19	6.07	6.20	2.83	--	**19.33**
	spring wheat	--	2.37	6.26	6.88	3.38	--	**18.89**
	barley	1.18	3.80	6.18	5.48	1.92	1.01	**19.57**
	oats	1.25	4.02	6.54	5.80	2.03	1.06	**20.70**
	dry beans	Not cultivated						
	sugar beets	Not cultivated						
	corn	Not cultivated						
	alfalfa	0.91	2.15	6.43	5.37	2.93	2.08	**19.87**
	other hay	1.05	2.43	5.78	4.39	3.43	2.44	**19.52**
	irrigated pasture	1.05	2.26	4.19	4.70	2.95	2.10	**17.25**
1985	winter wheat	1.63	4.34	7.53	6.79	3.14	--	**23.43**
	spring wheat	--	3.02	7.28	7.06	3.51	--	**20.87**
	barley	1.67	4.66	6.92	5.41	1.92	0.83	**21.41**
	oats	1.54	4.31	6.40	5.00	1.78	0.77	**19.80**
	dry beans	Not cultivated						
	sugar beets	Not cultivated						
	corn	Not cultivated						
	alfalfa	1.12	2.30	6.29	4.64	2.56	1.50	**18.41**
	other hay	1.52	3.05	6.62	4.44	3.50	2.06	**21.19**
	irrigated pasture	1.52	2.84	4.80	4.75	3.02	1.78	**18.71**
1986	winter wheat	1.10	3.12	6.15	4.93	2.36	--	**17.66**
	spring wheat	--	2.77	7.58	6.55	3.38	--	**20.28**
	barley	1.63	4.82	8.12	5.65	2.07	0.92	**23.21**
	oats	1.63	4.82	8.12	5.65	2.07	0.92	**23.21**
	dry beans	Not cultivated						
	sugar beets	Not cultivated						
	corn	Not cultivated						
	alfalfa	0.81	1.77	5.50	3.61	2.07	1.24	**15.00**
	other hay	1.20	2.56	6.31	3.77	3.08	1.86	**18.78**
	irrigated pasture	1.20	2.38	4.57	4.04	2.66	1.60	**16.45**

Table 2.1.4.58 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Above Pathfinder subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
1973	winter wheat	1.05	3.87	7.18	6.39	3.04	--	**21.53**
	spring wheat	--	2.55	6.57	6.30	3.22	--	**18.64**
	barley	1.14	4.38	6.96	5.36	1.96	0.94	**20.74**
	oats	1.20	4.60	7.32	5.64	2.06	0.99	**21.81**
	dry beans	Not cultivated						
	sugar beets	Not cultivated						
	corn	Not cultivated						
	alfalfa	0.69	1.96	5.73	4.17	2.37	1.54	**16.46**
	other hay	0.91	2.53	5.87	3.89	3.16	2.05	**18.41**
	irrigated pasture	0.91	2.36	4.25	4.17	2.73	1.77	**16.19**
1997	winter wheat	Not cultivated						
	spring wheat	Not cultivated						
	barley	Not cultivated						
	oats	Not cultivated						
	dry beans	Not cultivated						
	sugar beets	Not cultivated						
	corn	Not cultivated						
	alfalfa	0.86	2.16	6.10	4.73	2.33	1.66	**17.84**
	other hay	1.03	2.51	5.62	3.97	2.79	1.99	**17.91**
	irrigated pasture	1.03	2.32	4.08	4.26	2.41	1.72	**15.82**
Low stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
2001	winter wheat	Not cultivated						
	spring wheat	Not cultivated						
	barley	Not cultivated						
	oats	Not cultivated						
	dry beans	Not cultivated						
	sugar beets	Not cultivated						
	corn	Not cultivated						
	alfalfa	0.93	2.08	5.89	4.70	2.41	1.70	**17.71**
	other hay	0.87	1.88	4.24	3.07	2.26	1.59	**13.91**
	irrigated pasture	0.87	1.75	3.07	3.29	1.94	1.37	**12.29**
1987	winter wheat	1.44	3.32	6.16	5.49	2.34	--	**18.75**
	spring wheat	--	2.26	5.82	5.58	2.57	--	**16.23**
	barley	1.86	4.50	7.14	5.50	1.80	1.01	**21.81**
	oats	1.99	4.82	7.65	5.90	1.93	1.08	**23.37**
	dry beans	Not cultivated						
	sugar beets	Not cultivated						
	corn	Not cultivated						
	alfalfa	0.96	1.70	4.97	3.62	1.84	1.40	**14.49**
	other hay	1.63	2.84	6.59	4.36	3.18	2.40	**21.00**
	irrigated pasture	1.63	2.64	4.78	4.67	2.74	2.07	**18.53**

Table 2.1.4.58 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Above Pathfinder subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1981	winter wheat	1.50	2.98	6.58	5.97	2.60	--	**19.63**
	spring wheat	--	1.79	5.48	5.36	2.51	--	**15.14**
	barley	1.74	3.62	6.86	5.40	1.80	0.94	**20.36**
	oats	1.61	3.34	6.33	4.98	1.66	0.87	**18.79**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.26	1.93	6.71	4.98	2.59	1.85	**19.32**
	other hay	1.59	2.38	6.57	4.44	3.30	2.36	**20.64**
	irrigated pasture	1.59	2.21	4.76	4.76	2.85	2.03	**18.20**
1992	winter wheat	1.58	3.92	6.36	5.79	2.70	--	**20.35**
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats	1.66	4.32	6.00	4.73	1.70	0.89	**19.30**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.12	2.15	5.50	4.09	2.28	1.64	**16.78**
	other hay	1.27	2.37	4.81	3.25	2.60	1.86	**16.16**
	irrigated pasture	1.27	2.20	3.48	3.48	2.24	1.60	**14.27**
1989	winter wheat	1.31	3.45	5.75	5.81	2.32	--	**18.64**
	spring wheat	--	2.62	6.07	6.61	2.83	--	**18.13**
	barley	1.71	4.71	6.73	5.89	1.80	0.96	**21.80**
	oats	1.74	4.81	6.87	6.02	1.84	0.98	**22.26**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.12	2.29	6.01	4.97	2.37	1.71	**18.47**
	other hay	0.85	1.70	3.55	2.67	1.82	1.32	**11.91**
	irrigated pasture	0.85	1.58	2.57	2.86	1.57	1.13	**10.56**
1977	winter wheat	1.44	3.81	7.46	6.26	2.59	--	**21.56**
	spring wheat	--	2.84	7.72	6.98	3.11	--	**20.65**
	barley	1.86	5.15	8.63	6.28	1.99	1.12	**25.03**
	oats	1.79	4.95	8.29	6.03	1.91	1.08	**24.05**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.90	1.84	5.67	3.89	1.93	1.47	**15.70**
	other hay	1.14	2.28	5.57	3.48	2.47	1.87	**16.81**
	irrigated pasture	1.14	2.11	4.04	3.72	2.12	1.61	**14.74**

Table 2.1.4.58 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Above Pathfinder subbasin (cont)

Normal or average stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1995	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats			Not cultivated				
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.00	1.82	5.70	4.83	2.79	1.76	**17.90**
	other hay	1.18	2.11	5.21	4.02	3.33	2.09	**17.94**
	irrigated pasture	1.18	1.96	3.78	4.31	2.87	1.80	**15.90**
1974	winter wheat	1.21	3.75	6.77	6.08	2.60	--	**20.41**
	spring wheat	--	3.00	7.50	7.26	3.34	--	**21.10**
	barley	1.58	5.14	7.92	6.17	2.02	1.05	**23.88**
	oats	1.51	4.92	7.58	5.90	1.93	1.00	**22.84**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.90	2.16	6.13	4.50	2.30	1.61	**17.60**
	other hay	1.21	2.83	6.37	4.25	3.11	2.18	**19.95**
	irrigated pasture	1.21	2.63	4.62	4.56	2.69	1.88	**17.59**
1980	winter wheat	1.19	3.38	6.88	6.15	2.58	--	**20.18**
	spring wheat	--	2.34	6.61	6.36	2.87	--	**18.18**
	barley	1.56	4.62	8.06	6.25	2.01	1.07	**23.57**
	oats	1.56	4.62	8.06	6.25	2.01	1.07	**23.57**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.94	2.04	6.55	4.80	2.40	1.74	**18.47**
	other hay	1.17	2.49	6.34	4.21	3.02	2.19	**19.42**
	irrigated pasture	1.17	2.32	4.59	4.51	2.61	1.89	**17.09**
1982	winter wheat	1.40	3.66	6.67	6.57	2.95	--	**21.25**
	spring wheat	--	2.51	6.38	6.76	3.27	--	**18.92**
	barley	1.64	4.46	6.98	5.96	2.05	0.93	**22.02**
	oats	1.64	4.46	6.98	5.96	2.05	0.93	**22.02**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.13	2.27	6.52	5.25	2.82	1.73	**19.72**
	other hay	1.34	2.64	6.01	4.40	3.38	2.09	**19.86**
	irrigated pasture	1.34	2.45	4.36	4.72	2.92	1.80	**17.59**

Table 2.1.4.58 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Above Pathfinder subbasin (cont)

Year	Crop	"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
		Apr	May	Jun	Jul	Aug	Sep	Total
1978	winter wheat	1.41	3.47	6.72	6.70	2.72	--	**21.02**
	spring wheat	--	2.61	7.02	7.53	3.30	--	**20.46**
	barley	1.77	4.54	7.53	6.51	2.03	1.09	**23.47**
	oats	1.77	4.54	7.53	6.51	2.03	1.09	**23.47**
	dry beans	Not cultivated						
	sugar beets	Not cultivated						
	corn	Not cultivated						
	alfalfa	0.88	1.67	5.07	4.14	2.01	1.46	**15.23**
	other hay	1.40	2.59	6.26	4.64	3.22	2.35	**20.46**
	irrigated pasture	1.40	2.40	4.53	4.97	2.78	2.03	**18.11**
1996	winter wheat	Not cultivated						
	spring wheat	Not cultivated						
	barley	Not cultivated						
	oats	Not cultivated						
	dry beans	Not cultivated						
	sugar beets	Not cultivated						
	corn	Not cultivated						
	alfalfa	0.99	2.04	6.27	4.77	2.56	1.59	**18.22**
	other hay	1.18	2.38	5.80	4.01	3.07	1.91	**18.35**
	irrigated pasture	1.18	2.22	4.20	4.30	2.65	1.65	**16.20**
1979	winter wheat	1.13	3.01	5.89	5.60	2.18	--	**17.81**
	spring wheat	--	2.67	7.28	7.44	3.11	--	**20.50**
	barley	1.11	3.10	5.20	4.28	1.27	0.79	**15.75**
	oats	1.64	4.58	7.68	6.33	1.88	1.17	**23.28**
	dry beans	Not cultivated						
	sugar beets	Not cultivated						
	corn	Not cultivated						
	alfalfa	0.97	2.00	6.15	4.78	2.22	1.87	**17.99**
	other hay	1.34	2.71	6.62	4.68	3.11	2.62	**21.08**
	irrigated pasture	1.34	2.51	4.80	5.01	2.68	2.26	**18.60**
1999	winter wheat	Not cultivated						
	spring wheat	Not cultivated						
	barley	Not cultivated						
	oats	Not cultivated						
	dry beans	Not cultivated						
	sugar beets	Not cultivated						
	corn	Not cultivated						
	alfalfa	0.86	2.02	5.94	4.86	2.45	1.61	**17.74**
	other hay	1.00	2.29	5.33	3.96	2.86	1.88	**17.32**
	irrigated pasture	1.00	2.12	3.86	4.25	2.47	1.62	**15.32**

Table 2.1.4.58 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Above Pathfinder subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1993	winter wheat	1.28	3.96	6.58	6.58	2.86	--	**21.26**
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats	1.40	4.53	6.43	5.57	1.86	0.96	**20.75**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.85	2.02	5.28	4.32	2.24	1.56	**16.27**
	other hay	1.19	2.79	5.78	4.30	3.19	2.22	**19.47**
	irrigated pasture	1.19	2.59	4.19	4.60	2.75	1.92	**17.24**
1975	winter wheat	1.17	3.48	6.38	6.51	2.84	--	**20.38**
	spring wheat	--	2.47	6.29	6.89	3.24	--	**18.89**
	barley	1.11	3.47	5.44	4.80	1.61	0.83	**17.26**
	oats	1.40	4.37	6.87	6.06	2.03	1.04	**21.77**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.85	1.97	5.71	4.76	2.48	1.73	**17.50**
	other hay	1.00	2.25	5.16	3.91	2.91	2.03	**17.26**
	irrigated pasture	1.00	2.09	3.74	4.19	2.52	1.75	**15.29**
1998	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats			Not cultivated				
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.98	2.25	5.22	4.79	2.46	1.85	**17.55**
	other hay	1.17	2.62	4.81	4.02	2.95	2.22	**17.79**
	irrigated pasture	1.17	2.43	3.49	4.30	2.54	1.92	**15.85**
1988	winter wheat	1.54	3.82	7.01	6.67	2.81	--	**21.85**
	spring wheat	--	2.33	5.94	6.08	2.76	--	**17.11**
	barley	1.90	4.94	7.77	6.42	2.08	1.01	**24.12**
	oats	1.42	3.70	5.82	4.81	1.56	0.76	**18.07**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.12	2.16	6.23	4.85	2.44	1.61	**18.41**
	other hay	1.34	2.53	5.80	4.11	2.95	1.95	**18.68**
	irrigated pasture	1.34	2.35	4.20	4.40	2.55	1.68	**16.52**

Table 2.1.4.58 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Above Pathfinder subbasin (cont)

Year	Crop	"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
		Apr	May	Jun	Jul	Aug	Sep	Total
1976	winter wheat	1.35	3.98	6.48	6.70	2.69	--	**21.20**
	spring wheat	--	2.90	6.55	7.30	3.16	--	**19.91**
	barley	1.65	5.10	7.10	6.37	1.96	1.07	**23.25**
	oats	1.65	5.10	7.10	6.37	1.96	1.07	**23.25**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.79	1.79	4.57	3.87	1.85	1.37	**14.24**
	other hay	1.25	2.77	5.63	4.33	2.97	2.19	**19.14**
	irrigated pasture	1.25	2.58	4.08	4.64	2.57	1.89	**17.01**
1972	winter wheat	1.50	4.13	7.28	6.99	3.03	--	**22.93**
	spring wheat	--	2.87	7.03	7.27	3.39	--	**20.56**
	barley	1.71	4.92	7.42	6.18	2.05	1.02	**23.30**
	oats	1.71	4.92	7.42	6.18	2.05	1.02	**23.30**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.99	2.10	5.83	4.58	2.37	1.59	**17.46**
	other hay	1.29	2.68	5.89	4.21	3.12	2.09	**19.28**
	irrigated pasture	1.29	2.49	4.27	4.51	2.69	1.81	**17.06**
1991	winter wheat	1.18	3.46	6.34	5.90	2.64	--	**19.52**
	spring wheat			Not cultivated				
	barley	1.42	4.33	6.79	5.47	1.88	0.94	**20.83**
	oats	1.32	4.02	6.31	5.09	1.74	0.88	**19.36**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.89	1.99	5.77	4.38	2.35	1.59	**16.97**
	other hay	1.08	2.37	5.44	3.76	2.88	1.96	**17.49**
	irrigated pasture	1.08	2.20	3.94	4.03	2.48	1.68	**15.41**
2000	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats			Not cultivated				
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.08	2.19	6.03	4.80	2.44	1.53	**18.07**
	other hay	1.33	2.65	5.78	4.18	3.04	1.91	**18.89**
	irrigated pasture	1.33	2.46	4.19	4.48	2.63	1.65	**16.74**

Table 2.1.4.58 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Above Pathfinder subbasin (cont)

Year	Crop	"Yield adjusted" evapotranspiration, ET_C (inches, 1)						Total
		Apr	May	Jun	Jul	Aug	Sep	
1990	winter wheat	1.38	3.51	6.51	5.83	2.66	--	**19.89**
	spring wheat			Not cultivated				
	barley	1.72	4.59	7.29	5.65	1.98	1.08	**22.31**
	oats	1.38	3.69	5.87	4.55	1.59	0.87	**17.95**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.84	1.66	4.85	3.55	1.94	1.42	**14.26**
	other hay	1.14	2.17	5.05	3.36	2.63	1.92	**16.27**
	irrigated pasture	1.14	2.02	3.66	3.60	2.26	1.66	**14.34**
1994	winter wheat	1.54	4.64	8.17	7.16	3.21	--	**24.72**
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats	1.28	4.03	6.07	4.61	1.58	0.80	**18.37**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.97	2.24	6.22	4.46	2.38	1.64	**17.91**
	other hay	1.19	2.69	5.92	3.86	2.95	2.03	**18.64**
	irrigated pasture	1.19	2.50	4.28	4.13	2.55	1.75	**16.40**

Notes:
(1) See Tables 2.1.4.55, 2.1.4.56, and 2.1.4.57.

2.1.4.7.5 Adjusted Crop Evapotranspiration, ET_c – Pathfinder to Guernsey Subbasin

Annual crop yields and derived area-weighted annual crop yields for each crop during the 1972 through 2001 study period in the Pathfinder to Guernsey subbasin are shown in Table 2.1.4.59. As shown on this table, the Pathfinder to Guernsey subbasin consists primarily of portions of Converse, Natrona, and Platte Counties. These three counties and the portions of the subbasin that they comprise are shown at the top of Table 2.1.4.59. The assumptions, based on tabulated NASS yield data, underlying derivation of area-weighted yields for each crop are included near the tops of individual crop yield tabulations. Examples of these assumptions in the Pathfinder to Guernsey subbasin are that significant subbasin barley production ended after year 1994 and that significant subbasin corn production ended after year 1993. Table 2.1.4.59 also shows, below each set of tabulated crop yield data, years and yields that were graphed to derive polynomial equations for determining $Y_{env(C)}$ for each crop in the subbasin or Supreme Court (2001) yield adjustment equations that were used during this study. Area-weighted annual yield values, Y_{env} polynomial trend lines, and derived Y_{env} polynomial equations are graphed in Figure 2.1.4.20.

Table 2.1.4.59 Area-weighted crop yields - Pathfinder to Guernsey subbasin

	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
Portion of total Pathfinder to Guernsey subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)	0.0100	0.0000	0.5000	0.0000	0.0000	0.0000	0.3900	0.0000	0.1100	0.0000	
Crop: alfalfa											
Units: tons per acre											
Assumption: alfalfa production ongoing through entire 1972 - 2001 period in all counties located partially or entirely within Pathfinder to Guernsey subbasin; estimated yield values (in shaded cells) incorporated where actual data is not available											
National Agricultural Statistics Service (NASS) crop yield data	**County:**										**Pathfinder to Guernsey subbasin - area-weighted yield (1)**
Year	**Crop**	**Unit**	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	
1972	Alfalfa	ton/acre	2.20	1.90	2.03	2.66	3.30	3.00	2.42	2.80	3.30	1.80	2.34
1973	Alfalfa	ton/acre	2.27	1.90	2.30	2.80	3.50	3.10	2.46	2.80	3.17	1.90	2.48
1974	Alfalfa	ton/acre	2.20	1.90	2.20	2.91	3.65	3.60	2.21	2.71	2.80	1.70	2.29
1975	Alfalfa	ton/acre	2.00	2.06	2.30	3.11	3.53	2.80	2.50	2.31	2.85	1.70	2.46
1976	Alfalfa	ton/acre	2.11	1.50	2.40	3.50	3.70	2.51	2.57	2.12	2.60	1.60	2.51
1977	Alfalfa	ton/acre	1.90	1.60	1.90	2.89	3.50	2.80	2.10	1.80	2.30	1.30	2.04
1978	Alfalfa	ton/acre	2.60	1.60	2.10	3.32	3.94	2.50	2.19	2.40	2.40	1.60	2.19
1979	Alfalfa	ton/acre	2.50	2.00	2.20	3.80	3.80	2.90	2.24	2.60	3.30	1.70	2.36
1980	Alfalfa	ton/acre	2.30	2.10	2.00	3.00	3.60	2.90	2.60	2.30	2.84	1.20	2.35
1981	Alfalfa	ton/acre	2.60	2.20	2.20	3.40	4.40	2.80	2.60	2.90	2.90	1.50	2.46
1982	Alfalfa	ton/acre	2.54	2.47	2.03	2.90	3.73	3.35	3.54	2.55	2.50	1.44	2.70
1983	Alfalfa	ton/acre	2.32	2.67	2.24	3.20	4.70	3.50	2.90	2.85	2.87	1.20	2.59
1984	Alfalfa	ton/acre	2.40	2.20	2.00	3.20	4.03	3.40	2.30	3.00	3.10	1.80	2.26
1985	Alfalfa	ton/acre	1.13	2.29	1.64	2.90	3.10	3.23	1.21	2.60	2.81	1.55	1.61
1986	Alfalfa	ton/acre	2.10	1.71	2.24	3.51	4.29	3.90	2.27	3.46	3.22	1.54	2.38
1987	Alfalfa	ton/acre	2.00	1.64	2.00	3.45	4.00	3.13	2.04	2.15	2.78	1.29	2.12
1988	Alfalfa	ton/acre	2.20	2.12	1.65	3.24	4.54	3.67	1.93	2.53	2.63	1.33	1.89
1989	Alfalfa	ton/acre	1.93	2.24	1.83	3.14	4.14	4.44	2.18	1.96	3.00	1.38	2.11
1990	Alfalfa	ton/acre	1.94	1.65	2.36	3.40	4.25	3.50	2.25	2.00	2.97	1.62	2.40
1991	Alfalfa	ton/acre	1.71	2.10	2.40	3.49	4.09	3.50	2.30	2.60	3.90	1.40	2.54
1992	Alfalfa	ton/acre	1.80	2.10	2.00	3.10	3.81	3.70	2.50	2.30	2.80	1.30	2.30
1993	Alfalfa	ton/acre	2.30	2.10	2.70	3.42	4.50	3.60	2.80	3.40	3.50	1.40	2.85
1994	Alfalfa	ton/acre	2.10	2.00	2.10	3.13	4.20	4.09	2.36	3.40	3.50	1.70	2.38
1995	Alfalfa	ton/acre	1.44	2.44	2.85	3.43	4.89	3.88	2.44	3.33	3.42	1.50	2.77
1996	Alfalfa	ton/acre	1.87	2.15	2.39	3.31	4.46	3.61	2.48	2.40	3.48	1.46	2.56
1997	Alfalfa	ton/acre	1.90	2.16	2.60	4.00	4.52	4.11	3.10	2.83	4.12	1.93	2.98
1998	Alfalfa	ton/acre	2.02	2.17	2.20	3.46	4.40	4.00	2.64	3.33	4.01	1.60	2.59
1999	Alfalfa	ton/acre	2.10	2.18	2.64	3.47	4.52	3.86	2.60	3.80	3.83	1.64	2.78
2000	Alfalfa	ton/acre	1.87	2.00	1.97	3.53	4.31	4.06	2.65	3.33	3.30	1.63	2.40
2001	Alfalfa	ton/acre	1.74	2.00	2.40	3.55	4.40	3.58	2.63	3.75	3.40	1.65	2.62

Derivation of Y_{env} equation

Derived $Y_{env(ALFALFA)}$ polynomial equation: $y = -0.00008x^2 + 0.0335x + 0.3593$ (from 2001 Mod Dec)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.59 Area-weighted crop yields - Pathfinder to Guernsey subbasin (cont)

Crop: barley

Units: bushels per acre

Assumption: significant barley production data for the three counties comprising most of the subbasin ends in 1993 or 1994; assume no significant subbasin barley production after 1994

National Agricultural Statistics Service (NASS) crop yield data			County:										Pathfinder to Guernsey subbasin - area-weighted yield (1)
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Barley	bu/acre		50.00	51.00	73.00	56.00	67.00	50.00	51.00	66.00	46.00	52.26
1973	Barley	bu/acre		47.00	46.93	48.00	56.00	63.00	46.20	58.00	66.00	45.00	48.74
1974	Barley	bu/acre		52.00	39.00	62.00	60.53	53.09	58.00	42.47	60.43		48.77
1975	Barley	bu/acre		40.00	40.00	79.89	63.00	58.73	50.00	65.00	58.00		45.88
1976	Barley	bu/acre		60.00	50.00	79.00	56.00	58.94	70.00	50.00	50.00		57.80
1977	Barley	bu/acre	49.00	55.00	26.00	68.00	44.00	39.00	49.00	32.00	30.00		35.90
1978	Barley	bu/acre	62.00	70.00	32.00	77.00	62.00	61.00	60.00	42.00	37.00		44.09
1979	Barley	bu/acre	32.00	38.00	31.00	70.00	50.00	51.00	57.40	51.00	54.00		44.15
1980	Barley	bu/acre	43.60	60.00	53.11	79.79	53.47	49.76	34.00	42.55	49.53		45.70
1981	Barley	bu/acre	53.63	53.50	44.63	79.54	45.93	48.89	54.08	50.00	53.85		49.87
1982	Barley	bu/acre	65.00	65.00	55.00	63.40	57.06	56.28	50.90	55.00	62.00		54.82
1983	Barley	bu/acre	50.00	60.00	66.50	77.35	69.58	71.45	65.00	50.00	48.88		64.48
1984	Barley	bu/acre	50.00	70.00	66.00	65.00	70.00	70.00	64.00	51.00	54.00		64.40
1985	Barley	bu/acre	48.00	60.60	68.10	68.00	66.00	78.00	55.00	51.00	54.00		61.92
1986	Barley	bu/acre	50.00	73.29	66.33	77.49	68.46	74.29	57.00	65.00	69.00		63.49
1987	Barley	bu/acre	50.00	65.00	44.82	76.47	47.00	77.24	52.00	70.00	55.00		49.24
1988	Barley	bu/acre	60.00	70.00	33.00	51.88	45.00	41.48	46.00	42.00	41.00		39.55
1989	Barley	bu/acre	55.00	65.00	53.33	73.00	59.82	63.80	50.00	57.50	64.15		53.77
1990	Barley	bu/acre	60.00	70.00	55.00	73.03	62.50	67.76	45.00	60.50	66.44		52.96
1991	Barley	bu/acre	70.00	65.00	62.00	82.40	70.47	74.59	65.00	69.00	68.00		64.53
1992	Barley	bu/acre			66.00	83.20	70.00	75.00	81.00	61.00	60.00		71.19
1993	Barley	bu/acre			65.00	101.80	65.00	68.33	55.00	70.00	67.50		61.38
1994	Barley	bu/acre			55.00	70.00	69.00	66.00	75.00	76.00	36.00		60.71
1995	Barley	bu/acre			86.00	103.00	83.00	70.34			69.00		
1996	Barley	bu/acre				93.36	75.91	70.85			81.03		
1997	Barley	bu/acre				87.00	57.00	80.09	70.00		86.00		
1998	Barley	bu/acre				85.33			82.86		101.05		
1999	Barley	bu/acre				96.51	78.80						
2000	Barley	bu/acre				75.00					100.00		
2001	Barley	bu/acre				76.00							

Derivation of Y_{env} equation

Derived $Y_{env(BARLEY)}$ polynomial equation: $y = 0.0042x^2 + 0.3875x + 1.0387$ (from 2001 Mod Dec)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.59 Area-weighted crop yields - Pathfinder to Guernsey subbasin (cont)

Crop: corn

Units: bushels per acre

Assumption: corn production records for Converse, Natrona, and Platte counties, which comprise most of the Pathfinder to Guernsey subbasin, indicate that significant corn production in this subbasin ended after 1993; assume that Pathfinder to Guernsey corn production is not significant after 1993; generate estimated yield values (in shaded cells) prior to 1994 where actual data is not available

National Agricultural Statistics Service (NASS) crop yield data			County:										Pathfinder to Guernsey subbasin - area-weighted yield (1)
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Corn	bu/acre		70.00	57.00	80.00	94.00	78.00	70.00		94.00		66.14
1973	Corn	bu/acre	71.00	74.00	55.00	84.78	89.22	97.00	73.00		116.00		69.44
1974	Corn	bu/acre		78.00	60.00	50.50	79.50	101.25	50.00		77.00		57.97
1975	Corn	bu/acre		63.00	66.00	59.00	85.07	66.00	55.00		96.00		65.01
1976	Corn	bu/acre		55.00	70.00	85.00	93.08	94.00	55.00		98.00		67.23
1977	Corn	bu/acre		55.00	76.00	86.00	94.00	95.00	55.00		73.80		67.57
1978	Corn	bu/acre		61.00	91.00	85.40	89.50	66.00	61.00	88.00	73.00		77.32
1979	Corn	bu/acre			80.00	86.00	89.83	75.00	75.00	70.00	88.00		78.93
1980	Corn	bu/acre			90.00	90.00	102.90	95.00	85.00	93.00	90.00		88.05
1981	Corn	bu/acre			84.00	84.00	113.53	90.00	74.00	92.00	112.00		83.18
1982	Corn	bu/acre			84.00	98.00	111.00	95.00	87.00	88.00	104.94		87.47
1983	Corn	bu/acre			85.00	94.00	110.55	101.00	78.00	100.00	95.00		83.37
1984	Corn	bu/acre			85.00	90.00	105.39	97.00	65.00	99.00	90.00		77.75
1985	Corn	bu/acre			86.00	91.00	100.00	94.00	60.00	90.00	92.32		76.56
1986	Corn	bu/acre			85.00	104.00	119.70	119.00	76.00	102.00	108.00		84.02
1987	Corn	bu/acre			92.00	91.00	117.75	112.11	80.00	95.00	97.00		87.87
1988	Corn	bu/acre			126.00	95.00	130.78	127.00	90.00	108.00	104.00		109.54
1989	Corn	bu/acre			91.00	92.08	96.91	102.00	85.00	90.00	98.14		89.45
1990	Corn	bu/acre			120.00	92.00	127.99	123.00	90.00	113.33	111.80		107.40
1991	Corn	bu/acre			99.00	95.00	125.99	109.04	94.00	66.00	106.00		97.82
1992	Corn	bu/acre			97.00	78.00	101.81	102.00	38.00		92.00		73.44
1993	Corn	bu/acre			80.00	88.50	82.00	65.50	79.00		80.00		79.61
1994	Corn	bu/acre				111.00	130.39	111.72			103.00		
1995	Corn	bu/acre				108.00					80.00		
1996	Corn	bu/acre				105.00	130.87		103.33		101.90		
1997	Corn	bu/acre				126.07	140.00	135.00			132.00		
1998	Corn	bu/acre					136.99	127.94			138.26		
1999	Corn	bu/acre				101.43	122.17	120.00			135.00		
2000	Corn	bu/acre				112.86	136.63	142.86			130.81		
2001	Corn	bu/acre						135.00			112.94		

Derivation of Y_{env} equation

Derived $Y_{env(CORN)}$ polynomial equation: $y = -0.0206x^2 + 4.9989x - 182.54$ (from 2001 Mod Dec)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.59 Area-weighted crop yields - Pathfinder to Guernsey subbasin (cont)

Crop: dry beans

Units: hundred pounds per acre (cwt/acre)

Assumption: As shown in Table 2.1.4.52., only about 1 percent of Pathfinder to Guernsey irrigated acreage is assumed to be cultivated in dry beans; determine dry bean yields based on area-weighted yields from Converse and Platte Counties; including estimated Converse County yields after year 1991.

National Agricultural Statistics Service (NASS) crop yield data			County:										Pathfinder to Guernsey subbasin - area-weighted yield (1)
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Dry beans	cwt/acre			17.75	18.80	19.70	18.30			19.50		18.07
1973	Dry beans	cwt/acre			17.50	17.50	18.20	18.00			17.50		17.50
1974	Dry beans	cwt/acre			17.20	17.80	19.48	19.90			19.90		17.69
1975	Dry beans	cwt/acre			15.40	18.30	16.84	17.60			17.60		15.80
1976	Dry beans	cwt/acre			16.00	19.30	17.80	16.00			16.50		16.09
1977	Dry beans	cwt/acre			14.23	19.50	17.90	17.60			14.00		14.19
1978	Dry beans	cwt/acre			15.80	16.60	16.29	14.30			15.80		15.80
1979	Dry beans	cwt/acre			19.00	21.00	19.11	18.00			18.00		18.82
1980	Dry beans	cwt/acre			18.80	19.00	21.70	20.70			18.43		18.73
1981	Dry beans	cwt/acre			17.00	21.30	22.04	20.60			22.10		17.92
1982	Dry beans	cwt/acre			15.00	19.70	18.07	16.60			17.00		15.36
1983	Dry beans	cwt/acre			14.60	19.60	18.80	16.70			18.50		15.30
1984	Dry beans	cwt/acre			19.00	19.80	22.20	20.00			19.46		19.08
1985	Dry beans	cwt/acre			18.00	15.10	19.00	18.80			14.40		17.35
1986	Dry beans	cwt/acre			18.00	19.50	18.65	17.80			16.35		17.70
1987	Dry beans	cwt/acre			19.00	21.40	19.20	18.56			17.00		18.64
1988	Dry beans	cwt/acre			20.00	17.42	21.30	17.53			18.50		19.73
1989	Dry beans	cwt/acre			17.00	19.00	19.18	20.70			18.61		17.29
1990	Dry beans	cwt/acre			17.50	17.00	21.03	20.79			19.00		17.77
1991	Dry beans	cwt/acre			17.00	20.00	19.85	17.87			18.93		17.35
1992	Dry beans	cwt/acre			18.10	20.00	18.83	15.56			15.67		17.66
1993	Dry beans	cwt/acre			17.92	13.40	14.58	14.79			14.57		17.32
1994	Dry beans	cwt/acre			17.50	18.17	20.45	20.60			16.00		17.23
1995	Dry beans	cwt/acre			17.60	17.78	17.96	18.24			17.70		17.62
1996	Dry beans	cwt/acre			17.62	26.34	23.99	22.20			16.94		17.50
1997	Dry beans	cwt/acre			17.75	23.52	21.91	23.64			20.59		18.26
1998	Dry beans	cwt/acre			17.68	22.41	22.63	24.25			22.58		18.56
1999	Dry beans	cwt/acre			17.63	19.14	21.02	23.24			18.63		17.81
2000	Dry beans	cwt/acre			17.66	21.05	22.86	24.68			18.12		17.74
2001	Dry beans	cwt/acre			17.67	18.56	20.81	26.26			18.85		17.88

Derivation of Y_{env} equation

Derived $Y_{env(DRY\ BEANS)}$ polynomial equation: $y = (- 0.0966x^2 + 27.666x + 268.51)/100$ (from 2001 Mod Dec)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.59 Area-weighted crop yields - Pathfinder to Guernsey subbasin (cont)

Crop: oats

Units: bushels per acre

Assumption: assume oats production through the entire period of record; estimate yields for years during which yield data is not available.

National Agricultural Statistics Service (NASS) crop yield data			County:										Pathfinder to Guernsey subbasin - area-weighted yield (1)
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Oats	bu/acre	50.00	61.00	66.00	65.67	64.00	54.33	57.00	66.00	60.00	55.00	62.33
1973	Oats	bu/acre	50.00	50.00	52.20	53.21	53.00	61.00	50.00	59.00	49.00	50.00	51.49
1974	Oats	bu/acre	39.00	50.00	33.00	50.00	48.00	63.00	43.23	43.00	59.81	60.00	40.33
1975	Oats	bu/acre	52.00	52.00	45.82	60.00	46.00	49.00	50.40	40.00	46.00	44.00	48.15
1976	Oats	bu/acre	56.00	59.00	56.79	58.00	54.00	63.00	58.00	60.00	55.00	53.00	57.63
1977	Oats	bu/acre	52.00	53.00	30.00	63.62	44.00	34.00	51.85	51.00	42.00	52.00	40.36
1978	Oats	bu/acre	58.50	62.00	75.35	76.00	76.00	76.00	62.00	79.00	77.00	79.00	70.91
1979	Oats	bu/acre	67.00	62.00	43.00	62.00	56.00	48.00	66.18	46.00	39.00	77.50	52.27
1980	Oats	bu/acre	58.00	72.00	48.00	60.00	59.70	69.00	64.00	55.00	59.00	65.00	56.03
1981	Oats	bu/acre	43.00	46.73	49.00	59.03	65.63	67.00	50.00	54.00	58.00	64.00	50.81
1982	Oats	bu/acre	65.50	62.00	70.00	64.60	79.00	79.42	68.00	74.00	59.00	74.00	68.67
1983	Oats	bu/acre	65.00	60.00	58.17	66.23	60.00	64.00	61.00	60.00	51.00	64.00	59.14
1984	Oats	bu/acre	53.00	54.00	52.00	73.00	55.00	64.46	54.00	58.00	46.29	54.00	52.68
1985	Oats	bu/acre	53.00	51.00	59.00	65.65	60.00	59.00	50.44	58.00	47.00	63.00	54.87
1986	Oats	bu/acre	65.00	71.00	60.00	74.00	63.00	75.00	53.00	63.00	77.00	60.00	59.79
1987	Oats	bu/acre	61.00	68.00	48.36	63.33	80.21	85.27	51.00	71.00	69.00	56.00	52.27
1988	Oats	bu/acre	44.00	46.00	37.50	62.00	44.44	34.50	34.00	39.00	33.00	52.00	36.08
1989	Oats	bu/acre	60.00	62.00	42.50	62.00	47.00	63.00	52.00	50.00	50.00	61.00	47.63
1990	Oats	bu/acre	45.00	50.00	56.60	63.00	55.50	56.31	47.00	50.00	55.00	50.00	53.13
1991	Oats	bu/acre	45.00	56.00	72.00	71.00	69.00	60.00	53.00	50.00	85.00	56.00	66.47
1992	Oats	bu/acre		55.00	55.00	74.40	72.00	64.00	58.00	40.00	55.00	72.00	56.17
1993	Oats	bu/acre		65.00	59.00	86.00	86.00	82.75	72.50	66.00	77.00	65.00	66.25
1994	Oats	bu/acre		45.00	46.00	84.00	77.00	70.00	50.00	62.00	62.00	55.00	49.32
1995	Oats	bu/acre			58.00	94.12			91.67		73.64		72.85
1996	Oats	bu/acre			58.00	80.69		46.67	44.23	70.00	71.00		54.06
1997	Oats	bu/acre			51.82	85.42	71.43	75.00	72.22	80.00	64.29		61.15
1998	Oats	bu/acre			55.00	88.89		71.67	75.00		50.00		62.25
1999	Oats	bu/acre			55.00	94.29	70.00		78.00		64.00		64.96
2000	Oats	bu/acre			56.00	108.89			72.00		65.00		63.23
2001	Oats	bu/acre			55.00	76.67	67.00	75.00	68.00		96.67		64.65

Derivation of Y_{env} equation

Derived $Y_{env(OATS)}$ polynomial equation: $y = 0.0042x^2 + 0.3875x + 1.0387$ (from 2001 Mod Dec)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.59 Area-weighted crop yields - Pathfinder to Guernsey subbasin (cont)

Crop: other hay (not including alfalfa)

Units: tons per acre

Assumption: other hay production ongoing through entire 1972 - 2001 period in counties located partially or entirely within Pathfinder to Guernsey subbasin; estimated yield values (in shaded cells) incorporated where actual data are not available

National Agricultural Statistics Service (NASS) crop yield data			County:										Pathfinder to Guernsey subbasin - area-weighted yield (1)
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Other hay	ton/acre	1.10	1.11	1.16	1.50	1.20	1.50	1.00	1.10	1.30	1.17	1.12
1973	Other hay	ton/acre	1.00	1.13	1.20	1.70	1.20	1.30	1.60	1.00	1.10	1.45	1.36
1974	Other hay	ton/acre	1.00	1.19	1.40	1.53	1.20	1.40	0.80	1.10	1.20	1.23	1.15
1975	Other hay	ton/acre	0.84	1.10	0.90	1.46	1.50	1.04	1.30	0.90	1.10	1.05	1.09
1976	Other hay	ton/acre	1.01	1.20	1.10	1.56	1.20	0.70	1.00	1.00	0.87	1.27	1.05
1977	Other hay	ton/acre	0.90	0.98	1.00	1.24	1.13	0.70	0.80	0.90	1.00	1.00	0.93
1978	Other hay	ton/acre	1.10	1.30	0.90	1.80	1.60	0.90	1.30	1.10	1.20	1.14	1.10
1979	Other hay	ton/acre	1.20	1.40	0.90	2.24	1.20	1.37	1.20	1.20	1.10	1.32	1.05
1980	Other hay	ton/acre	0.90	1.30	1.39	1.51	1.10	1.10	0.90	0.90	1.40	1.11	1.21
1981	Other hay	ton/acre	1.00	1.40	1.40	1.63	1.50	1.20	1.20	1.40	1.47	1.18	1.34
1982	Other hay	ton/acre	1.16	1.59	1.70	1.60	1.86	1.03	2.40	1.61	1.10	1.16	1.92
1983	Other hay	ton/acre	1.31	1.62	2.20	2.20	1.50	1.40	1.85	1.10	1.55	1.28	2.01
1984	Other hay	ton/acre	1.20	1.60	1.40	2.20	1.80	1.10	1.20	1.40	1.40	1.20	1.33
1985	Other hay	ton/acre	1.06	1.66	1.27	1.91	1.47	1.38	1.24	1.00	1.37	1.03	1.28
1986	Other hay	ton/acre	1.24	1.37	0.90	1.73	2.02	1.64	1.90	1.90	1.61	1.18	1.38
1987	Other hay	ton/acre	1.44	1.57	1.36	2.30	1.48	1.99	1.67	1.90	1.15	0.84	1.47
1988	Other hay	ton/acre	1.37	1.36	0.75	0.97	1.41	1.16	1.55	1.60	1.34	0.80	1.14
1989	Other hay	ton/acre	0.68	0.87	0.70	1.29	1.36	1.31	0.78	1.90	1.11	0.78	0.78
1990	Other hay	ton/acre	1.10	1.27	1.00	1.56	1.55	1.53	1.01	1.87	1.60	0.99	1.08
1991	Other hay	ton/acre	1.90	1.34	1.60	1.79	1.83	1.70	1.70	1.40	1.70	1.09	1.67
1992	Other hay	ton/acre	1.11	1.30	1.30	1.79	1.40	1.29	0.90	0.90	1.00	0.89	1.12
1993	Other hay	ton/acre	1.30	1.80	1.90	2.10	2.10	2.10	1.80	1.30	1.20	1.10	1.80
1994	Other hay	ton/acre	1.20	1.42	1.20	1.70	1.50	1.90	0.90	1.40	1.00	0.86	1.07
1995	Other hay	ton/acre	1.10	1.66	1.70	1.80	1.80	1.71	1.26	1.40	1.70	1.23	1.54
1996	Other hay	ton/acre	1.32	1.50	1.56	1.84	1.66	1.67	1.31	0.90	1.38	1.03	1.46
1997	Other hay	ton/acre	1.21	1.54	1.81	2.17	2.00	1.58	1.60	2.00	2.11	1.10	1.77
1998	Other hay	ton/acre	1.14	1.58	1.62	1.92	2.20	1.70	1.37	2.33	1.29	1.06	1.50
1999	Other hay	ton/acre	1.50	1.54	1.90	1.89	1.67	1.50	1.29	1.13	1.90	1.18	1.68
2000	Other hay	ton/acre	1.40	1.56	1.67	1.92	1.50	1.58	1.37	1.00	1.00	1.09	1.49
2001	Other hay	ton/acre	1.03	1.13	1.71	1.91	2.25	1.31	1.39	1.00	1.31	1.01	1.55

Derivation of Y_{env} equation

Derived $Y_{env(OTHER\ HAY)}$ polynomial equation: $y = 0.0003x^2 - 0.0262x + 1.5511$ (from 2001 Mod Dec)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.59 Area-weighted crop yields - Pathfinder to Guernsey subbasin (cont)

Crop: spring wheat

Units: tons per acre

Assumption: insignificant spring wheat production in the Pathfinder to Guernsey subbasin after year 1990; estimate annual yield data as required in Natrona County through year 1990.

National Agricultural Statistics Service (NASS) crop yield data			County:										Pathfinder to Guernsey subbasin - area-weighted yield (1)
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Spring wheat	bu/acre		40.00	35.00	47.00	35.00		36.00		34.00		35.28
1973	Spring wheat	bu/acre		34.00	33.67	44.00	33.00		30.00	33.00	33.00		32.17
1974	Spring wheat	bu/acre		36.00	35.33	50.00	33.00	41.00	28.00	35.00	37.00		32.66
1975	Spring wheat	bu/acre		34.00	40.00	37.00	42.00	35.00	27.00	38.00	35.00		34.38
1976	Spring wheat	bu/acre		35.00	43.00	45.00	40.00	35.00	27.00	39.00	33.00		35.66
1977	Spring wheat	bu/acre		34.00	38.00	47.00	39.00	33.00	30.00	36.00	31.00		34.11
1978	Spring wheat	bu/acre		36.00	32.00	55.00	34.00	33.00	32.00	34.00	32.00		32.00
1979	Spring wheat	bu/acre		38.00	49.40	61.00	42.00	50.00	34.00	45.00	50.00		43.46
1980	Spring wheat	bu/acre		32.00	35.00	41.67	32.00	34.00	30.00	33.00	34.00		32.94
1981	Spring wheat	bu/acre		27.00	29.50	34.00	34.00	36.00	25.00	32.00	37.00		28.57
1982	Spring wheat	bu/acre		38.00	37.25	50.00	52.00	58.00	32.00	52.33	56.67		37.34
1983	Spring wheat	bu/acre		40.00	40.00	59.60	54.00	60.00	31.00	53.00	60.00		38.69
1984	Spring wheat	bu/acre		60.00	44.00	63.00	55.00	50.00	30.00	53.00	45.00		38.65
1985	Spring wheat	bu/acre		49.00	40.00	49.00	40.75	41.00	30.00	42.00	38.00		35.88
1986	Spring wheat	bu/acre		44.00	50.00	40.00	63.00	57.50	30.00	55.00	53.00		42.53
1987	Spring wheat	bu/acre		36.00	40.00	42.00	34.00	42.00	31.00	40.00	38.00		36.27
1988	Spring wheat	bu/acre		37.00	41.00	52.00	55.00	52.00	30.00	44.00	41.00		36.71
1989	Spring wheat	bu/acre		43.00	43.00	65.00	46.00	43.00	30.00	47.00	47.00		38.37
1990	Spring wheat	bu/acre			30.00	56.00	50.00	47.00	30.00		30.00		30.00
1991	Spring wheat	bu/acre						54.00	48.00	50.00			
1992	Spring wheat	bu/acre				65.00	40.00	73.00		36.00			
1993	Spring wheat	bu/acre				89.00		79.00		58.00			
1994	Spring wheat	bu/acre				54.17	41.00	45.00		44.17			
1995	Spring wheat	bu/acre				62.00	67.00	68.46					
1996	Spring wheat	bu/acre				66.67		60.00					
1997	Spring wheat	bu/acre					44.00	58.00			50.00		
1998	Spring wheat	bu/acre											
1999	Spring wheat	bu/acre											
2000	Spring wheat	bu/acre											
2001	Spring wheat	bu/acre											

Derivation of Y_{env} equation

Derived $Y_{env(SPRING\ WHEAT)}$ polynomial equation: $y = 0.0042x^2 + 0.3875x + 1.0387$ (from 2001 Mod Dec)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.59 Area-weighted crop yields - Pathfinder to Guernsey subbasin (cont)

Crop: sugar beets
Units: tons per acre

Assumption: as shown in Table 2.1.4.52., sugar beet production occurs in about one-half of one percent of Pathfinder to Guernsey subbasin irrigated acreage; use Platte County yields to represent subbasin yields

National Agricultural Statistics Service (NASS) crop yield data			County:										Pathfinder to Guernsey subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield (1)
1972	Sugar beets	ton/acre			14.70	19.90	22.93	15.30			22.80		22.80
1973	Sugar beets	ton/acre			10.29	14.60	19.31	11.50			16.40		16.40
1974	Sugar beets	ton/acre					18.46	15.86			17.76		17.76
1975	Sugar beets	ton/acre					20.20	15.64			17.66		17.66
1976	Sugar beets	ton/acre					20.90	17.81			17.85		17.85
1977	Sugar beets	ton/acre					19.40	20.20			14.80		14.80
1978	Sugar beets	ton/acre					18.61	14.60			16.70		16.70
1979	Sugar beets	ton/acre					18.64	14.60			17.90		17.90
1980	Sugar beets	ton/acre					21.80	20.20			17.00		17.00
1981	Sugar beets	ton/acre					25.31	50.00			20.60		20.60
1982	Sugar beets	ton/acre					19.40	22.00			18.30		18.30
1983	Sugar beets	ton/acre					15.78	13.50			12.60		12.60
1984	Sugar beets	ton/acre				13.70	20.87	11.20			15.60		15.60
1985	Sugar beets	ton/acre				17.40	22.80	25.10			19.60		19.60
1986	Sugar beets	ton/acre				18.90	23.41	23.60			19.90		19.90
1987	Sugar beets	ton/acre				16.30	21.50	20.40			17.80		17.80
1988	Sugar beets	ton/acre				19.20	22.00	23.25			19.57		19.57
1989	Sugar beets	ton/acre				21.97	19.07	19.75			17.09		17.09
1990	Sugar beets	ton/acre				20.19	21.00	13.53			19.34		19.34
1991	Sugar beets	ton/acre				21.05	21.47	17.17			16.72		16.72
1992	Sugar beets	ton/acre				20.88	16.97	17.53			16.53		16.53
1993	Sugar beets	ton/acre				19.86	15.63	17.08			17.84		17.84
1994	Sugar beets	ton/acre				16.93	20.56	20.25			20.49		20.49
1995	Sugar beets	ton/acre				20.72	16.34	15.75			13.87		13.87
1996	Sugar beets	ton/acre				20.02	16.88	17.81			17.95		17.95
1997	Sugar beets	ton/acre				22.78	15.69	14.67			16.63		16.63
1998	Sugar beets	ton/acre				21.07	19.37	18.70			17.80		17.80
1999	Sugar beets	ton/acre				21.25	18.40	18.17			18.39		18.39
2000	Sugar beets	ton/acre				21.54	18.70	15.41			19.49		19.49
2001	Sugar beets	ton/acre				18.56	17.71	17.11			19.06		19.06

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1974	2	17.76
	1975	3	17.66
	1976	4	17.85
	1982	10	18.30
	1985	13	19.60
	1986	14	19.90
	1988	16	19.57
	1990	18	19.34
	1994	22	20.49

Derived $Y_{env(SUGARBEETS)}$ polynomial equation: $y = -0.0011x^2 + 0.1666x + 17.101$ (see Figure 2.1.4.20.)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.59 Area-weighted crop yields - Pathfinder to Guernsey subbasin (cont)

Crop: winter wheat
Units: bushels per acre

Assumption: as shown in Table 2.1.4.52., winter wheat production occurs in about one-half of one percent of Pathfinder to Guernsey subbasin irrigated acreage; use area-weighted average yields, including estimated annual yields where required for Converse and Platte Counties

National Agricultural Statistics Service (NASS) crop yield data			County:										Pathfinder to Guernsey subbasin - area-weighted yield (1)
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Winter wheat	bu/acre		40.00	40.00	41.00	43.06	42.00		42.00	40.00		40.00
1973	Winter wheat	bu/acre		39.00	38.00	37.00	38.54	37.00		38.00	38.00		38.00
1974	Winter wheat	bu/acre		33.00	36.00	32.00	37.17	36.00		36.00	38.00		36.36
1975	Winter wheat	bu/acre		36.00	38.00	32.00	39.54	36.00		37.00	37.00		37.82
1976	Winter wheat	bu/acre		36.00	32.00	39.00	33.00	33.00		32.00	29.00		31.46
1977	Winter wheat	bu/acre		34.00	25.00	38.00	23.00	26.00		22.00	22.50		24.55
1978	Winter wheat	bu/acre		35.60	34.00		44.00	33.59		33.00	35.00		34.18
1979	Winter wheat	bu/acre		30.00	23.00		35.00	42.00		38.00	34.56		25.08
1980	Winter wheat	bu/acre		34.32	29.00		48.00	33.31		28.00	35.00		30.08
1981	Winter wheat	bu/acre		33.98	32.00		41.00	40.41		33.50	35.00		32.54
1982	Winter wheat	bu/acre		40.00	36.00		51.50	53.00		33.00	39.00		36.54
1983	Winter wheat	bu/acre		38.00	38.00		53.00	54.00		44.00	40.00		38.36
1984	Winter wheat	bu/acre		50.00	40.00	53.00	42.60	59.00		37.00	35.00		39.10
1985	Winter wheat	bu/acre		45.00	35.00	52.00	34.00	38.73		35.00	33.00		34.64
1986	Winter wheat	bu/acre		32.00	38.00	55.00	46.20	60.00		36.00	35.00		37.46
1987	Winter wheat	bu/acre		35.00	37.00	51.00	39.00	56.00		41.00	40.00		37.54
1988	Winter wheat	bu/acre		40.00	39.25	53.00	50.00	54.63		39.00	38.00		39.02
1989	Winter wheat	bu/acre		35.00	36.00	36.00	43.00	46.98		33.00	41.00		36.90
1990	Winter wheat	bu/acre		40.00	40.00	58.00	46.67	65.45		40.00	43.33		40.60
1991	Winter wheat	bu/acre	47.00	40.00	32.50	68.33	55.91	50.32		50.25	45.67		34.87
1992	Winter wheat	bu/acre		43.00	42.00	55.00	46.00	55.59		42.00	47.00		42.90
1993	Winter wheat	bu/acre		50.00	50.00	60.50	52.50	56.96		54.00	55.00		50.90
1994	Winter wheat	bu/acre		50.00	40.00	65.00	65.00	42.00		41.00	50.00		41.80
1995	Winter wheat	bu/acre			41.00		59.00	80.00		75.00	82.00		48.39
1996	Winter wheat	bu/acre			41.00		42.40	54.29			63.64		45.08
1997	Winter wheat	bu/acre			43.00		61.21	80.25			56.25		45.39
1998	Winter wheat	bu/acre			43.00		72.11	76.92			61.00		46.25
1999	Winter wheat	bu/acre			42.00		65.00	79.20			60.00		45.25
2000	Winter wheat	bu/acre			42.00		60.00	76.92					34.43
2001	Winter wheat	bu/acre			42.00		73.33	72.00			50.00		43.44

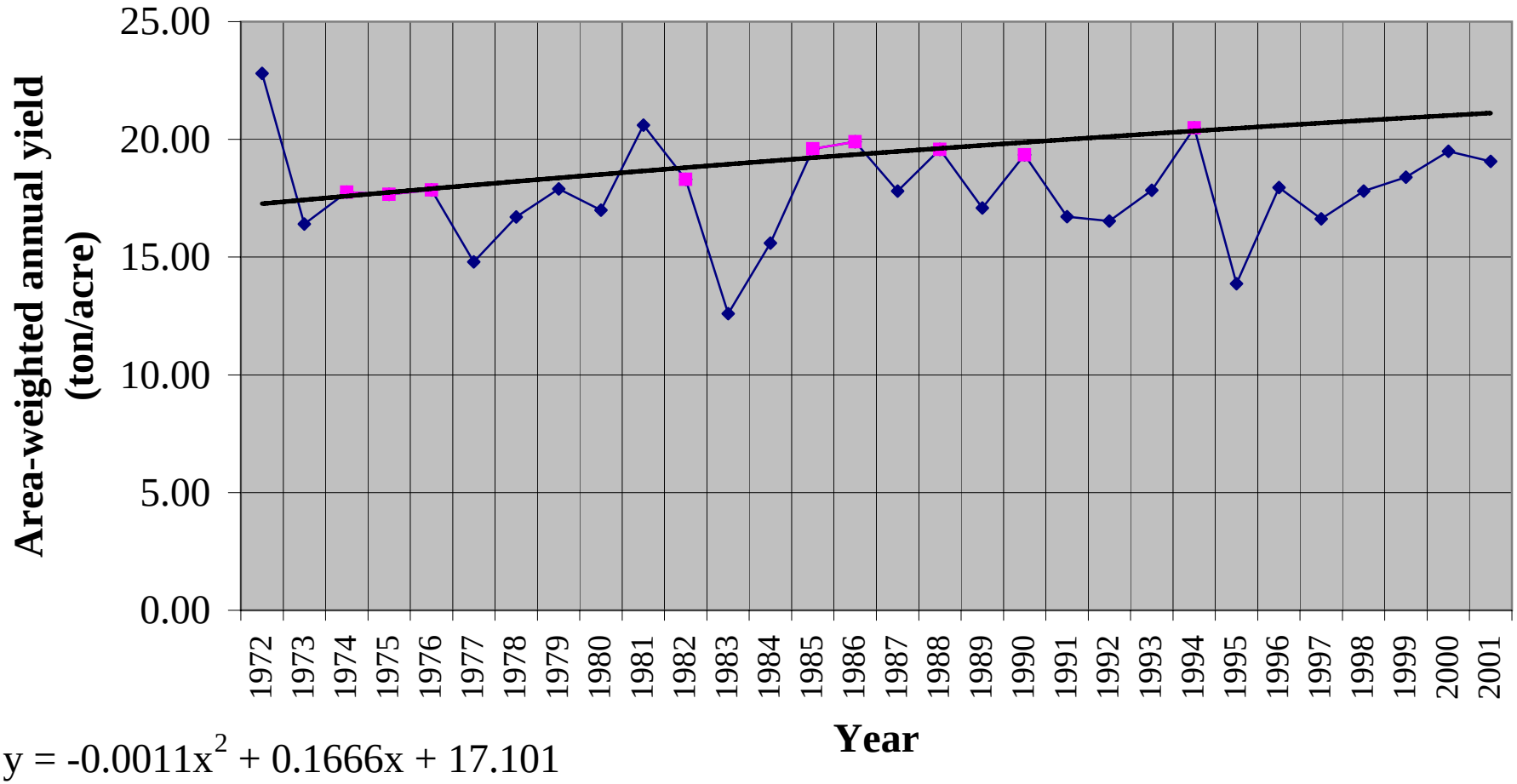
Derivation of Y_{env} equation

Derived $Y_{env(WINTER\ WHEAT)}$ polynomial equation: $y = 0.0042x^2 + 0.3875x + 1.0387$ (from 2001 Mod Dec)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Notes:
(1) See Table 2.1.4.51.

Figure 2.1.4.20
Area-weighted annual sugar beet yields and Y_{env}
polynomial trend line and equation
Pathfinder to Guernsey subbasin



Derivation of adjusted, yield-based crop evapotranspiration in the Pathfinder to Guernsey subbasin during high stream flow years using $Y_{env(C)}$ values from Table 2.1.4.59 and Figure 2.1.4.20 equations is summarized in Table 2.1.4.60.

Table 2.1.4.60 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Pathfinder to Guernsey subbasin

1983						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1983 - 1900 = 83					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.61	5.17	6.82	5.06	--	--
Average yield, Yi (bu/acre) (2)			38.36			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			62.14			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.07**	**3.45**	**4.55**	**3.38**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1983 - 1900 = 83					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.32	4.10	7.00	5.65	--	--
Average yield, Yi (bu/acre) (2)			38.69			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.14			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**0.89**	**2.75**	**4.70**	**3.80**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1983 - 1900 = 83					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.40	4.55	7.07	6.55	2.29	1.15
Average yield, Yi (bu/acre) (2)			64.48			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.14			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.40**	**4.55**	**7.07**	**6.55**	**2.29**	**1.15**

Table 2.1.4.60 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Pathfinder to Guernsey subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec)					
	x = 1983 - 1900 = 83					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.40	4.55	7.07	6.55	2.29	1.15
Average yield, Yi (bu/acre) (2)			59.14			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.14			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.34**	**4.36**	**6.77**	**6.28**	**2.19**	**1.10**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation:					
	y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec)					
	x = 1983 - 1900 = 83					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.75	1.17	5.26	8.68	3.89	1.15
Average yield, Yi (cwt/acre) (2)			15.30			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.99			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.62**	**0.97**	**4.37**	**7.21**	**3.23**	**0.96**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.)					
	x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.29	2.24	4.86	8.07	7.43	3.96
Average yield, Yi (tons/acre) (2)			12.60			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.80			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**0.92**	**1.60**	**3.47**	**5.76**	**5.30**	**2.82**

Table 2.1.4.60 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Pathfinder to Guernsey subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation:					
	y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec)					
	x = 1983 - 1900 = 83					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.75	1.85	6.83	9.20	6.81	1.92
Average yield, Yi (bu/acre) (2)			83.37			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			90.46			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.70**	**1.73**	**6.40**	**8.62**	**6.38**	**1.80**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec)					
	x = 1983 - 1900 = 83					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.10	4.80	5.27	7.70	3.77	2.31
Average yield, Yi (tons/acre) (2)			2.59			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.59			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.10**	**4.80**	**5.27**	**7.70**	**3.77**	**2.31**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec)					
	x = 1983 - 1900 = 83					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.50	3.27	6.18	8.02	4.62	3.42
Average yield, Yi (tons/acre) (2)			2.01			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.44			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.50**	**3.27**	**6.18**	**8.02**	**4.62**	**3.42**

Table 2.1.4.60 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Pathfinder to Guernsey subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1983 - 1900 = 83					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.90	2.15	4.33	5.67	5.21	3.56
Average yield, Yi (2)			2.01			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.44			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**0.90**	**2.15**	**4.33**	**5.67**	**5.21**	**3.56**
	1973					
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1973 - 1900 = 73					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.56	5.72	7.92	4.92	--	--
Average yield, Yi (bu/acre) (2)			38.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			51.71			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.20**	**4.40**	**6.09**	**3.79**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1973 - 1900 = 73					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.27	4.53	8.13	5.49	--	--
Average yield, Yi (bu/acre) (2)			32.17			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			51.71			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**0.85**	**3.04**	**5.46**	**3.69**	**--**	**--**

Table 2.1.4.60 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Pathfinder to Guernsey subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1973 - 1900 = 73					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.35	5.03	8.22	6.37	2.31	0.96
Average yield, Yi (bu/acre) (2)			48.74			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			51.71			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.28**	**4.78**	**7.81**	**6.05**	**2.19**	**0.91**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1973 - 1900 = 73					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.35	5.03	8.22	6.37	2.31	0.96
Average yield, Yi (bu/acre) (2)			51.49			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			51.71			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.35**	**5.01**	**8.19**	**6.35**	**2.30**	**0.96**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1973 - 1900 = 73					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.72	1.29	6.11	8.43	3.92	0.96
Average yield, Yi (cwt/acre) (2)			17.50			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			17.73			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.71**	**1.28**	**6.04**	**8.33**	**3.88**	**0.95**

Table 2.1.4.60 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Pathfinder to Guernsey subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.24	2.47	5.65	7.84	7.48	3.31
Average yield, Yi (tons/acre) (2)			16.40			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			17.27			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.19**	**2.36**	**5.40**	**7.50**	**7.15**	**3.17**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1973 - 1900 = 73					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.72	2.04	7.94	8.93	6.86	1.61
Average yield, Yi (bu/acre) (2)			69.44			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			72.60			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.69**	**1.97**	**7.66**	**8.62**	**6.62**	**1.55**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1973 - 1900 = 73					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.03	5.30	6.13	7.48	3.79	1.93
Average yield, Yi (tons/acre) (2)			2.48			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.38			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.03**	**5.30**	**6.13**	**7.48**	**3.79**	**1.93**

Table 2.1.4.60 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Pathfinder to Guernsey subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1973 - 1900 = 73					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.45	3.62	7.19	7.79	4.66	2.86
Average yield, Yi (tons/acre) (2)			1.36			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.24			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.45**	**3.62**	**7.19**	**7.79**	**4.66**	**2.86**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1973 - 1900 = 73					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.87	2.37	5.04	5.50	5.25	2.97
Average yield, Yi (2)			1.36			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.24			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**0.87**	**2.37**	**5.04**	**5.50**	**5.25**	**2.97**

Notes:

(1) See Table 2.1.4.41.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

Derivation of adjusted, yield-based crop evapotranspiration in the Pathfinder to Guernsey subbasin during low stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.59 and Figure 2.1.4.20 is summarized in Table 2.1.4.61.

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin

1981						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1981 - 1900 = 81					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.38	4.97	7.87	5.15	--	--
Average yield, Yi (bu/acre) (2)			32.54			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			59.98			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.43**	**2.99**	**4.74**	**3.10**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1981 - 1900 = 81					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.94	3.94	8.07	5.74	--	--
Average yield, Yi (bu/acre) (2)			28.57			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.98			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.06**	**2.15**	**4.40**	**3.13**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1981 - 1900 = 81					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.06	4.38	8.16	6.66	2.18	1.18
Average yield, Yi (bu/acre) (2)			49.87			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.98			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.76**	**3.74**	**6.96**	**5.68**	**1.86**	**1.01**

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1981 - 1900 = 81					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.06	4.38	8.16	6.66	2.18	1.18
Average yield, Yi (bu/acre) (2)			50.81			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.98			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.79**	**3.80**	**7.08**	**5.77**	**1.89**	**1.02**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1981 - 1900 = 81					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.10	1.12	6.07	8.83	3.72	1.18
Average yield, Yi (cwt/acre) (2)			17.92			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.76			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**1.06**	**1.08**	**5.83**	**8.49**	**3.58**	**1.13**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.90	2.15	5.61	8.21	7.08	4.07
Average yield, Yi (tons/acre) (2)			20.60			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.51			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.90**	**2.15**	**5.61**	**8.21**	**7.08**	**4.07**

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1981 - 1900 = 81					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.10	1.78	7.88	9.35	6.50	1.97
Average yield, Yi (bu/acre) (2)			83.18			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			87.21			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.06**	**1.71**	**7.59**	**9.00**	**6.26**	**1.90**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1981 - 1900 = 81					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.09	4.61	6.08	7.83	3.59	2.37
Average yield, Yi (tons/acre) (2)			2.46			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.55			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.99**	**4.46**	**5.88**	**7.57**	**3.47**	**2.29**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1981 - 1900 = 81					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.21	3.14	7.13	8.15	4.41	3.51
Average yield, Yi (tons/acre) (2)			1.34			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.40			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**2.12**	**3.01**	**6.84**	**7.82**	**4.23**	**3.37**

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1981 - 1900 = 81					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.32	2.07	5.00	5.76	4.97	3.65
Average yield, Yi (2)			1.34			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.40			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.27**	**1.99**	**4.80**	**5.52**	**4.77**	**3.50**
1992						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1992 - 1900 = 92					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.49	6.42	7.44	4.55	--	--
Average yield, Yi (bu/acre) (2)			42.90			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			72.24			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.61**	**4.15**	**4.81**	**2.94**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1992 - 1900 = 92					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	2.03	5.09	7.63	5.08	--	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1992 - 1900 = 92					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.16	5.65	7.72	5.89	2.08	1.19
Average yield, Yi (bu/acre) (2)			71.19			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			72.24			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**2.13**	**5.58**	**7.62**	**5.82**	**2.05**	**1.17**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1992 - 1900 = 92					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.16	5.65	7.72	5.89	2.08	1.19
Average yield, Yi (bu/acre) (2)			56.17			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			72.24			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.74**	**4.56**	**6.23**	**4.75**	**1.68**	**0.96**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1992 - 1900 = 92					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.16	1.45	5.74	7.81	3.55	1.19
Average yield, Yi (cwt/acre) (2)			17.66			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.96			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**1.04**	**1.30**	**5.16**	**7.03**	**3.19**	**1.07**

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.99	2.77	5.31	7.26	6.77	4.08
Average yield, Yi (tons/acre) (2)			16.53			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.99			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.69**	**2.35**	**4.51**	**6.17**	**5.75**	**3.47**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1992 - 1900 = 92					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.16	2.29	7.45	8.27	6.21	1.98
Average yield, Yi (bu/acre) (2)			73.44			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			103.00			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.89**	**1.76**	**5.74**	**6.37**	**4.78**	**1.53**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1992 - 1900 = 92					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.24	5.95	5.75	6.92	3.43	2.37
Average yield, Yi (tons/acre) (2)			2.30			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.76			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.73**	**5.01**	**4.84**	**5.82**	**2.89**	**1.99**

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1992 - 1900 = 92					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.31	4.06	6.75	7.21	4.21	3.52
Average yield, Yi (tons/acre) (2)			1.12			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.68			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.58**	**2.77**	**4.61**	**4.92**	**2.87**	**2.40**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1992 - 1900 = 92					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.39	2.66	4.73	5.10	4.75	3.66
Average yield, Yi (2)			1.12			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.68			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.95**	**1.82**	**3.23**	**3.48**	**3.24**	**2.50**
1985						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1985 - 1900 = 85					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.31	6.29	7.64	5.27	--	--
Average yield, Yi (bu/acre) (2)			34.64			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			64.32			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.38**	**3.77**	**4.57**	**3.16**	**--**	**--**

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1985 - 1900 = 85					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.88	4.99	7.84	5.88	--	--
Average yield, Yi (bu/acre) (2)			35.88			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.32			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.16**	**3.07**	**4.83**	**3.62**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1985 - 1900 = 85					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.00	5.54	7.92	6.82	2.26	0.91
Average yield, Yi (bu/acre) (2)			61.92			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.32			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.94**	**5.36**	**7.66**	**6.60**	**2.19**	**0.88**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1985 - 1900 = 85					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.00	5.54	7.92	6.82	2.26	0.91
Average yield, Yi (bu/acre) (2)			54.87			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.32			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.74**	**4.83**	**6.91**	**5.95**	**1.97**	**0.79**

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin (cont)

Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1985 - 1900 = 85					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.07	1.42	5.89	9.04	3.85	0.91
Average yield, Yi (cwt/acre) (2)			17.35			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.22			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.98**	**1.30**	**5.39**	**8.27**	**3.52**	**0.83**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.84	2.72	5.44	8.40	7.34	3.13
Average yield, Yi (tons/acre) (2)			19.60			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.08			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.84**	**2.72**	**5.44**	**8.40**	**7.34**	**3.13**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1985 - 1900 = 85					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.07	2.25	7.65	9.57	6.73	1.52
Average yield, Yi (bu/acre) (2)			76.56			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			93.53			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.91**	**1.92**	**6.54**	**8.18**	**5.75**	**1.30**

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1985 - 1900 = 85					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.00	5.83	5.90	8.01	3.72	1.82
Average yield, Yi (tons/acre) (2)			1.61			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.63			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.89**	**3.68**	**3.72**	**5.05**	**2.35**	**1.15**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1985 - 1900 = 85					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.14	3.98	6.93	8.35	4.57	2.70
Average yield, Yi (tons/acre) (2)			1.28			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.49			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.85**	**3.45**	**6.00**	**7.23**	**3.96**	**2.34**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1985 - 1900 = 85					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.28	2.61	4.85	5.90	5.15	2.81
Average yield, Yi (2)			1.28			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.49			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.11**	**2.26**	**4.20**	**5.11**	**4.46**	**2.43**

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin (cont)

1989						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1989 - 1900 = 89					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.26	5.86	7.37	5.40	--	--
Average yield, Yi (bu/acre) (2)			36.90			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			68.79			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.35**	**3.50**	**4.40**	**3.22**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1989 - 1900 = 89					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.84	4.65	7.56	6.03	--	--
Average yield, Yi (bu/acre) (2)			38.37			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			68.79			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.13**	**2.86**	**4.65**	**3.71**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1989 - 1900 = 89					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.95	5.16	7.65	6.99	2.15	1.06
Average yield, Yi (bu/acre) (2)			53.77			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			68.79			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.58**	**4.18**	**6.20**	**5.66**	**1.74**	**0.86**

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1989 - 1900 = 89					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.95	5.16	7.65	6.99	2.15	1.06
Average yield, Yi (bu/acre) (2)			47.63			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			68.79			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.43**	**3.78**	**5.60**	**5.12**	**1.57**	**0.78**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1989 - 1900 = 89					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.05	1.32	5.69	9.26	3.66	1.06
Average yield, Yi (cwt/acre) (2)			17.29			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.66			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.94**	**1.18**	**5.09**	**8.29**	**3.28**	**0.95**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.80	2.53	5.26	8.61	6.99	3.65
Average yield, Yi (tons/acre) (2)			17.09			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.62			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.60**	**2.25**	**4.67**	**7.64**	**6.21**	**3.24**

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1989 - 1900 = 89					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.05	2.10	7.38	9.81	6.41	1.77
Average yield, Yi (bu/acre) (2)			89.45			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			99.19			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.97**	**1.94**	**6.80**	**9.04**	**5.91**	**1.63**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1989 - 1900 = 89					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.93	5.43	5.70	8.21	3.54	2.12
Average yield, Yi (tons/acre) (2)			2.11			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.71			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.31**	**4.29**	**4.50**	**6.48**	**2.79**	**1.67**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1989 - 1900 = 89					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.09	3.71	6.69	8.56	4.35	3.15
Average yield, Yi (tons/acre) (2)			0.78			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.60			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.07**	**1.90**	**3.42**	**4.38**	**2.23**	**1.61**

Table 2.1.4.61 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Pathfinder to Guernsey subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1989 - 1900 = 89					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.25	2.43	4.69	6.04	4.90	3.27
Average yield, Yi (2)			0.78			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.60			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.64**	**1.24**	**2.40**	**3.09**	**2.51**	**1.67**

Notes:

(1) See Table 2.1.4.41.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

Derivation of adjusted, yield-based crop evapotranspiration in the Pathfinder to Guernsey subbasin during normal or average stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.59 and Figure 2.1.4.20 is summarized in Table 2.1.4.62.

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin

1984						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1984 - 1900 = 84					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.70	6.06	7.43	5.09	--	--
Average yield, Yi (bu/acre) (2)			39.10			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			63.22			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.14**	**4.05**	**4.97**	**3.40**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1984 - 1900 = 84					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.39	4.80	7.62	5.67	--	--
Average yield, Yi (bu/acre) (2)			38.65			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.22			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**0.92**	**3.18**	**5.04**	**3.75**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1984 - 1900 = 84					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.47	5.33	7.71	6.58	2.24	1.00
Average yield, Yi (bu/acre) (2)			64.40			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.22			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.47**	**5.33**	**7.71**	**6.58**	**2.24**	**1.00**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1984 - 1900 = 84					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.47	5.33	7.71	6.58	2.24	1.00
Average yield, Yi (bu/acre) (2)			52.68			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.22			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.26**	**4.56**	**6.59**	**5.63**	**1.92**	**0.86**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1984 - 1900 = 84					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.79	1.37	5.73	8.72	3.81	1.00
Average yield, Yi (cwt/acre) (2)			19.08			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.11			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.79**	**1.37**	**5.72**	**8.71**	**3.81**	**1.00**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.35	2.62	5.30	8.11	7.26	3.45
Average yield, Yi (tons/acre) (2)			15.60			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.94			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.14**	**2.22**	**4.49**	**6.87**	**6.15**	**2.92**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1984 - 1900 = 84					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.79	2.17	7.44	9.23	6.66	1.67
Average yield, Yi (bu/acre) (2)			77.75			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			92.01			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.69**	**1.90**	**6.52**	**8.09**	**5.83**	**1.46**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1984 - 1900 = 84					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.21	5.62	5.74	7.73	2.84	1.68
Average yield, Yi (tons/acre) (2)			2.26			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.61			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.93**	**4.90**	**5.01**	**6.74**	**2.48**	**1.47**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1984 - 1900 = 84					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.58	3.83	6.74	8.06	3.10	2.04
Average yield, Yi (tons/acre) (2)			1.33			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.47			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.44**	**3.48**	**6.13**	**7.33**	**2.82**	**1.85**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1984 - 1900 = 84					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.95	2.52	4.72	5.69	3.49	2.12
Average yield, Yi (2)			1.33			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.47			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.86**	**2.29**	**4.29**	**5.17**	**3.17**	**1.93**
1986						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1986 - 1900 = 86					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.04	5.81	8.19	4.99	--	--
Average yield, Yi (bu/acre) (2)			37.46			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			65.43			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.28**	**3.65**	**5.15**	**3.14**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1986 - 1900 = 86					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.66	4.60	8.40	5.57	--	--
Average yield, Yi (bu/acre) (2)			42.53			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.43			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.15**	**3.20**	**5.84**	**3.87**	**--**	**--**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1986 - 1900 = 86					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.77	5.11	8.49	6.46	2.24	0.92
Average yield, Yi (bu/acre) (2)			63.49			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.43			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.72**	**4.98**	**8.27**	**6.29**	**2.18**	**0.90**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1986 - 1900 = 86					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.77	5.11	8.49	6.46	2.24	0.92
Average yield, Yi (bu/acre) (2)			59.79			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.43			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.64**	**4.73**	**7.85**	**5.98**	**2.07**	**0.85**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1986 - 1900 = 86					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.95	1.31	6.32	8.55	3.81	0.92
Average yield, Yi (cwt/acre) (2)			17.70			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.33			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.88**	**1.21**	**5.86**	**7.92**	**3.53**	**0.85**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.63	2.51	5.84	7.95	7.27	3.16
Average yield, Yi (tons/acre) (2)			19.90			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.22			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.63**	**2.51**	**5.84**	**7.95**	**7.27**	**3.16**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1986 - 1900 = 86					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.95	2.08	8.20	9.06	6.67	1.53
Average yield, Yi (bu/acre) (2)			84.02			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			95.01			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.86**	**1.89**	**7.44**	**8.22**	**6.05**	**1.39**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1986 - 1900 = 86					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.65	5.38	6.33	7.58	2.85	1.54
Average yield, Yi (tons/acre) (2)			2.38			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.65			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.39**	**4.86**	**5.72**	**6.84**	**2.57**	**1.39**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1986 - 1900 = 86					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.89	3.67	7.43	7.90	3.10	1.87
Average yield, Yi (tons/acre) (2)			1.38			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.52			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.72**	**3.35**	**6.78**	**7.21**	**2.83**	**1.71**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1986 - 1900 = 86					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.13	2.41	5.20	5.58	3.50	1.95
Average yield, Yi (2)			1.38			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.52			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.03**	**2.20**	**4.74**	**5.09**	**3.19**	**1.78**
1988						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1988 - 1900 = 88					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.48	6.30	9.17	5.64	--	--
Average yield, Yi (bu/acre) (2)			39.02			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			67.66			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.57**	**3.98**	**5.79**	**3.56**	**--**	**--**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1988 - 1900 = 88					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	2.02	5.00	9.40	6.30	--	--
Average yield, Yi (bu/acre) (2)			36.71			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.66			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.22**	**3.01**	**5.66**	**3.79**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1988 - 1900 = 88					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.14	5.55	9.51	7.30	2.36	1.12
Average yield, Yi (bu/acre) (2)			39.55			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.66			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.37**	**3.54**	**6.07**	**4.66**	**1.51**	**0.72**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1988 - 1900 = 88					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.14	5.55	9.51	7.30	2.36	1.12
Average yield, Yi (bu/acre) (2)			36.08			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.66			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.27**	**3.30**	**5.65**	**4.34**	**1.40**	**0.67**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1988 - 1900 = 88					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.15	1.42	7.07	9.68	4.02	1.12
Average yield, Yi (cwt/acre) (2)			19.73			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.55			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month) (5)	**1.15**	**1.42**	**7.07**	**9.68**	**4.02**	**1.12**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.97	2.73	6.54	9.00	7.67	3.84
Average yield, Yi (tons/acre) (2)			19.57			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.49			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.97**	**2.73**	**6.54**	**9.00**	**7.67**	**3.84**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1988 - 1900 = 88					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.15	2.25	9.18	10.25	7.03	1.86
Average yield, Yi (bu/acre) (2)			109.54			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			97.84			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.15**	**2.25**	**9.18**	**10.25**	**7.03**	**1.86**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1988 - 1900 = 88					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.22	5.84	7.09	8.58	3.00	1.87
Average yield, Yi (tons/acre) (2)			1.89			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.69			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.31**	**4.19**	**5.08**	**6.15**	**2.15**	**1.34**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1988 - 1900 = 88					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.30	3.99	8.31	8.94	3.27	2.27
Average yield, Yi (tons/acre) (2)			1.14			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.57			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.70**	**2.95**	**6.14**	**6.61**	**2.42**	**1.68**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1988 - 1900 = 88					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.38	2.62	5.83	6.31	3.69	2.36
Average yield, Yi (2)			1.14			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.57			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.02**	**1.94**	**4.31**	**4.66**	**2.73**	**1.74**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

1991						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1991 - 1900 = 91					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.80	5.03	7.33	5.05	--	--
Average yield, Yi (bu/acre) (2)			34.87			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			71.08			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.00**	**2.80**	**4.08**	**2.81**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1991 - 1900 = 91					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.47	3.99	7.52	5.64	--	--
Average yield, Yi (bu/acre) (2)			Not cultivated			
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1991 - 1900 = 91					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.56	4.43	7.60	6.54	2.19	1.05
Average yield, Yi (bu/acre) (2)			64.53			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			71.08			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.43**	**4.08**	**6.99**	**6.02**	**2.01**	**0.97**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1991 - 1900 = 91					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.56	4.43	7.60	6.54	2.19	1.05
Average yield, Yi (bu/acre) (2)			66.47			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			71.08			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.47**	**4.18**	**7.17**	**6.17**	**2.07**	**0.99**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1991 - 1900 = 91					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.84	1.13	5.65	8.66	3.72	1.05
Average yield, Yi (cwt/acre) (2)			17.35			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.86			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.75**	**1.01**	**5.03**	**7.71**	**3.31**	**0.93**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.44	2.17	5.22	8.05	7.10	3.62
Average yield, Yi (tons/acre) (2)			16.72			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.87			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.24**	**1.87**	**4.50**	**6.94**	**6.12**	**3.12**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1991 - 1900 = 91					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.84	1.80	7.34	9.17	6.51	1.76
Average yield, Yi (bu/acre) (2)			97.82			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			101.77			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.81**	**1.74**	**7.11**	**8.89**	**6.31**	**1.71**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1991 - 1900 = 91					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.34	4.66	5.66	7.68	2.78	1.76
Average yield, Yi (tons/acre) (2)			2.54			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.75			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.17**	**4.32**	**5.25**	**7.12**	**2.58**	**1.63**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1991 - 1900 = 91					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.67	3.18	6.64	8.00	3.03	2.14
Average yield, Yi (tons/acre) (2)			1.67			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.65			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.67**	**3.18**	**6.64**	**8.00**	**3.03**	**2.14**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1991 - 1900 = 91					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.00	2.09	4.66	5.65	3.41	2.23
Average yield, Yi (2)			1.67			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.65			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.00**	**2.09**	**4.66**	**5.65**	**3.41**	**2.23**
1972						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1972 - 1900 = 72					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.05	5.66	7.95	5.01	--	--
Average yield, Yi (bu/acre) (2)			40.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			50.71			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.67**	**4.62**	**6.49**	**4.09**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1972 - 1900 = 72					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.67	4.49	8.15	5.59	--	--
Average yield, Yi (bu/acre) (2)			35.28			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			50.71			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.23**	**3.30**	**5.99**	**4.11**	**--**	**--**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1972 - 1900 = 72					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.77	4.98	8.24	6.48	2.14	1.10
Average yield, Yi (bu/acre) (2)			52.26			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			50.71			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.77**	**4.98**	**8.24**	**6.48**	**2.14**	**1.10**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1972 - 1900 = 72					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.77	4.98	8.24	6.48	2.14	1.10
Average yield, Yi (bu/acre) (2)			62.33			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			50.71			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.77**	**4.98**	**8.24**	**6.48**	**2.14**	**1.10**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1972 - 1900 = 72					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.95	1.28	6.13	8.59	3.65	1.10
Average yield, Yi (cwt/acre) (2)			18.07			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			17.60			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month) (5)	**0.95**	**1.28**	**6.13**	**8.59**	**3.65**	**1.10**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.63	2.45	5.67	7.99	6.95	3.78
Average yield, Yi (tons/acre) (2)			22.80			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			17.10			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.63**	**2.45**	**5.67**	**7.99**	**6.95**	**3.78**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1972 - 1900 = 72					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.95	2.02	7.96	9.10	6.38	1.83
Average yield, Yi (bu/acre) (2)			66.14			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			70.59			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.90**	**1.92**	**7.56**	**8.64**	**6.06**	**1.74**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1972 - 1900 = 72					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.66	5.25	6.14	7.62	2.72	1.84
Average yield, Yi (tons/acre) (2)			2.34			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.36			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.64**	**5.21**	**6.09**	**7.56**	**2.70**	**1.83**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1972 - 1900 = 72					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.90	3.58	7.21	7.94	2.96	2.24
Average yield, Yi (tons/acre) (2)			1.12			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.22			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.75**	**3.30**	**6.65**	**7.32**	**2.73**	**2.07**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1972 - 1900 = 72					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.14	2.35	5.05	5.60	3.34	2.33
Average yield, Yi (2)			1.12			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.22			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.05**	**2.17**	**4.66**	**5.16**	**3.08**	**2.15**
1978						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1978 - 1900 = 78					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.03	4.93	7.69	5.01	--	--
Average yield, Yi (bu/acre) (2)			34.18			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			56.82			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.33**	**3.22**	**5.03**	**3.27**	**--**	**--**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1978 - 1900 = 78					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.65	3.91	7.89	5.59	--	--
Average yield, Yi (bu/acre) (2)			32.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			56.82			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.02**	**2.42**	**4.89**	**3.47**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1978 - 1900 = 78					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.76	4.34	7.98	6.48	2.06	1.15
Average yield, Yi (bu/acre) (2)			44.09			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			56.82			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.42**	**3.49**	**6.43**	**5.22**	**1.66**	**0.93**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1978 - 1900 = 78					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.76	4.34	7.98	6.48	2.06	1.15
Average yield, Yi (bu/acre) (2)			70.91			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			56.82			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.76**	**4.34**	**7.98**	**6.48**	**2.06**	**1.15**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1978 - 1900 = 78					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.94	1.11	5.93	8.59	3.50	1.15
Average yield, Yi (cwt/acre) (2)			15.80			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.39			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.82**	**0.97**	**5.20**	**7.54**	**3.07**	**1.01**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.62	2.13	5.49	7.99	6.68	3.96
Average yield, Yi (tons/acre) (2)			16.70			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.06			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.51**	**1.99**	**5.13**	**7.47**	**6.24**	**3.70**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1978 - 1900 = 78					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.94	1.76	7.71	9.10	6.12	1.92
Average yield, Yi (bu/acre) (2)			77.32			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			82.04			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.90**	**1.68**	**7.36**	**8.68**	**5.84**	**1.83**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1978 - 1900 = 78					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.64	4.57	5.95	7.62	2.62	1.93
Average yield, Yi (tons/acre) (2)			2.19			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.49			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.34**	**4.05**	**5.27**	**6.75**	**2.32**	**1.71**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1978 - 1900 = 78					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.88	3.12	6.98	7.94	2.85	2.34
Average yield, Yi (tons/acre) (2)			1.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.33			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.57**	**2.61**	**5.83**	**6.63**	**2.38**	**1.95**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1978 - 1900 = 78					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.13	2.05	4.89	5.60	3.21	2.44
Average yield, Yi (2)			1.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.33			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.94**	**1.71**	**4.08**	**4.68**	**2.68**	**2.04**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

1980						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1980 - 1900 = 80					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.13	5.33	8.29	5.46	--	--
Average yield, Yi (bu/acre) (2)			30.08			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			58.92			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.22**	**3.06**	**4.76**	**3.14**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1980 - 1900 = 80					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.73	4.22	8.51	6.10	--	--
Average yield, Yi (bu/acre) (2)			32.94			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.92			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.07**	**2.60**	**5.25**	**3.76**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1980 - 1900 = 80					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.84	4.69	8.60	7.07	2.13	1.16
Average yield, Yi (bu/acre) (2)			45.70			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.92			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.48**	**3.77**	**6.92**	**5.69**	**1.71**	**0.93**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1980 - 1900 = 80					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.84	4.69	8.60	7.07	2.13	1.16
Average yield, Yi (bu/acre) (2)			56.03			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.92			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.76**	**4.49**	**8.23**	**6.77**	**2.04**	**1.11**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1980 - 1900 = 80					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.99	1.20	6.40	9.37	3.62	1.16
Average yield, Yi (cwt/acre) (2)			18.73			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.64			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month) (5)	**0.99**	**1.20**	**6.40**	**9.37**	**3.62**	**1.16**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.69	2.30	5.91	8.71	6.91	3.98
Average yield, Yi (tons/acre) (2)			17.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.36			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.58**	**2.15**	**5.53**	**8.15**	**6.46**	**3.72**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1980 - 1900 = 80					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.99	1.91	8.31	9.92	6.34	1.93
Average yield, Yi (bu/acre) (2)			88.05			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			85.53			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.99**	**1.91**	**8.31**	**9.92**	**6.34**	**1.93**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1980 - 1900 = 80					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.76	4.94	6.41	8.31	2.71	1.94
Average yield, Yi (tons/acre) (2)			2.35			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.53			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.57**	**4.61**	**5.98**	**7.75**	**2.53**	**1.81**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1980 - 1900 = 80					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.97	3.37	7.52	8.66	2.95	2.35
Average yield, Yi (tons/acre) (2)			1.21			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.38			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.74**	**2.97**	**6.64**	**7.64**	**2.60**	**2.07**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1980 - 1900 = 80					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.18	2.21	5.27	6.11	3.32	2.45
Average yield, Yi (2)			1.21			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.38			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.04**	**1.95**	**4.65**	**5.39**	**2.93**	**2.16**
1974						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1974 - 1900 = 74					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.95	5.91	8.15	5.26	--	--
Average yield, Yi (bu/acre) (2)			36.36			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			52.71			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.42**	**4.32**	**5.95**	**3.84**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1974 - 1900 = 74					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.59	4.68	8.37	5.87	--	--
Average yield, Yi (bu/acre) (2)			32.66			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			52.71			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.06**	**3.13**	**5.60**	**3.93**	**--**	**--**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1974 - 1900 = 74					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.69	5.20	8.46	6.80	2.13	1.05
Average yield, Yi (bu/acre) (2)			48.77			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			52.71			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.58**	**4.86**	**7.91**	**6.36**	**1.99**	**0.98**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1974 - 1900 = 74					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.69	5.20	8.46	6.80	2.13	1.05
Average yield, Yi (bu/acre) (2)			40.33			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			52.71			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.34**	**4.14**	**6.73**	**5.41**	**1.69**	**0.84**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1974 - 1900 = 74					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.90	1.33	6.29	9.01	3.62	1.05
Average yield, Yi (cwt/acre) (2)			17.69			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			17.87			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.89**	**1.32**	**6.24**	**8.93**	**3.59**	**1.04**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.55	2.55	5.81	8.38	6.90	3.62
Average yield, Yi (tons/acre) (2)			17.76			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			17.43			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.55**	**2.55**	**5.81**	**8.38**	**6.90**	**3.62**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1974 - 1900 = 74					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.90	2.11	8.17	9.55	6.33	1.76
Average yield, Yi (bu/acre) (2)			57.97			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			74.57			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.74**	**1.73**	**6.72**	**7.85**	**5.20**	**1.45**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1974 - 1900 = 74					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.53	5.47	6.30	7.99	2.70	1.76
Average yield, Yi (tons/acre) (2)			2.29			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.40			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.42**	**5.23**	**6.03**	**7.64**	**2.58**	**1.68**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1974 - 1900 = 74					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.81	3.73	7.39	8.33	2.94	2.14
Average yield, Yi (tons/acre) (2)			1.15			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.26			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.66**	**3.42**	**6.78**	**7.64**	**2.70**	**1.96**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1974 - 1900 = 74					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.08	2.45	5.18	5.88	3.32	2.23
Average yield, Yi (2)			1.15			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.26			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.99**	**2.25**	**4.75**	**5.39**	**3.04**	**2.04**
1976						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1976 - 1900 = 76					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.00	5.96	7.23	5.03	--	--
Average yield, Yi (bu/acre) (2)			31.46			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			54.75			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.26**	**3.76**	**4.56**	**3.17**	**--**	**--**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1976 - 1900 = 76					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.63	4.73	7.42	5.61	--	--
Average yield, Yi (bu/acre) (2)			35.66			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			54.75			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.14**	**3.30**	**5.17**	**3.91**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1976 - 1900 = 76					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.73	5.25	7.50	6.51	2.18	1.28
Average yield, Yi (bu/acre) (2)			57.80			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			54.75			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.73**	**5.25**	**7.50**	**6.51**	**2.18**	**1.28**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1976 - 1900 = 76					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.73	5.25	7.50	6.51	2.18	1.28
Average yield, Yi (bu/acre) (2)			57.63			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			54.75			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.73**	**5.25**	**7.50**	**6.51**	**2.18**	**1.28**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1976 - 1900 = 76					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.93	1.34	5.58	8.62	3.70	1.28
Average yield, Yi (cwt/acre) (2)			16.09			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.13			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.84**	**1.21**	**5.03**	**7.78**	**3.34**	**1.15**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.59	2.58	5.16	8.02	7.06	4.40
Average yield, Yi (tons/acre) (2)			17.85			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			17.75			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.59**	**2.58**	**5.16**	**8.02**	**7.06**	**4.40**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1976 - 1900 = 76					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.93	2.13	7.25	9.13	6.48	2.14
Average yield, Yi (bu/acre) (2)			67.23			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			78.39			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.82**	**1.89**	**6.42**	**8.09**	**5.74**	**1.90**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1976 - 1900 = 76					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.59	5.53	5.59	7.65	2.77	2.15
Average yield, Yi (tons/acre) (2)			2.51			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.44			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.59**	**5.53**	**5.59**	**7.65**	**2.77**	**2.15**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1976 - 1900 = 76					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.85	3.77	6.56	7.97	3.01	2.60
Average yield, Yi (tons/acre) (2)			1.05			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.29			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.52**	**3.10**	**5.40**	**6.56**	**2.48**	**2.14**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1976 - 1900 = 76					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.11	2.48	4.60	5.63	3.40	2.71
Average yield, Yi (2)			1.05			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.29			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.91**	**2.04**	**3.78**	**4.63**	**2.80**	**2.23**
1975						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1975 - 1900 = 75					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.71	5.27	7.11	5.19	--	--
Average yield, Yi (bu/acre) (2)			37.82			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			53.73			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.27**	**3.91**	**5.28**	**3.85**	**--**	**--**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1975 - 1900 = 75					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.39	4.18	7.29	5.79	--	--
Average yield, Yi (bu/acre) (2)			34.38			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			53.73			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**0.95**	**2.87**	**5.01**	**3.98**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1975 - 1900 = 75					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.48	4.64	7.37	6.72	2.18	1.11
Average yield, Yi (bu/acre) (2)			45.88			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			53.73			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.29**	**4.05**	**6.43**	**5.87**	**1.90**	**0.97**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1975 - 1900 = 75					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.48	4.64	7.37	6.72	2.18	1.11
Average yield, Yi (bu/acre) (2)			48.15			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			53.73			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.35**	**4.22**	**6.70**	**6.11**	**1.98**	**1.01**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1975 - 1900 = 75					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.79	1.19	5.48	8.90	3.70	1.11
Average yield, Yi (cwt/acre) (2)			15.80			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.00			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.71**	**1.06**	**4.90**	**7.95**	**3.31**	**0.99**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.36	2.28	5.07	8.27	7.06	3.83
Average yield, Yi (tons/acre) (2)			17.66			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			17.59			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.36**	**2.28**	**5.07**	**8.27**	**7.06**	**3.83**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1975 - 1900 = 75					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.79	1.89	7.12	9.42	6.48	1.86
Average yield, Yi (bu/acre) (2)			65.01			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			76.50			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.70**	**1.66**	**6.26**	**8.29**	**5.70**	**1.64**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1975 - 1900 = 75					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.22	4.89	5.49	7.89	2.77	1.86
Average yield, Yi (tons/acre) (2)			2.46			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.42			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.22**	**4.89**	**5.49**	**7.89**	**2.77**	**1.86**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1975 - 1900 = 75					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.59	3.33	6.45	8.22	3.01	2.26
Average yield, Yi (tons/acre) (2)			1.09			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.27			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.38**	**2.88**	**5.58**	**7.11**	**2.60**	**1.95**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1975 - 1900 = 75					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.95	2.19	4.52	5.81	3.40	2.35
Average yield, Yi (2)			1.09			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.27			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.82**	**1.89**	**3.91**	**5.03**	**2.94**	**2.03**
1977						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1977 - 1900 = 77					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.20	5.88	8.41	4.97	--	--
Average yield, Yi (bu/acre) (2)			24.55			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			55.78			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.13**	**3.02**	**4.32**	**2.55**	**--**	**--**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1977 - 1900 = 77					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.79	4.66	8.63	5.55	--	--
Average yield, Yi (bu/acre) (2)			34.11			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			55.78			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.19**	**3.09**	**5.71**	**3.68**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1977 - 1900 = 77					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.90	5.18	8.72	6.44	2.08	1.19
Average yield, Yi (bu/acre) (2)			35.90			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			55.78			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.31**	**3.57**	**6.02**	**4.44**	**1.44**	**0.82**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1977 - 1900 = 77					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.90	5.18	8.72	6.44	2.08	1.19
Average yield, Yi (bu/acre) (2)			40.36			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			55.78			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.44**	**3.93**	**6.62**	**4.89**	**1.58**	**0.90**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1977 - 1900 = 77					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.02	1.33	6.48	8.53	3.55	1.19
Average yield, Yi (cwt/acre) (2)			14.19			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.26			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.82**	**1.07**	**5.22**	**6.88**	**2.86**	**0.96**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.75	2.54	5.99	7.93	6.77	4.09
Average yield, Yi (tons/acre) (2)			14.80			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			17.91			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.49**	**2.16**	**5.09**	**6.73**	**5.75**	**3.47**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1977 - 1900 = 77					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.02	2.10	8.42	9.03	6.21	1.98
Average yield, Yi (bu/acre) (2)			67.57			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			80.24			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.89**	**1.83**	**7.36**	**7.89**	**5.43**	**1.73**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1977 - 1900 = 77					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.85	5.45	6.50	7.56	2.65	1.99
Average yield, Yi (bu/acre) (2)			2.04			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (bu/acre) (2)			2.46			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.39**	**4.56**	**5.44**	**6.33**	**2.22**	**1.67**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1977 - 1900 = 77					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.04	3.72	7.62	7.88	2.88	2.41
Average yield, Yi (bu/acre) (2)			0.93			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (bu/acre) (2)			1.31			
Adjusted maximum evapotranspiration, $ET_{OHAY(HIGH)}$ (inches per month)	**1.48**	**2.69**	**5.51**	**5.70**	**2.08**	**1.74**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1977 - 1900 = 77					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.22	2.44	5.34	5.57	3.25	2.51
Average yield, Yi (bu/acre) (2)			0.93			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (bu/acre) (2)			1.31			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE(HIGH)}$ (inches per month)	**0.88**	**1.77**	**3.86**	**4.03**	**2.35**	**1.82**
1982						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1982 - 1900 = 82					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.00	5.22	6.47	5.07	--	--
Average yield, Yi (bu/acre) (2)			36.54			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			61.05			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.30**	**3.40**	**4.21**	**3.30**	**--**	**--**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1982 - 1900 = 82					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.63	4.14	6.64	5.66	--	--
Average yield, Yi (bu/acre) (2)			37.34			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.05			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.08**	**2.74**	**4.40**	**3.75**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1982 - 1900 = 82					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.73	4.59	6.72	6.56	2.35	0.98
Average yield, Yi (bu/acre) (2)			54.82			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.05			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.58**	**4.18**	**6.12**	**5.98**	**2.14**	**0.89**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1982 - 1900 = 82					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.73	4.59	6.72	6.56	2.35	0.98
Average yield, Yi (bu/acre) (2)			68.67			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.05			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.73**	**4.59**	**6.72**	**6.56**	**2.35**	**0.98**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1982 - 1900 = 82					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.93	1.18	4.99	8.70	3.99	0.98
Average yield, Yi (cwt/acre) (2)			15.36			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.88			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.78**	**0.99**	**4.18**	**7.29**	**3.34**	**0.82**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.59	2.26	4.62	8.09	7.61	3.38
Average yield, Yi (tons/acre) (2)			18.30			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.66			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.56**	**2.22**	**4.54**	**7.95**	**7.48**	**3.32**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1982 - 1900 = 82					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.93	1.87	6.49	9.21	6.98	1.64
Average yield, Yi (bu/acre) (2)			87.47			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			88.86			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.92**	**1.85**	**6.41**	**9.09**	**6.89**	**1.62**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1982 - 1900 = 82					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.59	4.84	5.01	7.71	2.98	1.65
Average yield, Yi (tons/acre) (2)			2.70			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.57			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.59**	**4.84**	**5.01**	**7.71**	**2.98**	**1.65**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1982 - 1900 = 82					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.85	3.30	5.87	8.03	3.25	2.00
Average yield, Yi (tons/acre) (2)			1.92			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.42			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.85**	**3.30**	**5.87**	**8.03**	**3.25**	**2.00**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1982 - 1900 = 82					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.11	2.17	4.12	5.67	3.66	2.08
Average yield, Yi (2)			1.92			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.42			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.11**	**2.17**	**4.12**	**5.67**	**3.66**	**2.08**
	1979					
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1979 - 1900 = 79					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.14	5.31	7.72	5.33	--	--
Average yield, Yi (bu/acre) (2)			25.08			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			57.86			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.09**	**2.69**	**3.92**	**2.70**	**--**	**--**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1979 - 1900 = 79					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.74	4.21	7.92	5.95	--	--
Average yield, Yi (bu/acre) (2)			43.46			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			57.86			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.36**	**3.30**	**6.21**	**4.66**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1979 - 1900 = 79					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.85	4.67	8.01	6.90	1.99	1.25
Average yield, Yi (bu/acre) (2)			44.15			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			57.86			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.47**	**3.71**	**6.36**	**5.48**	**1.58**	**0.99**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1979 - 1900 = 79					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.85	4.67	8.01	6.90	1.99	1.25
Average yield, Yi (bu/acre) (2)			52.27			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			57.86			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.69**	**4.28**	**7.34**	**6.32**	**1.82**	**1.14**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1979 - 1900 = 79					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.99	1.20	5.95	9.14	3.39	1.25
Average yield, Yi (cwt/acre) (2)			18.82			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.51			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month) (5)	**0.99**	**1.20**	**5.95**	**9.14**	**3.39**	**1.25**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.70	2.29	5.50	8.50	6.46	4.30
Average yield, Yi (tons/acre) (2)			17.90			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.21			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.67**	**2.26**	**5.42**	**8.37**	**6.36**	**4.24**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1979 - 1900 = 79					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.99	1.90	7.73	9.69	5.92	2.09
Average yield, Yi (bu/acre) (2)			78.93			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			83.81			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.94**	**1.81**	**7.37**	**9.24**	**5.64**	**1.99**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1979 - 1900 = 79					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.78	4.92	5.97	8.11	2.53	2.10
Average yield, Yi (tons/acre) (2)			2.36			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.51			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.62**	**4.64**	**5.63**	**7.65**	**2.39**	**1.98**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1979 - 1900 = 79					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.98	3.36	7.00	8.45	2.75	2.54
Average yield, Yi (tons/acre) (2)			1.05			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.35			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.56**	**2.65**	**5.52**	**6.66**	**2.17**	**2.00**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1979 - 1900 = 79					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.19	2.20	4.91	5.97	3.11	2.65
Average yield, Yi (2)			1.05			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.35			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.94**	**1.73**	**3.87**	**4.71**	**2.45**	**2.09**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

1987						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1987 - 1900 = 87					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.56	6.23	8.19	5.22	--	--
Average yield, Yi (bu/acre) (2)			37.54			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			66.54			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.59**	**3.87**	**5.09**	**3.24**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1987 - 1900 = 87					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	2.09	4.94	8.40	5.83	--	--
Average yield, Yi (bu/acre) (2)			36.27			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.54			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.26**	**2.99**	**5.08**	**3.52**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1987 - 1900 = 87					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.21	5.48	8.49	6.76	2.08	1.14
Average yield, Yi (bu/acre) (2)			49.24			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.54			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.71**	**4.24**	**6.57**	**5.23**	**1.61**	**0.88**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1987 - 1900 = 87					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.21	5.48	8.49	6.76	2.08	1.14
Average yield, Yi (bu/acre) (2)			52.27			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.54			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.80**	**4.46**	**6.91**	**5.50**	**1.69**	**0.93**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1987 - 1900 = 87					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.19	1.40	6.32	8.96	3.54	1.14
Average yield, Yi (cwt/acre) (2)			18.64			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.44			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**1.15**	**1.35**	**6.09**	**8.64**	**3.41**	**1.10**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.04	2.69	5.84	8.33	6.74	3.90
Average yield, Yi (tons/acre) (2)			17.80			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.35			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.90**	**2.50**	**5.43**	**7.75**	**6.27**	**3.63**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1987 - 1900 = 87					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.19	2.23	8.20	9.49	6.19	1.89
Average yield, Yi (bu/acre) (2)			87.87			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			96.44			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.11**	**2.07**	**7.62**	**8.82**	**5.75**	**1.76**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1987 - 1900 = 87					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.32	5.77	6.33	7.94	2.64	1.90
Average yield, Yi (tons/acre) (2)			2.12			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.67			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.67**	**4.64**	**5.09**	**6.38**	**2.12**	**1.53**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1987 - 1900 = 87					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.37	3.94	7.43	8.27	2.87	2.31
Average yield, Yi (tons/acre) (2)			1.47			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.54			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**2.27**	**3.77**	**7.11**	**7.91**	**2.75**	**2.21**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1987 - 1900 = 87					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.42	2.59	5.20	5.84	3.24	2.40
Average yield, Yi (2)			1.47			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.54			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.36**	**2.48**	**4.97**	**5.59**	**3.10**	**2.30**
1990						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1990 - 1900 = 90					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.06	5.54	8.28	4.82	--	--
Average yield, Yi (bu/acre) (2)			40.60			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			69.93			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.31**	**3.52**	**5.26**	**3.06**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1990 - 1900 = 90					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.68	4.39	8.50	5.38	--	--
Average yield, Yi (bu/acre) (2)			30.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			69.93			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**0.85**	**2.21**	**4.28**	**2.71**	**--**	**--**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1990 - 1900 = 90					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.78	4.88	8.59	6.24	2.17	1.17
Average yield, Yi (bu/acre) (2)			52.96			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			69.93			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.40**	**3.85**	**6.78**	**4.92**	**1.71**	**0.92**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0042x2 +0.3875x + 1.0387 (from 2001 Mod Dec) x = 1990 - 1900 = 90					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.78	4.88	8.59	6.24	2.17	1.17
Average yield, Yi (bu/acre) (2)			53.13			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			69.93			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.41**	**3.86**	**6.80**	**4.94**	**1.72**	**0.93**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = (- 0.0966x2 + 27.666x + 268.51)/100 (from 2001 Mod Dec) x = 1990 - 1900 = 90					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.96	1.25	6.39	8.27	3.69	1.17
Average yield, Yi (cwt/acre) (2)			17.77			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.76			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.88**	**1.14**	**5.83**	**7.55**	**3.37**	**1.07**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0011x2 + 0.1666x + 17.101 (see Figure 2.1.4.20.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.64	2.40	5.90	7.69	7.03	4.03
Average yield, Yi (tons/acre) (2)			19.34			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.74			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.61**	**2.36**	**5.80**	**7.55**	**6.91**	**3.96**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0206x2 + 4.9989x - 182.54 (from 2001 Mod Dec) x = 1990 - 1900 = 90					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.96	1.98	8.29	8.76	6.45	1.96
Average yield, Yi (bu/acre) (2)			107.40			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			100.50			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.96**	**1.98**	**8.29**	**8.76**	**6.45**	**1.96**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.00008x2 + 0.0335x + 0.3593 (from 2001 Mod Dec) x = 1990 - 1900 = 90					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.68	5.13	6.40	7.33	2.75	1.97
Average yield, Yi (tons/acre) (2)			2.40			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.73			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.37**	**4.54**	**5.66**	**6.49**	**2.43**	**1.74**

Table 2.1.4.62 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1990 - 1900 = 90					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.91	3.50	7.51	7.64	3.00	2.38
Average yield, Yi (tons/acre) (2)			1.08			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.62			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.30**	**2.39**	**5.13**	**5.21**	**2.05**	**1.62**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 - 0.0262x + 1.5511 (from 2001 Mod Dec) x = 1990 - 1900 = 90					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.15	2.30	5.26	5.40	3.38	2.48
Average yield, Yi (2)			1.08			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.62			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.78**	**1.57**	**3.59**	**3.69**	**2.31**	**1.69**

Notes:

(1) See Table 2.1.4.41.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

A summary of adjusted, yield-based crop evapotranspiration values during high, low, and normal or average stream flow years–derivation of which is shown in Tables 2.1.4.60, 2.1.4.61, and 2.1.4.62–is included in Table 2.1.4.63.

Table 2.1.4.63 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Pathfinder to Guernsey subbasin

High stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1983	winter wheat	1.07	3.45	4.55	3.38	--	--	**12.45**
	spring wheat	0.89	2.75	4.70	3.80	--	--	**12.14**
	barley	1.40	4.55	7.07	6.55	2.29	1.15	**23.01**
	oats	1.34	4.36	6.77	6.28	2.19	1.10	**22.04**
	dry beans	0.62	0.97	4.37	7.21	3.23	0.96	**17.36**
	sugar beets	0.92	1.60	3.47	5.76	5.30	2.82	**19.87**
	corn	0.70	1.73	6.40	8.62	6.38	1.80	**25.63**
	alfalfa	2.10	4.80	5.27	7.70	3.77	2.31	**25.95**
	other hay	1.50	3.27	6.18	8.02	4.62	3.42	**27.01**
	irrigated pasture	0.90	2.15	4.33	5.67	5.21	3.56	**21.82**
1973	winter wheat	1.20	4.40	6.09	3.79	--	--	**15.48**
	spring wheat	0.85	3.04	5.46	3.69	--	--	**13.04**
	barley	1.28	4.78	7.81	6.05	2.19	0.91	**23.02**
	oats	1.35	5.01	8.19	6.35	2.30	0.96	**24.16**
	dry beans	0.71	1.28	6.04	8.33	3.88	0.95	**21.19**
	sugar beets	1.19	2.36	5.40	7.50	7.15	3.17	**26.77**
	corn	0.69	1.97	7.66	8.62	6.62	1.55	**27.11**
	alfalfa	2.03	5.30	6.13	7.48	3.79	1.93	**26.66**
	other hay	1.45	3.62	7.19	7.79	4.66	2.86	**27.57**
	irrigated pasture	0.87	2.37	5.04	5.50	5.25	2.97	**22.00**
Low stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	
1981	winter wheat	1.43	2.99	4.74	3.10	--	--	**12.26**
	spring wheat	1.06	2.15	4.40	3.13	--	--	**10.74**
	barley	1.76	3.74	6.96	5.68	1.86	1.01	**21.01**
	oats	1.79	3.80	7.08	5.77	1.89	1.02	**21.35**
	dry beans	1.06	1.08	5.83	8.49	3.58	1.13	**21.17**
	sugar beets	1.90	2.15	5.61	8.21	7.08	4.07	**29.02**
	corn	1.06	1.71	7.59	9.00	6.26	1.90	**27.52**
	alfalfa	2.99	4.46	5.88	7.57	3.47	2.29	**26.66**
	other hay	2.12	3.01	6.84	7.82	4.23	3.37	**27.39**
	irrigated pasture	1.27	1.99	4.80	5.52	4.77	3.50	**21.85**

Table 2.1.4.63 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
1992	winter wheat	1.61	4.15	4.81	2.94	--	--	**13.51**
	spring wheat	Not cultivated						
	barley	2.13	5.58	7.62	5.82	2.05	1.17	**24.37**
	oats	1.74	4.56	6.23	4.75	1.68	0.96	**19.92**
	dry beans	1.04	1.30	5.16	7.03	3.19	1.07	**18.79**
	sugar beets	1.69	2.35	4.51	6.17	5.75	3.47	**23.94**
	corn	0.89	1.76	5.74	6.37	4.78	1.53	**21.07**
	alfalfa	2.73	5.01	4.84	5.82	2.89	1.99	**23.28**
	other hay	1.58	2.77	4.61	4.92	2.87	2.40	**19.15**
	irrigated pasture	0.95	1.82	3.23	3.48	3.24	2.50	**15.22**
1985	winter wheat	1.38	3.77	4.57	3.16	--	--	**12.88**
	spring wheat	1.16	3.07	4.83	3.62	--	--	**12.68**
	barley	1.94	5.36	7.66	6.60	2.19	0.88	**24.63**
	oats	1.74	4.83	6.91	5.95	1.97	0.79	**22.19**
	dry beans	0.98	1.30	5.39	8.27	3.52	0.83	**20.29**
	sugar beets	1.84	2.72	5.44	8.40	7.34	3.13	**28.87**
	corn	0.91	1.92	6.54	8.18	5.75	1.30	**24.60**
	alfalfa	1.89	3.68	3.72	5.05	2.35	1.15	**17.84**
	other hay	1.85	3.45	6.00	7.23	3.96	2.34	**24.83**
	irrigated pasture	1.11	2.26	4.20	5.11	4.46	2.43	**19.57**
1989	winter wheat	1.35	3.50	4.40	3.22	--	--	**12.47**
	spring wheat	1.13	2.86	4.65	3.71	--	--	**12.35**
	barley	1.58	4.18	6.20	5.66	1.74	0.86	**20.22**
	oats	1.43	3.78	5.60	5.12	1.57	0.78	**18.28**
	dry beans	0.94	1.18	5.09	8.29	3.28	0.95	**19.73**
	sugar beets	1.60	2.25	4.67	7.64	6.21	3.24	**25.61**
	corn	0.97	1.94	6.80	9.04	5.91	1.63	**26.29**
	alfalfa	2.31	4.29	4.50	6.48	2.79	1.67	**22.04**
	other hay	1.07	1.90	3.42	4.38	2.23	1.61	**14.61**
	irrigated pasture	0.64	1.24	2.40	3.09	2.51	1.67	**11.55**
Normal or average stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	
1984	winter wheat	1.14	4.05	4.97	3.40	--	--	**13.56**
	spring wheat	0.92	3.18	5.04	3.75	--	--	**12.89**
	barley	1.47	5.33	7.71	6.58	2.24	1.00	**24.33**
	oats	1.26	4.56	6.59	5.63	1.92	0.86	**20.82**
	dry beans	0.79	1.37	5.72	8.71	3.81	1.00	**21.40**
	sugar beets	1.14	2.22	4.49	6.87	6.15	2.92	**23.79**
	corn	0.69	1.90	6.52	8.09	5.83	1.46	**24.49**
	alfalfa	1.93	4.90	5.01	6.74	3.21	1.75	**23.54**
	other hay	1.44	3.48	6.13	7.33	4.11	2.71	**25.20**
	irrigated pasture	0.86	2.29	4.29	5.17	4.64	2.82	**20.07**

Table 2.1.4.63 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1986	winter wheat	1.28	3.65	5.15	3.14	--	--	**13.22**
	spring wheat	1.15	3.20	5.84	3.87	--	--	**14.06**
	barley	1.72	4.98	8.27	6.29	2.18	0.90	**24.34**
	oats	1.64	4.73	7.85	5.98	2.07	0.85	**23.12**
	dry beans	0.88	1.21	5.86	7.92	3.53	0.85	**20.25**
	sugar beets	1.63	2.51	5.84	7.95	7.27	3.16	**28.36**
	corn	0.86	1.89	7.44	8.22	6.05	1.39	**25.85**
	alfalfa	2.39	4.86	5.72	6.84	3.33	1.66	**24.80**
	other hay	1.72	3.35	6.78	7.21	4.13	2.49	**25.68**
	irrigated pasture	1.03	2.20	4.74	5.09	4.65	2.59	**20.30**
1988	winter wheat	1.57	3.98	5.79	3.56	--	--	**14.90**
	spring wheat	1.22	3.01	5.66	3.79	--	--	**13.68**
	barley	1.37	3.54	6.07	4.66	1.51	0.72	**17.87**
	oats	1.27	3.30	5.65	4.34	1.40	0.67	**16.63**
	dry beans	1.15	1.42	7.07	9.68	4.02	1.12	**24.46**
	sugar beets	1.97	2.73	6.54	9.00	7.67	3.84	**31.75**
	corn	1.15	2.25	9.18	10.25	7.03	1.86	**31.72**
	alfalfa	2.31	4.19	5.08	6.15	2.79	1.61	**22.13**
	other hay	1.70	2.95	6.14	6.61	3.53	2.45	**23.38**
	irrigated pasture	1.02	1.94	4.31	4.66	3.98	2.55	**18.46**
1991	winter wheat	1.00	2.80	4.08	2.81	--	--	**10.69**
	spring wheat			Not cultivated				
	barley	1.43	4.08	6.99	6.02	2.01	0.97	**21.50**
	oats	1.47	4.18	7.17	6.17	2.07	0.99	**22.05**
	dry beans	0.75	1.01	5.03	7.71	3.31	0.93	**18.74**
	sugar beets	1.24	1.87	4.50	6.94	6.12	3.12	**23.79**
	corn	0.81	1.74	7.11	8.89	6.31	1.71	**26.57**
	alfalfa	2.17	4.32	5.25	7.12	3.34	1.96	**24.16**
	other hay	1.67	3.18	6.64	8.00	4.42	3.12	**27.03**
	irrigated pasture	1.00	2.09	4.66	5.65	4.98	3.25	**21.63**
1972	winter wheat	1.67	4.62	6.49	4.09	--	--	**16.87**
	spring wheat	1.23	3.30	5.99	4.11	--	--	**14.63**
	barley	1.77	4.98	8.24	6.48	2.14	1.10	**24.71**
	oats	1.77	4.98	8.24	6.48	2.14	1.10	**24.71**
	dry beans	0.95	1.28	6.13	8.59	3.65	1.10	**21.70**
	sugar beets	1.63	2.45	5.67	7.99	6.95	3.78	**28.47**
	corn	0.90	1.92	7.56	8.64	6.06	1.74	**26.82**
	alfalfa	2.64	5.21	6.09	7.56	3.50	2.18	**27.18**
	other hay	1.75	3.30	6.65	7.32	3.99	3.01	**26.02**
	irrigated pasture	1.05	2.17	4.66	5.16	4.50	3.13	**20.67**

Table 2.1.4.63 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1978	winter wheat	1.33	3.22	5.03	3.27	--	--	**12.85**
	spring wheat	1.02	2.42	4.89	3.47	--	--	**11.80**
	barley	1.42	3.49	6.43	5.22	1.66	0.93	**19.15**
	oats	1.76	4.34	7.98	6.48	2.06	1.15	**23.77**
	dry beans	0.82	0.97	5.20	7.54	3.07	1.01	**18.61**
	sugar beets	1.51	1.99	5.13	7.47	6.24	3.70	**26.04**
	corn	0.90	1.68	7.36	8.68	5.84	1.83	**26.29**
	alfalfa	2.34	4.05	5.27	6.75	3.00	2.04	**23.45**
	other hay	1.57	2.61	5.83	6.63	3.47	2.86	**22.97**
	irrigated pasture	0.94	1.71	4.08	4.68	3.92	2.97	**18.30**
1980	winter wheat	1.22	3.06	4.76	3.14	--	--	**12.18**
	spring wheat	1.07	2.60	5.25	3.76	--	--	**12.68**
	barley	1.48	3.77	6.92	5.69	1.71	0.93	**20.50**
	oats	1.76	4.49	8.23	6.77	2.04	1.11	**24.40**
	dry beans	0.99	1.20	6.40	9.37	3.62	1.16	**22.74**
	sugar beets	1.58	2.15	5.53	8.15	6.46	3.72	**27.59**
	corn	0.99	1.91	8.31	9.92	6.34	1.93	**29.40**
	alfalfa	2.57	4.61	5.98	7.75	3.26	2.16	**26.33**
	other hay	1.74	2.97	6.64	7.64	3.80	3.04	**25.83**
	irrigated pasture	1.04	1.95	4.65	5.39	4.28	3.15	**20.46**
1974	winter wheat	1.42	4.32	5.95	3.84	--	--	**15.53**
	spring wheat	1.06	3.13	5.60	3.93	--	--	**13.72**
	barley	1.58	4.86	7.91	6.36	1.99	0.98	**23.68**
	oats	1.34	4.14	6.73	5.41	1.69	0.84	**20.15**
	dry beans	0.89	1.32	6.24	8.93	3.59	1.04	**22.01**
	sugar beets	1.55	2.55	5.81	8.38	6.90	3.62	**28.81**
	corn	0.74	1.73	6.72	7.85	5.20	1.45	**23.69**
	alfalfa	2.42	5.23	6.03	7.64	3.35	2.02	**26.69**
	other hay	1.66	3.42	6.78	7.64	3.93	2.86	**26.29**
	irrigated pasture	0.99	2.25	4.75	5.39	4.44	2.98	**20.80**
1976	winter wheat	1.26	3.76	4.56	3.17	--	--	**12.75**
	spring wheat	1.14	3.30	5.17	3.91	--	--	**13.52**
	barley	1.73	5.25	7.50	6.51	2.18	1.28	**24.45**
	oats	1.73	5.25	7.50	6.51	2.18	1.28	**24.45**
	dry beans	0.84	1.21	5.03	7.78	3.34	1.15	**19.35**
	sugar beets	1.59	2.58	5.16	8.02	7.06	4.40	**28.81**
	corn	0.82	1.89	6.42	8.09	5.74	1.90	**24.86**
	alfalfa	2.59	5.53	5.59	7.65	3.58	2.57	**27.51**
	other hay	1.52	3.10	5.40	6.56	3.62	3.13	**23.33**
	irrigated pasture	0.91	2.04	3.78	4.63	4.08	3.25	**18.69**

Table 2.1.4.63 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1975	winter wheat	1.27	3.91	5.28	3.85	--	--	**14.31**
	spring wheat	0.95	2.87	5.01	3.98	--	--	**12.81**
	barley	1.29	4.05	6.43	5.87	1.90	0.97	**20.51**
	oats	1.35	4.22	6.70	6.11	1.98	1.01	**21.37**
	dry beans	0.71	1.06	4.90	7.95	3.31	0.99	**18.92**
	sugar beets	1.36	2.28	5.07	8.27	7.06	3.83	**27.87**
	corn	0.70	1.66	6.26	8.29	5.70	1.64	**24.25**
	alfalfa	2.22	4.89	5.49	7.89	3.58	2.23	**26.30**
	other hay	1.38	2.88	5.58	7.11	3.81	2.85	**23.61**
	irrigated pasture	0.82	1.89	3.91	5.03	4.29	2.98	**18.92**
1977	winter wheat	1.13	3.02	4.32	2.55	--	--	**11.02**
	spring wheat	1.19	3.09	5.71	3.68	--	--	**13.67**
	barley	1.31	3.57	6.02	4.44	1.44	0.82	**17.60**
	oats	1.44	3.93	6.62	4.89	1.58	0.90	**19.36**
	dry beans	0.82	1.07	5.22	6.88	2.86	0.96	**17.81**
	sugar beets	1.49	2.16	5.09	6.73	5.75	3.47	**24.69**
	corn	0.89	1.83	7.36	7.89	5.43	1.73	**25.13**
	alfalfa	2.39	4.56	5.44	6.33	2.87	1.99	**23.58**
	other hay	1.48	2.69	5.51	5.70	3.05	2.55	**20.98**
	irrigated pasture	0.88	1.77	3.86	4.03	3.44	2.66	**16.64**
1982	winter wheat	1.30	3.40	4.21	3.30	--	--	**12.21**
	spring wheat	1.08	2.74	4.40	3.75	--	--	**11.97**
	barley	1.58	4.18	6.12	5.98	2.14	0.89	**20.89**
	oats	1.73	4.59	6.72	6.56	2.35	0.98	**22.93**
	dry beans	0.78	0.99	4.18	7.29	3.34	0.82	**17.40**
	sugar beets	1.56	2.22	4.54	7.95	7.48	3.32	**27.07**
	corn	0.92	1.85	6.41	9.09	6.89	1.62	**26.78**
	alfalfa	2.59	4.84	5.01	7.71	3.86	1.97	**25.98**
	other hay	1.85	3.30	5.87	8.03	4.74	2.92	**26.71**
	irrigated pasture	1.11	2.17	4.12	5.67	5.34	3.03	**21.44**
1979	winter wheat	1.09	2.69	3.92	2.70	--	--	**10.40**
	spring wheat	1.36	3.30	6.21	4.66	--	--	**15.53**
	barley	1.47	3.71	6.36	5.48	1.58	0.99	**19.59**
	oats	1.69	4.28	7.34	6.32	1.82	1.14	**22.59**
	dry beans	0.99	1.20	5.95	9.14	3.39	1.25	**21.92**
	sugar beets	1.67	2.26	5.42	8.37	6.36	4.24	**28.32**
	corn	0.94	1.81	7.37	9.24	5.64	1.99	**26.99**
	alfalfa	2.62	4.64	5.63	7.65	3.09	2.37	**26.00**
	other hay	1.56	2.65	5.52	6.66	3.17	2.92	**22.48**
	irrigated pasture	0.94	1.73	3.87	4.71	3.57	3.04	**17.86**

Table 2.1.4.63 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Pathfinder to Guernsey subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1987	winter wheat	1.59	3.87	5.09	3.24	--	--	**13.79**
	spring wheat	1.26	2.99	5.08	3.52	--	--	**12.85**
	barley	1.71	4.24	6.57	5.23	1.61	0.88	**20.24**
	oats	1.80	4.46	6.91	5.50	1.69	0.93	**21.29**
	dry beans	1.15	1.35	6.09	8.64	3.41	1.10	**21.74**
	sugar beets	1.90	2.50	5.43	7.75	6.27	3.63	**27.48**
	corn	1.11	2.07	7.62	8.82	5.75	1.76	**27.13**
	alfalfa	2.67	4.64	5.09	6.38	2.75	1.82	**23.35**
	other hay	2.27	3.77	7.11	7.91	4.02	3.22	**28.30**
	irrigated pasture	1.36	2.48	4.97	5.59	4.53	3.35	**22.28**
1990	winter wheat	1.31	3.52	5.26	3.06	--	--	**13.15**
	spring wheat	0.85	2.21	4.28	2.71	--	--	**10.05**
	barley	1.40	3.85	6.78	4.92	1.71	0.92	**19.58**
	oats	1.41	3.86	6.80	4.94	1.72	0.93	**19.66**
	dry beans	0.88	1.14	5.83	7.55	3.37	1.07	**19.84**
	sugar beets	1.61	2.36	5.80	7.55	6.91	3.96	**28.19**
	corn	0.96	1.98	8.29	8.76	6.45	1.96	**28.40**
	alfalfa	2.37	4.54	5.66	6.49	3.16	2.08	**24.30**
	other hay	1.30	2.39	5.13	5.21	2.99	2.38	**19.40**
	irrigated pasture	0.78	1.57	3.59	3.69	3.36	2.47	**15.46**

Notes:
(1) See Tables 2.1.4.60., 2.1.4.61., and 2.1.4.62.

2.1.4.7.6 Adjusted Crop Evapotranspiration, ET_c – Guernsey to State Line Subbasin

Annual crop yields and derived area-weighted annual crop yields for each crop during the 1972 through 2001 study period in the Guernsey to State Line subbasin are shown in Table 2.1.4.64. As shown at the top of this table, the Guernsey to State Line subbasin lies almost entirely within Goshen County. The assumptions, based on tabulated NASS yield data, underlying derivation of the area-weighted yields for each crop are included near the tops of tabulations of individual crop yields. These assumptions in the Guernsey to State Line subbasin state that all crops under consideration have been irrigated and harvested in the subbasin during the period of record. This table also shows years and yields that were graphed to derive polynomial equations for determining $Y_{env(C)}$ for subbasin crops. Area-weighted annual yield values, Y_{env} polynomial trend lines, and Y_{env} polynomial equations during the study period for each crop are graphed in Figures 2.1.4.21 through 2.1.4.29.

Table 2.1.4.64 Area-weighted crop yields - Guernsey to State Line subbasin

	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
Portion of total Guernsey to State Line subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Crop: alfalfa											
Units: tons per acre											

Assumption: alfalfa production ongoing through entire 1972 - 2001 period in Goshen County; estimate Goshen County annual yield values (in shaded cells) during years when actual data are not available

National Agricultural Statistics Service (NASS) crop yield data			County:									Guernsey to State Line subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield (1)
1972	Alfalfa	ton/acre	2.20	1.90	2.03	2.66	3.30	3.00	2.42	2.80	3.30	1.80	3.30
1973	Alfalfa	ton/acre	2.27	1.90	2.30	2.80	3.50	3.10	2.46	2.80	3.17	1.90	3.50
1974	Alfalfa	ton/acre	2.20	1.90	2.20	2.91	3.65	3.60	2.21	2.71	2.80	1.70	3.65
1975	Alfalfa	ton/acre	2.00	2.06	2.30	3.11	3.53	2.80	2.50	2.31	2.85	1.70	3.53
1976	Alfalfa	ton/acre	2.11	1.50	2.40	3.50	3.70	2.51	2.57	2.12	2.60	1.60	3.70
1977	Alfalfa	ton/acre	1.90	1.60	1.90	2.89	3.50	2.80	2.10	1.80	2.30	1.30	3.50
1978	Alfalfa	ton/acre	2.60	1.60	2.10	3.32	3.94	2.50	2.19	2.40	2.40	1.60	3.94
1979	Alfalfa	ton/acre	2.50	2.00	2.20	3.80	3.80	2.90	2.24	2.60	3.30	1.70	3.80
1980	Alfalfa	ton/acre	2.30	2.10	2.00	3.00	3.60	2.90	2.60	2.30	2.84	1.20	3.60
1981	Alfalfa	ton/acre	2.60	2.20	2.20	3.40	4.40	2.80	2.60	2.90	2.90	1.50	4.40
1982	Alfalfa	ton/acre	2.54	2.47	2.03	2.90	3.73	3.35	3.54	2.55	2.50	1.44	3.73
1983	Alfalfa	ton/acre	2.32	2.67	2.24	3.20	4.70	3.50	2.90	2.85	2.87	1.20	4.70
1984	Alfalfa	ton/acre	2.40	2.20	2.00	3.20	4.03	3.40	2.30	3.00	3.10	1.80	4.03
1985	Alfalfa	ton/acre	1.13	2.29	1.64	2.90	3.10	3.23	1.21	2.60	2.81	1.55	3.10
1986	Alfalfa	ton/acre	2.10	1.71	2.24	3.51	4.29	3.90	2.27	3.46	3.22	1.54	4.29
1987	Alfalfa	ton/acre	2.00	1.64	2.00	3.45	4.00	3.13	2.04	2.15	2.78	1.29	4.00
1988	Alfalfa	ton/acre	2.20	2.12	1.65	3.24	4.54	3.67	1.93	2.53	2.63	1.33	4.54
1989	Alfalfa	ton/acre	1.93	2.24	1.83	3.14	4.14	4.44	2.18	1.96	3.00	1.38	4.14
1990	Alfalfa	ton/acre	1.94	1.65	2.36	3.40	4.25	3.50	2.25	2.00	2.97	1.62	4.25
1991	Alfalfa	ton/acre	1.71	2.10	2.40	3.49	4.09	3.50	2.30	2.60	3.90	1.40	4.09
1992	Alfalfa	ton/acre	1.80	2.10	2.00	3.10	3.81	3.70	2.50	2.30	2.80	1.30	3.81
1993	Alfalfa	ton/acre	2.30	2.10	2.70	3.42	4.50	3.60	2.80	3.40	3.50	1.40	4.50
1994	Alfalfa	ton/acre	2.10	2.00	2.10	3.13	4.20	4.09	2.36	3.40	3.50	1.70	4.20
1995	Alfalfa	ton/acre	1.44	2.44	2.85	3.43	4.89	3.88	2.44	3.33	3.42	1.50	4.89
1996	Alfalfa	ton/acre	1.87	2.15	2.39	3.31	4.46	3.61	2.48	2.40	3.48	1.46	4.46
1997	Alfalfa	ton/acre	1.90	2.16	2.60	4.00	4.52	4.11	3.10	2.83	4.12	1.93	4.52
1998	Alfalfa	ton/acre	2.02	2.17	2.20	3.46	4.40	4.00	2.64	3.33	4.01	1.60	4.40
1999	Alfalfa	ton/acre	2.10	2.18	2.64	3.47	4.52	3.86	2.60	3.80	3.83	1.64	4.52
2000	Alfalfa	ton/acre	1.87	2.00	1.97	3.53	4.31	4.06	2.65	3.33	3.30	1.63	4.31
2001	Alfalfa	ton/acre	1.74	2.00	2.40	3.55	4.40	3.58	2.63	3.75	3.40	1.65	4.40

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1974	2	3.65
	1976	4	3.70
	1978	6	3.94
	1986	14	4.29
	1990	18	4.25
	1993	21	4.50
	1997	25	4.52
	1999	27	4.52

Derived $Y_{env(ALFALFA)}$ polynomial equation: $y = -0.0011x^2 + 0.07x + 3.4416$ (see Figure 2.1.4.21.)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.64 Area-weighted crop yields - Guernsey to State Line subbasin (cont)

Crop: barley

Units: bushels per acre

Assumption: barley production in Goshen County appears to have occurred during the entire 1972 through 2001 study period; estimated annual Goshen County yields during years for which data do not exist

National Agricultural Statistics Service (NASS) crop yield data			County:										Guernsey to State Line subbasin - area-weighted yield (1)
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Barley	bu/acre		50.00	51.00	73.00	56.00	67.00	50.00	51.00	66.00	46.00	56.00
1973	Barley	bu/acre		47.00	46.93	48.00	56.00	63.00	46.20	58.00	66.00	45.00	56.00
1974	Barley	bu/acre		52.00	39.00	62.00	60.53	53.09	58.00	42.47	60.43		60.53
1975	Barley	bu/acre		40.00	40.00	79.89	63.00	58.73	50.00	65.00	58.00		63.00
1976	Barley	bu/acre		60.00	50.00	79.00	56.00	58.94	70.00	50.00	50.00		56.00
1977	Barley	bu/acre	49.00	55.00	26.00	68.00	44.00	39.00	49.00	32.00	30.00		44.00
1978	Barley	bu/acre	62.00	70.00	32.00	77.00	62.00	61.00	60.00	42.00	37.00		62.00
1979	Barley	bu/acre	32.00	38.00	31.00	70.00	50.00	51.00		51.00	54.00		50.00
1980	Barley	bu/acre	43.60	60.00	53.11	79.79	53.47	49.76	34.00	42.55	49.53		53.47
1981	Barley	bu/acre	53.63	53.50	44.63	79.54	45.93	48.89		50.00	53.85		45.93
1982	Barley	bu/acre	65.00	65.00	55.00	63.40	57.06	56.28		55.00	62.00		57.06
1983	Barley	bu/acre	50.00	60.00	66.50	77.35	69.58	71.45	65.00	50.00	48.88		69.58
1984	Barley	bu/acre	50.00	70.00	66.00	65.00	70.00	70.00	64.00	51.00	54.00		70.00
1985	Barley	bu/acre	48.00	60.60	68.10	68.00	66.00	78.00	55.00	51.00	54.00		66.00
1986	Barley	bu/acre	50.00	73.29	66.33	77.49	68.46	74.29	57.00	65.00	69.00		68.46
1987	Barley	bu/acre	50.00	65.00	44.82	76.47	47.00	77.24	52.00	70.00	55.00		47.00
1988	Barley	bu/acre	60.00	70.00	33.00	51.88	45.00	41.48	46.00	42.00	41.00		45.00
1989	Barley	bu/acre	55.00	65.00	53.33	73.00	59.82	63.80	50.00	57.50	64.15		59.82
1990	Barley	bu/acre	60.00	70.00	55.00	73.03	62.50	67.76	45.00	60.50	66.44		62.50
1991	Barley	bu/acre	70.00	65.00	62.00	82.40	70.47	74.59	65.00	69.00	68.00		70.47
1992	Barley	bu/acre			66.00	83.20	70.00	75.00	81.00	61.00	60.00		70.00
1993	Barley	bu/acre			65.00	101.80	65.00	68.33	55.00	70.00	67.50		65.00
1994	Barley	bu/acre			55.00	70.00	69.00	66.00	75.00	76.00	36.00		69.00
1995	Barley	bu/acre			86.00	103.00	83.00	70.34			69.00		83.00
1996	Barley	bu/acre				93.36	75.91	70.85			81.03		75.91
1997	Barley	bu/acre				87.00	57.00	80.09	70.00		86.00		57.00
1998	Barley	bu/acre				85.33	69.99		82.86		101.05		69.99
1999	Barley	bu/acre				96.51	78.80						78.80
2000	Barley	bu/acre				75.00	72.28				100.00		72.28
2001	Barley	bu/acre				76.00	72.83						72.83

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1974	2	60.53
	1978	6	62.00
	1983	11	69.58
	1984	12	70.00
	1991	19	70.47
	1992	20	70.00
	1996	24	75.91
	1999	27	78.80

Derived $Y_{env(BARLEY)}$ polynomial equation: $y = -0.0011x^2 + 0.6946x + 58.808$ (see Figure 2.1.4.22.)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.64 Area-weighted crop yields - Guernsey to State Line subbasin (cont)

Crop: corn

Units: bushels per acre

Assumption: corn production in Goshen County appears to have occurred during the entire 1972 through 2001 study period; estimate annual Goshen County yields during years for which data do not exist

National Agricultural Statistics Service (NASS) crop yield data			County:										Guernsey to State Line subbasin - area-weighted yield (1)
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Corn	bu/acre		70.00	57.00	80.00	94.00	78.00	70.00		94.00		94.00
1973	Corn	bu/acre	71.00	74.00	55.00	84.78	89.22	97.00	73.00		116.00		89.22
1974	Corn	bu/acre		78.00	60.00	50.50	79.50	101.25	50.00		77.00		79.50
1975	Corn	bu/acre		63.00	66.00	59.00	85.07	66.00	55.00		96.00		85.07
1976	Corn	bu/acre		55.00	70.00	85.00	93.08	94.00	55.00		98.00		93.08
1977	Corn	bu/acre		55.00	76.00	86.00	94.00	95.00	55.00		73.80		94.00
1978	Corn	bu/acre		61.00	91.00	85.40	89.50	66.00	61.00	88.00	73.00		89.50
1979	Corn	bu/acre			80.00	86.00	89.83	75.00	75.00	70.00	88.00		89.83
1980	Corn	bu/acre			90.00	90.00	102.90	95.00	85.00	93.00	90.00		102.90
1981	Corn	bu/acre			84.00	84.00	113.53	90.00	74.00	92.00	112.00		113.53
1982	Corn	bu/acre			84.00	98.00	111.00	95.00	87.00	88.00	104.94		111.00
1983	Corn	bu/acre			85.00	94.00	110.55	101.00	78.00	100.00	95.00		110.55
1984	Corn	bu/acre			85.00	90.00	105.39	97.00	65.00	99.00	90.00		105.39
1985	Corn	bu/acre			86.00	91.00	100.00	94.00	60.00	90.00	92.32		100.00
1986	Corn	bu/acre			85.00	104.00	119.70	119.00	76.00	102.00	108.00		119.70
1987	Corn	bu/acre			92.00	91.00	117.75	112.11	80.00	95.00	97.00		117.75
1988	Corn	bu/acre			126.00	95.00	130.78	127.00	90.00	108.00	104.00		130.78
1989	Corn	bu/acre			91.00	92.08	96.91	102.00	85.00	90.00	98.14		96.91
1990	Corn	bu/acre			120.00	92.00	127.99	123.00	90.00	113.33	111.80		127.99
1991	Corn	bu/acre			99.00	95.00	125.99	109.04	94.00	66.00	106.00		125.99
1992	Corn	bu/acre			97.00	78.00	101.81	102.00	38.00	94.00	92.00		101.81
1993	Corn	bu/acre			80.00	88.50	82.00	65.50	79.00	94.00	80.00		82.00
1994	Corn	bu/acre				111.00	130.39	111.72			103.00		130.39
1995	Corn	bu/acre				108.00	113.64				80.00		113.64
1996	Corn	bu/acre				105.00	130.87		103.33		101.90		130.87
1997	Corn	bu/acre				126.07	140.00	135.00			132.00		140.00
1998	Corn	bu/acre					136.99	127.94			138.26		136.99
1999	Corn	bu/acre				101.43	122.17	120.00			135.00		122.17
2000	Corn	bu/acre				112.86	136.63	142.86			130.81		136.63
2001	Corn	bu/acre					133.33	135.00			112.94		133.33

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1973	1	89.22
	1976	4	93.08
	1980	8	102.90
	1982	10	111.00
	1986	14	119.70
	1990	18	127.99
	1994	22	130.39
	1998	26	136.99
	2000	28	136.63

Derived $Y_{env(CORN)}$ polynomial equation: $y = -0.0411x^2 + 3.1626x + 80.544$ (see Figure 2.1.4.23.)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.64 Area-weighted crop yields - Guernsey to State Line subbasin (cont)

Crop: dry beans

Units: hundred pounds per acre (cwt/acre)

Assumption: dry beans production data exists for the entire 1972 through 2001 study period in Goshen County

National Agricultural Statistics Service (NASS) crop yield data			County:										Guernsey to State Line subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield (1)
1972	Dry beans	cwt/acre			17.75	18.80	19.70	18.30			19.50		19.70
1973	Dry beans	cwt/acre			17.50	17.50	18.20	18.00			17.50		18.20
1974	Dry beans	cwt/acre			17.20	17.80	19.48	19.90			19.90		19.48
1975	Dry beans	cwt/acre			15.40	18.30	16.84	17.60			17.60		16.84
1976	Dry beans	cwt/acre			16.00	19.30	17.80	16.00			16.50		17.80
1977	Dry beans	cwt/acre			14.23	19.50	17.90	17.60			14.00		17.90
1978	Dry beans	cwt/acre			15.80	16.60	16.29	14.30			15.80		16.29
1979	Dry beans	cwt/acre			19.00	21.00	19.11	18.00			18.00		19.11
1980	Dry beans	cwt/acre			18.80	19.00	21.70	20.70			18.43		21.70
1981	Dry beans	cwt/acre			17.00	21.30	22.04	20.60			22.10		22.04
1982	Dry beans	cwt/acre			15.00	19.70	18.07	16.60			17.00		18.07
1983	Dry beans	cwt/acre			14.60	19.60	18.80	16.70			18.50		18.80
1984	Dry beans	cwt/acre			19.00	19.80	22.20	20.00			19.46		22.20
1985	Dry beans	cwt/acre			18.00	15.10	19.00	18.80			14.40		19.00
1986	Dry beans	cwt/acre			18.00	19.50	18.65	17.80			16.35		18.65
1987	Dry beans	cwt/acre			19.00	21.40	19.20	18.56			17.00		19.20
1988	Dry beans	cwt/acre			20.00	17.42	21.30	17.53			18.50		21.30
1989	Dry beans	cwt/acre			17.00	19.00	19.18	20.70			18.61		19.18
1990	Dry beans	cwt/acre			17.50	17.00	21.03	20.79			19.00		21.03
1991	Dry beans	cwt/acre			17.00	20.00	19.85	17.87			18.93		19.85
1992	Dry beans	cwt/acre			18.10	20.00	18.83	15.56			15.67		18.83
1993	Dry beans	cwt/acre			17.92	13.40	14.58	14.79			14.57		14.58
1994	Dry beans	cwt/acre			17.50	18.17	20.45	20.60			16.00		20.45
1995	Dry beans	cwt/acre			17.60	17.78	17.96	18.24			17.70		17.96
1996	Dry beans	cwt/acre			17.62	26.34	23.99	22.20			16.94		23.99
1997	Dry beans	cwt/acre			17.75	23.52	21.91	23.64			20.59		21.91
1998	Dry beans	cwt/acre			17.68	22.41	22.63	24.25			22.58		22.63
1999	Dry beans	cwt/acre			17.63	19.14	21.02	23.24			18.63		21.02
2000	Dry beans	cwt/acre			17.66	21.05	22.86	24.68			18.12		22.86
2001	Dry beans	cwt/acre			17.67	18.56	20.81	26.26			18.85		20.81

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1973	1	18.20
	1979	7	19.11
	1988	16	21.30
	1990	18	21.03
	1998	26	22.63
	2000	28	22.86

Derived $Y_{env(DRY\ BEANS)}$ polynomial equation: $y = -0.0009x^2 + 0.2052x + 17.716$ (see Figure 2.1.4.24.)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.64 Area-weighted crop yields - Guernsey to State Line subbasin (cont)

Crop: oats

Units: bushels per acre

Assumption: oats production in Goshen County appears to have occurred during the entire 1972 through 2001 study period; estimate annual Goshen County yields during years for which data do not exist

National Agricultural Statistics Service (NASS) crop yield data			County:										Guernsey to State Line subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield (1)
1972	Oats	bu/acre	50.00	61.00	66.00	65.67	64.00	54.33	57.00	66.00	60.00	55.00	64.00
1973	Oats	bu/acre	50.00	50.00	52.20	53.21	53.00	61.00	50.00	59.00	49.00	50.00	53.00
1974	Oats	bu/acre	39.00	50.00	33.00	50.00	48.00	63.00	43.23	43.00	59.81	60.00	48.00
1975	Oats	bu/acre	52.00	52.00	45.82	60.00	46.00	49.00	50.40	40.00	46.00	44.00	46.00
1976	Oats	bu/acre	56.00	59.00	56.79	58.00	54.00	63.00	58.00	60.00	55.00	53.00	54.00
1977	Oats	bu/acre	52.00	53.00	30.00	63.62	44.00	34.00	51.85	51.00	42.00	52.00	44.00
1978	Oats	bu/acre	58.50	62.00	75.35	76.00	76.00	76.00	62.00	79.00	77.00	79.00	76.00
1979	Oats	bu/acre	67.00	62.00	43.00	62.00	56.00	48.00	66.18	46.00	39.00	77.50	56.00
1980	Oats	bu/acre	58.00	72.00	48.00	60.00	59.70	69.00	64.00	55.00	59.00	65.00	59.70
1981	Oats	bu/acre	43.00	46.73	49.00	59.03	65.63	67.00	50.00	54.00	58.00	64.00	65.63
1982	Oats	bu/acre	65.50	62.00	70.00	64.60	79.00	79.42	68.00	74.00	59.00	74.00	79.00
1983	Oats	bu/acre	65.00	60.00	58.17	66.23	60.00	64.00	61.00	60.00	51.00	64.00	60.00
1984	Oats	bu/acre	53.00	54.00	52.00	73.00	55.00	64.46	54.00	58.00	46.29	54.00	55.00
1985	Oats	bu/acre	53.00	51.00	59.00	65.65	60.00	59.00	50.44	58.00	47.00	63.00	60.00
1986	Oats	bu/acre	65.00	71.00	60.00	74.00	63.00	75.00	53.00	63.00	77.00	60.00	63.00
1987	Oats	bu/acre	61.00	68.00	48.36	63.33	80.21	85.27	51.00	71.00	69.00	56.00	80.21
1988	Oats	bu/acre	44.00	46.00	37.50	62.00	44.44	34.50	34.00	39.00	33.00	52.00	44.44
1989	Oats	bu/acre	60.00	62.00	42.50	62.00	47.00	63.00	52.00	50.00	50.00	61.00	47.00
1990	Oats	bu/acre	45.00	50.00	56.60	63.00	55.50	56.31	47.00	50.00	55.00	50.00	55.50
1991	Oats	bu/acre	45.00	56.00	72.00	71.00	69.00	60.00	53.00	50.00	85.00	56.00	69.00
1992	Oats	bu/acre	51.00	55.00	55.00	74.40	72.00	64.00	58.00	40.00	55.00	72.00	72.00
1993	Oats	bu/acre	49.00	65.00	59.00	86.00	86.00	82.75	72.50	66.00	77.00	65.00	86.00
1994	Oats	bu/acre	50.00	45.00	46.00	84.00	77.00	70.00	50.00	62.00	62.00	55.00	77.00
1995	Oats	bu/acre			58.00	94.12	71.90		91.67		73.64		71.90
1996	Oats	bu/acre			58.00	80.69	75.18	46.67	44.23	70.00	71.00		75.18
1997	Oats	bu/acre			51.82	85.42	71.43	75.00	72.22	80.00	64.29		71.43
1998	Oats	bu/acre			55.00	88.89	76.30	71.67	75.00		50.00		76.30
1999	Oats	bu/acre			55.00	94.29	70.00		78.00		64.00		70.00
2000	Oats	bu/acre			56.00	108.89	72.96		72.00		65.00		72.96
2001	Oats	bu/acre			55.00	76.67	67.00	75.00	68.00		96.67		67.00

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	64.00
	1981	9	65.63
	1992	20	72.00
	1994	22	77.00
	1996	24	75.18

Derived $Y_{env(OATS)}$ polynomial equation: $y = 0.0202x^2 + 0.0033x + 63.86$ (see Figure 2.1.4.25.)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.64 Area-weighted crop yields - Guernsey to State Line subbasin (cont)

Crop: other hay (not including alfalfa)

Units: tons per acre

Assumption: other hay production data exists for the entire 1972 through 2001 study period in Goshen County

National Agricultural Statistics Service (NASS) crop yield data			County:										Guernsey to State Line subbasin - area-weighted yield (1)
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Other hay	ton/acre	1.10	1.11	1.16	1.50	1.20	1.50	1.00	1.10	1.30	1.17	1.20
1973	Other hay	ton/acre	1.00	1.13	1.20	1.70	1.20	1.30	1.60	1.00	1.10	1.45	1.20
1974	Other hay	ton/acre	1.00	1.19	1.40	1.53	1.20	1.40	0.80	1.10	1.20	1.23	1.20
1975	Other hay	ton/acre	0.84	1.10	0.90	1.46	1.50	1.04	1.30	0.90	1.10	1.05	1.50
1976	Other hay	ton/acre	1.01	1.20	1.10	1.56	1.20	0.70	1.00	1.00	0.87	1.27	1.20
1977	Other hay	ton/acre	0.90	0.98	1.00	1.24	1.13	0.70	0.80	0.90	1.00	1.00	1.13
1978	Other hay	ton/acre	1.10	1.30	0.90	1.80	1.60	0.90	1.30	1.10	1.20	1.14	1.60
1979	Other hay	ton/acre	1.20	1.40	0.90	2.24	1.20	1.37	1.20	1.20	1.10	1.32	1.20
1980	Other hay	ton/acre	0.90	1.30	1.39	1.51	1.10	1.10	0.90	0.90	1.40	1.11	1.10
1981	Other hay	ton/acre	1.00	1.40	1.40	1.63	1.50	1.20	1.20	1.40	1.47	1.18	1.50
1982	Other hay	ton/acre	1.16	1.59	1.70	1.60	1.86	1.03	2.40	1.61	1.10	1.16	1.86
1983	Other hay	ton/acre	1.31	1.62	2.20	2.20	1.50	1.40	1.85	1.10	1.55	1.28	1.50
1984	Other hay	ton/acre	1.20	1.60	1.40	2.20	1.80	1.10	1.20	1.40	1.40	1.20	1.80
1985	Other hay	ton/acre	1.06	1.66	1.27	1.91	1.47	1.38	1.24	1.00	1.37	1.03	1.47
1986	Other hay	ton/acre	1.24	1.37	0.90	1.73	2.02	1.64	1.90	1.90	1.61	1.18	2.02
1987	Other hay	ton/acre	1.44	1.57	1.36	2.30	1.48	1.99	1.67	1.90	1.15	0.84	1.48
1988	Other hay	ton/acre	1.37	1.36	0.75	0.97	1.41	1.16	1.55	1.60	1.34	0.80	1.41
1989	Other hay	ton/acre	0.68	0.87	0.70	1.29	1.36	1.31	0.78	1.90	1.11	0.78	1.36
1990	Other hay	ton/acre	1.10	1.27	1.00	1.56	1.55	1.53	1.01	1.87	1.60	0.99	1.55
1991	Other hay	ton/acre	1.90	1.34	1.60	1.79	1.83	1.70	1.70	1.40	1.70	1.09	1.83
1992	Other hay	ton/acre	1.11	1.30	1.30	1.79	1.40	1.29	0.90	0.90	1.00	0.89	1.40
1993	Other hay	ton/acre	1.30	1.80	1.90	2.10	2.10	2.10	1.80	1.30	1.20	1.10	2.10
1994	Other hay	ton/acre	1.20	1.42	1.20	1.70	1.50	1.90	0.90	1.40	1.00	0.86	1.50
1995	Other hay	ton/acre	1.10	1.66	1.70	1.80	1.80	1.71	1.26	1.40	1.70	1.23	1.80
1996	Other hay	ton/acre	1.32	1.50	1.56	1.84	1.66	1.67	1.31	0.90	1.38	1.03	1.66
1997	Other hay	ton/acre	1.21	1.54	1.81	2.17	2.00	1.58	1.60	2.00	2.11	1.10	2.00
1998	Other hay	ton/acre	1.14	1.58	1.62	1.92	2.20	1.70	1.37	2.33	1.29	1.06	2.20
1999	Other hay	ton/acre	1.50	1.54	1.90	1.89	1.67	1.50	1.29	1.13	1.90	1.18	1.67
2000	Other hay	ton/acre	1.40	1.56	1.67	1.92	1.50	1.58	1.37	1.00	1.00	1.09	1.50
2001	Other hay	ton/acre	1.03	1.13	1.71	1.91	2.25	1.31	1.39	1.00	1.31	1.01	2.25

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1975	3	1.20
	1978	6	1.60
	1984	12	1.80
	1991	19	1.83
	1997	25	2.00
	2001	29	2.25

Derived $Y_{env(OTHER\ HAY)}$ polynomial equation: $y = 0.0004x^2 + 0.0133x + 1.4783$ (see Figure 2.1.4.26.)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.64 Area-weighted crop yields - Guernsey to State Line subbasin (cont)

Crop: spring wheat
Units: tons per acre

Assumption: spring wheat production in Goshen County appears to have occurred during the entire 1972 through 2001 study period; estimate annual Goshen County yields during years for which data do not exist

National Agricultural Statistics Service (NASS) crop yield data			County:										Guernsey to State Line subbasin - area-weighted yield (1)
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Spring wheat	bu/acre		40.00	35.00	47.00	35.00		36.00		34.00		35.00
1973	Spring wheat	bu/acre		34.00	33.67	44.00	33.00		30.00	33.00	33.00		33.00
1974	Spring wheat	bu/acre		36.00	35.33	50.00	33.00	41.00	28.00	35.00	37.00		33.00
1975	Spring wheat	bu/acre		34.00	40.00	37.00	42.00	35.00	27.00	38.00	35.00		42.00
1976	Spring wheat	bu/acre		35.00	43.00	45.00	40.00	35.00	27.00	39.00	33.00		40.00
1977	Spring wheat	bu/acre		34.00	38.00	47.00	39.00	33.00	30.00	36.00	31.00		39.00
1978	Spring wheat	bu/acre		36.00	32.00	55.00	34.00	33.00	32.00	34.00	32.00		34.00
1979	Spring wheat	bu/acre		38.00	49.40	61.00	42.00	50.00	34.00	45.00	50.00		42.00
1980	Spring wheat	bu/acre		32.00	35.00	41.67	32.00	34.00	30.00	33.00	34.00		32.00
1981	Spring wheat	bu/acre		27.00	29.50	34.00	34.00	36.00	25.00	32.00	37.00		34.00
1982	Spring wheat	bu/acre		38.00	37.25	50.00	52.00	58.00	32.00	52.33	56.67		52.00
1983	Spring wheat	bu/acre		40.00	40.00	59.60	54.00	60.00	31.00	53.00	60.00		54.00
1984	Spring wheat	bu/acre		60.00	44.00	63.00	55.00	50.00	30.00	53.00	45.00		55.00
1985	Spring wheat	bu/acre		49.00	40.00	49.00	40.75	41.00	30.00	42.00	38.00		40.75
1986	Spring wheat	bu/acre		44.00	50.00	40.00	63.00	57.50	30.00	55.00	53.00		63.00
1987	Spring wheat	bu/acre		36.00	40.00	42.00	34.00	42.00	31.00	40.00	38.00		34.00
1988	Spring wheat	bu/acre		37.00	41.00	52.00	55.00	52.00	30.00	44.00	41.00		55.00
1989	Spring wheat	bu/acre		43.00	43.00	65.00	46.00	43.00	30.00	47.00	47.00		46.00
1990	Spring wheat	bu/acre			30.00	56.00	50.00	47.00	30.00		30.00		50.00
1991	Spring wheat	bu/acre					49.60	54.00	48.00	50.00			49.60
1992	Spring wheat	bu/acre				65.00	40.00	73.00		36.00			40.00
1993	Spring wheat	bu/acre				89.00	48.12	79.00		58.00			48.12
1994	Spring wheat	bu/acre				54.17	41.00	45.00		44.17			41.00
1995	Spring wheat	bu/acre				62.00	67.00	68.46					67.00
1996	Spring wheat	bu/acre				66.67	49.14	60.00					49.14
1997	Spring wheat	bu/acre					44.00	58.00			50.00		44.00
1998	Spring wheat	bu/acre					49.85						49.85
1999	Spring wheat	bu/acre					50.20						50.20
2000	Spring wheat	bu/acre					52.04						52.04
2001	Spring wheat	bu/acre					49.05						49.05

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	35.00
	1975	3	33.00
	1979	7	42.00
	1982	10	40.75
	1984	12	50.00
	1988	16	49.85

Derived $Y_{env(SPRING\ WHEAT)}$ polynomial equation: $y = -0.034x^2 + 1.9351x + 33.159$ (see Figure 2.1.4.27.)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.64 Area-weighted crop yields - Guernsey to State Line subbasin (cont)

Crop: sugar beets

Units: tons per acre

Assumption: sugar beets production data exists for the entire 1972 through 2001 study period in Goshen County

National Agricultural Statistics Service (NASS) crop yield data			County:										Guernsey to State Line subbasin - area-weighted yield (1)
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Sugar beets	ton/acre			14.70	19.90	22.93	15.30			22.80		22.93
1973	Sugar beets	ton/acre			10.29	14.60	19.31	11.50			16.40		19.31
1974	Sugar beets	ton/acre					18.46	15.86			17.76		18.46
1975	Sugar beets	ton/acre					20.20	15.64			17.66		20.20
1976	Sugar beets	ton/acre					20.90	17.81			17.85		20.90
1977	Sugar beets	ton/acre					19.40	20.20			14.80		19.40
1978	Sugar beets	ton/acre					18.61	14.60			16.70		18.61
1979	Sugar beets	ton/acre					18.64	14.60			17.90		18.64
1980	Sugar beets	ton/acre					21.80	20.20			17.00		21.80
1981	Sugar beets	ton/acre					25.31	50.00			20.60		25.31
1982	Sugar beets	ton/acre					19.40	22.00			18.30		19.40
1983	Sugar beets	ton/acre					15.78	13.50			12.60		15.78
1984	Sugar beets	ton/acre				13.70	20.87	11.20			15.60		20.87
1985	Sugar beets	ton/acre				17.40	22.80	25.10			19.60		22.80
1986	Sugar beets	ton/acre				18.90	23.41	23.60			19.90		23.41
1987	Sugar beets	ton/acre				16.30	21.50	20.40			17.80		21.50
1988	Sugar beets	ton/acre				19.20	22.00	23.25			19.57		22.00
1989	Sugar beets	ton/acre				21.97	19.07	19.75			17.09		19.07
1990	Sugar beets	ton/acre				20.19	21.00	13.53			19.34		21.00
1991	Sugar beets	ton/acre				21.05	21.47	17.17			16.72		21.47
1992	Sugar beets	ton/acre				20.88	16.97	17.53			16.53		16.97
1993	Sugar beets	ton/acre				19.86	15.63	17.08			17.84		15.63
1994	Sugar beets	ton/acre				16.93	20.56	20.25			20.49		20.56
1995	Sugar beets	ton/acre				20.72	16.34	15.75			13.87		16.34
1996	Sugar beets	ton/acre				20.02	16.88	17.81			17.95		16.88
1997	Sugar beets	ton/acre				22.78	15.69	14.67			16.63		15.69
1998	Sugar beets	ton/acre				21.07	19.37	18.70			17.80		19.37
1999	Sugar beets	ton/acre				21.25	18.40	18.17			18.39		18.40
2000	Sugar beets	ton/acre				21.54	18.70	15.41			19.49		18.70
2001	Sugar beets	ton/acre				18.56	17.71	17.11			19.06		17.71

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1973	1	19.31
	1975	3	20.20
	1976	4	20.90
	1977	5	19.40
	1980	8	21.80
	1984	12	20.87
	1986	14	23.41
	1987	15	21.50

Derived $Y_{env(SUGARBEETS)}$ polynomial equation: $y = -0.0072x^2 + 0.3264x + 18.802$ (see Figure 2.1.4.28.)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.64 Area-weighted crop yields - Guernsey to State Line subbasin (cont)

Crop: winter wheat

Units: bushels per acre

Assumption: winter wheat beans production data exists for the entire 1972 through 2001 study period in Goshen County

National Agricultural Statistics Service (NASS) crop yield data			County:										Guernsey to State Line subbasin - area-weighted yield (1)
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Winter wheat	bu/acre		40.00	40.00	41.00	43.06	42.00		42.00	40.00		43.06
1973	Winter wheat	bu/acre		39.00	38.00	37.00	38.54	37.00		38.00	38.00		38.54
1974	Winter wheat	bu/acre		33.00	36.00	32.00	37.17	36.00		36.00	38.00		37.17
1975	Winter wheat	bu/acre		36.00	38.00	32.00	39.54	36.00		37.00	37.00		39.54
1976	Winter wheat	bu/acre		36.00	32.00	39.00	33.00	33.00		32.00	29.00		33.00
1977	Winter wheat	bu/acre		34.00	25.00	38.00	23.00	26.00		22.00	22.50		23.00
1978	Winter wheat	bu/acre		35.60	34.00		44.00	33.59		33.00	35.00		44.00
1979	Winter wheat	bu/acre		30.00	23.00		35.00	42.00		38.00	34.56		35.00
1980	Winter wheat	bu/acre		34.32	29.00		48.00	33.31		28.00	35.00		48.00
1981	Winter wheat	bu/acre		33.98	32.00		41.00	40.41		33.50	35.00		41.00
1982	Winter wheat	bu/acre		40.00	36.00		51.50	53.00		33.00	39.00		51.50
1983	Winter wheat	bu/acre		38.00	38.00		53.00	54.00		44.00	40.00		53.00
1984	Winter wheat	bu/acre		50.00	40.00	53.00	42.60	59.00		37.00	35.00		42.60
1985	Winter wheat	bu/acre		45.00	35.00	52.00	34.00	38.73		35.00	33.00		34.00
1986	Winter wheat	bu/acre		32.00	38.00	55.00	46.20	60.00		36.00	35.00		46.20
1987	Winter wheat	bu/acre		35.00	37.00	51.00	39.00	56.00		41.00	40.00		39.00
1988	Winter wheat	bu/acre		40.00	39.25	53.00	50.00	54.63		39.00	38.00		50.00
1989	Winter wheat	bu/acre		35.00	36.00	36.00	43.00	46.98		33.00	41.00		43.00
1990	Winter wheat	bu/acre		40.00	40.00	58.00	46.67	65.45		40.00	43.33		46.67
1991	Winter wheat	bu/acre	47.00	40.00	32.50	68.33	55.91	50.32		50.25	45.67		55.91
1992	Winter wheat	bu/acre		43.00	42.00	55.00	46.00	55.59		42.00	47.00		46.00
1993	Winter wheat	bu/acre		50.00	50.00	60.50	52.50	56.96		54.00	55.00		52.50
1994	Winter wheat	bu/acre		50.00	40.00	65.00	65.00	42.00		41.00	50.00		65.00
1995	Winter wheat	bu/acre			41.00		59.00	80.00		75.00	82.00		59.00
1996	Winter wheat	bu/acre			41.00		42.40	54.29			63.64		42.40
1997	Winter wheat	bu/acre			43.00		61.21	80.25			56.25		61.21
1998	Winter wheat	bu/acre			43.00		72.11	76.92			61.00		72.11
1999	Winter wheat	bu/acre			42.00		65.00	79.20			60.00		65.00
2000	Winter wheat	bu/acre			42.00		60.00	76.92					60.00
2001	Winter wheat	bu/acre			42.00		73.33	72.00			50.00		73.33

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1973	1	38.54
	1975	3	39.54
	1978	6	44.00
	1980	8	48.00
	1982	10	51.50
	1988	16	50.00
	1991	19	55.91
	1995	23	59.00
	1997	25	61.21
	1999	27	65.00

Derived $Y_{env(WINTER\ WHEAT)}$ polynomial equation: $y = -0.0031x^2 + 1.0232x + 37.046$ (see Figure 2.1.4.29.)

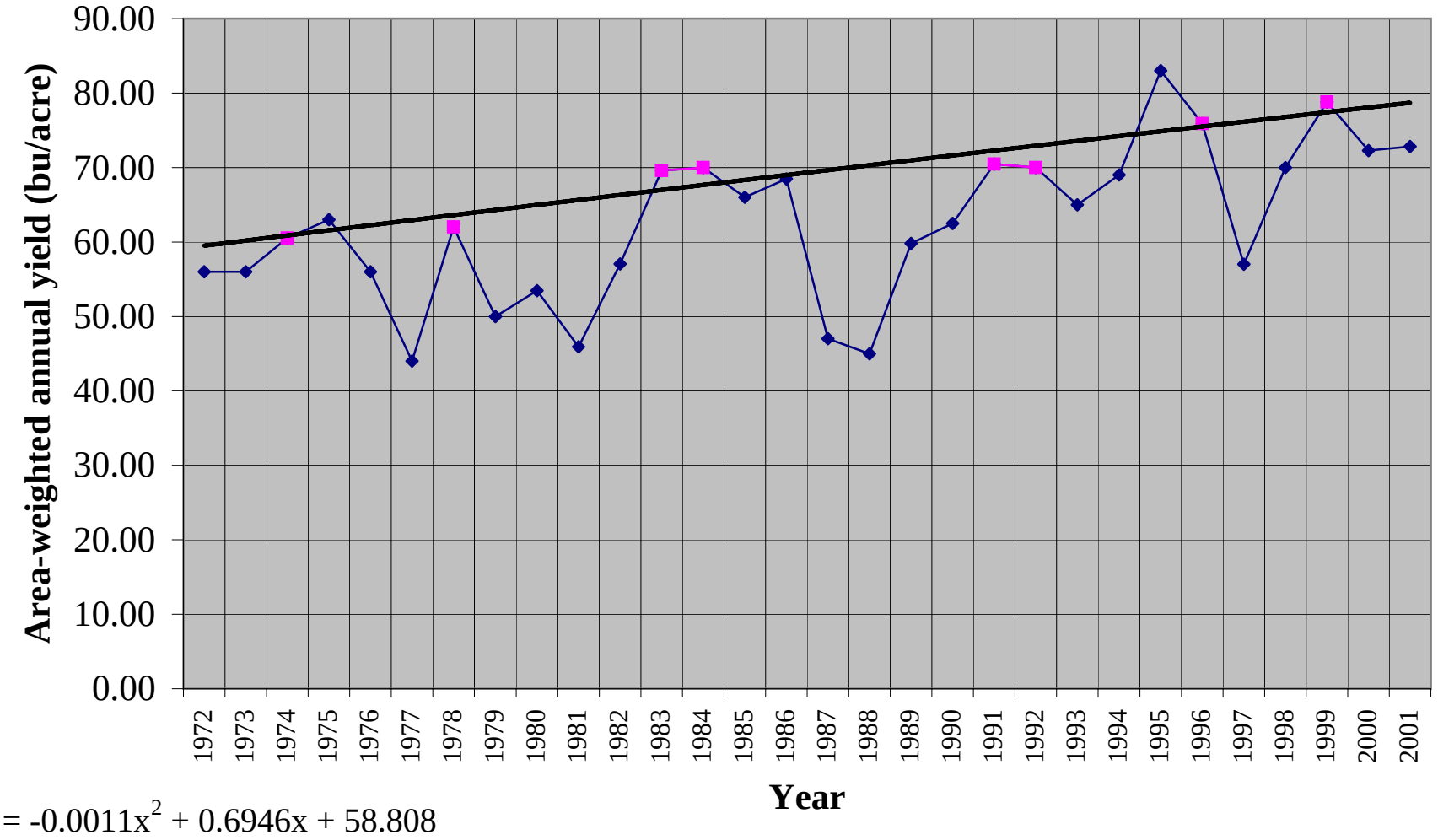
County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Notes:

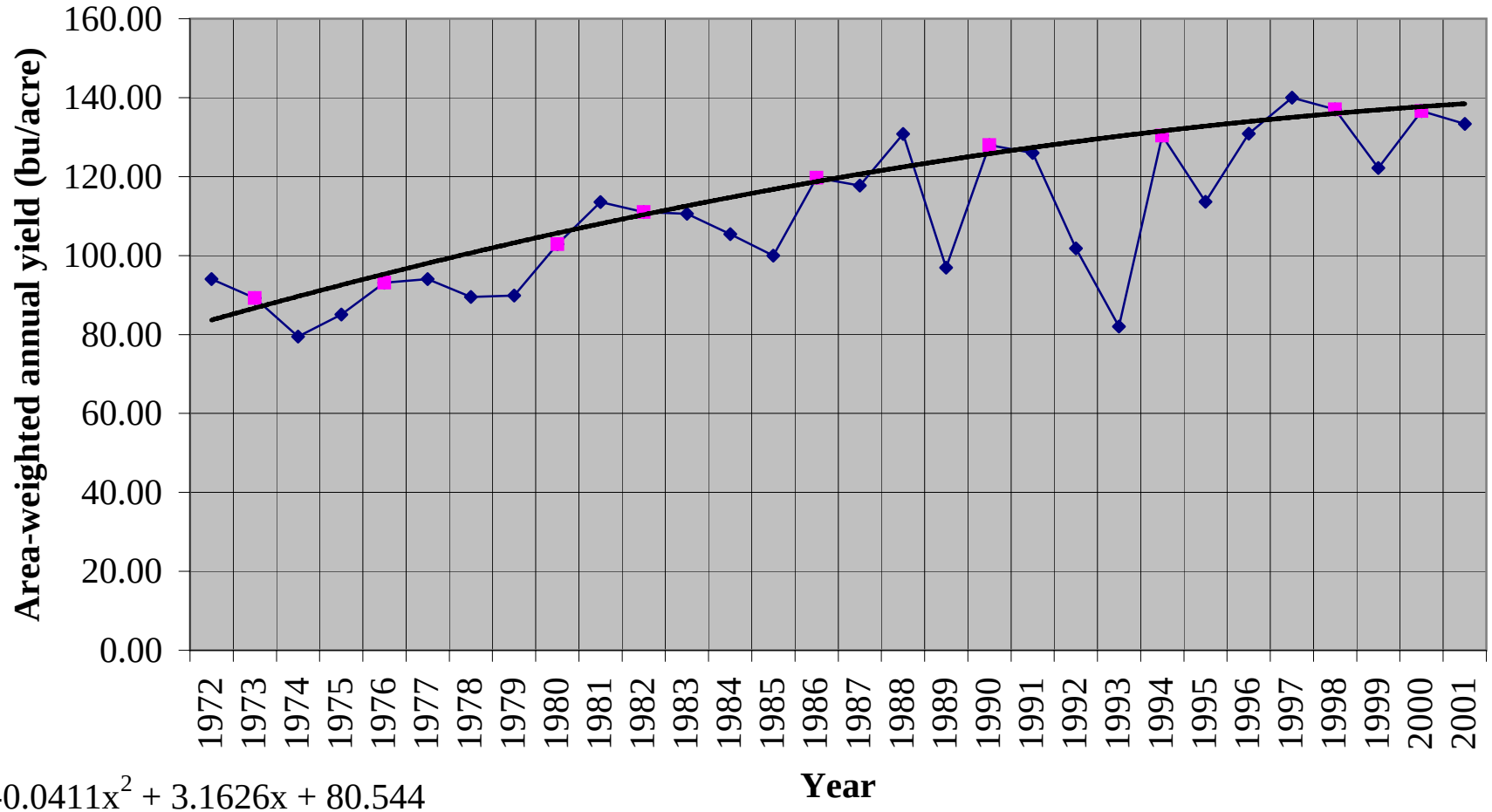
(1) See Table 2.1.4.51.

Figure 2.1.4.21.
Area-weighted annual barley yields and Y_{env} polynomial trend line and equation
Guernsey to State Line subbasin



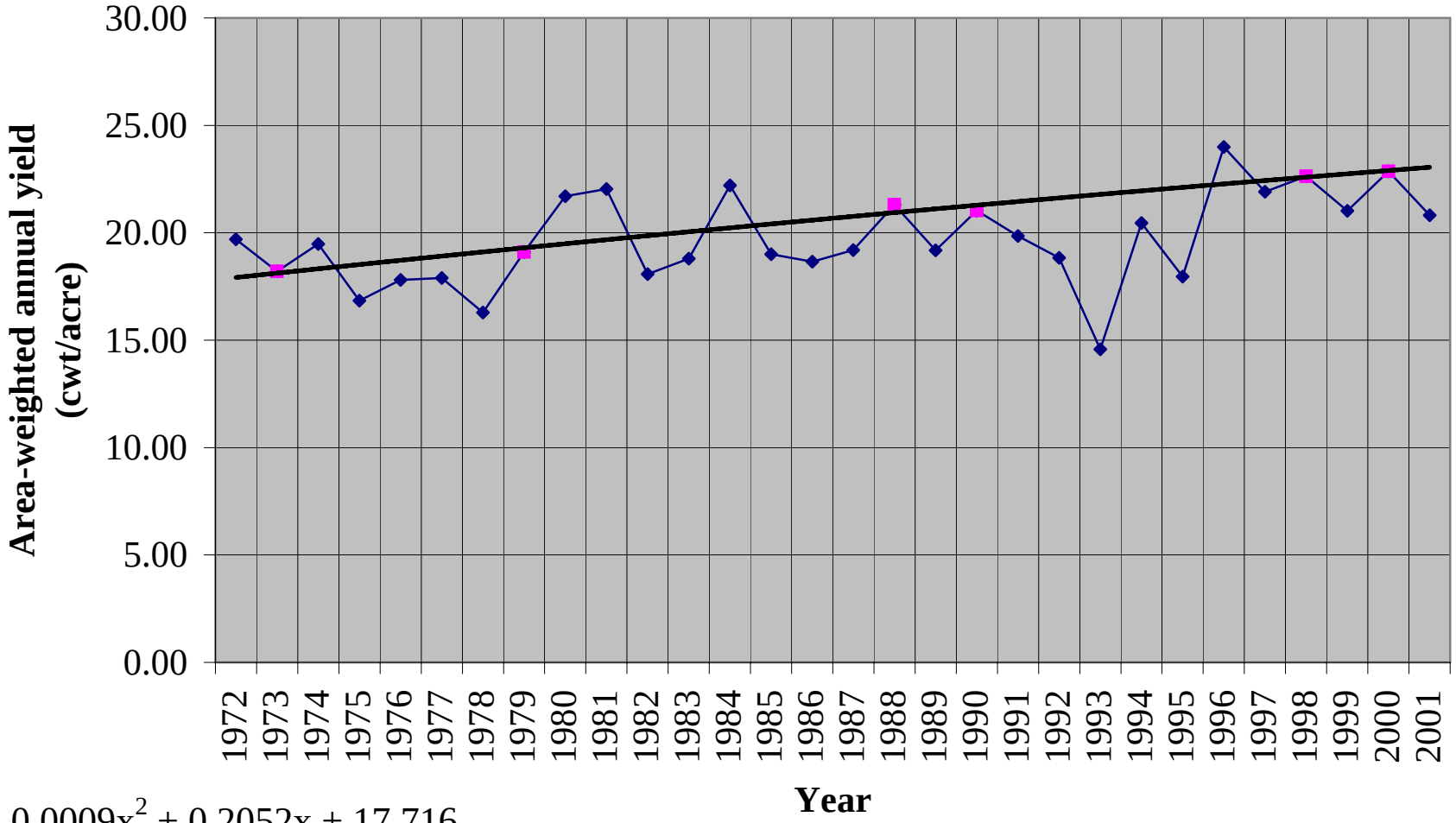
$y = -0.0011x^2 + 0.6946x + 58.808$

Figure 2.1.4.22.
Area-weighted annual corn yields and Y_{env} polynomial trend line and equation
Guernsey to State Line subbasin



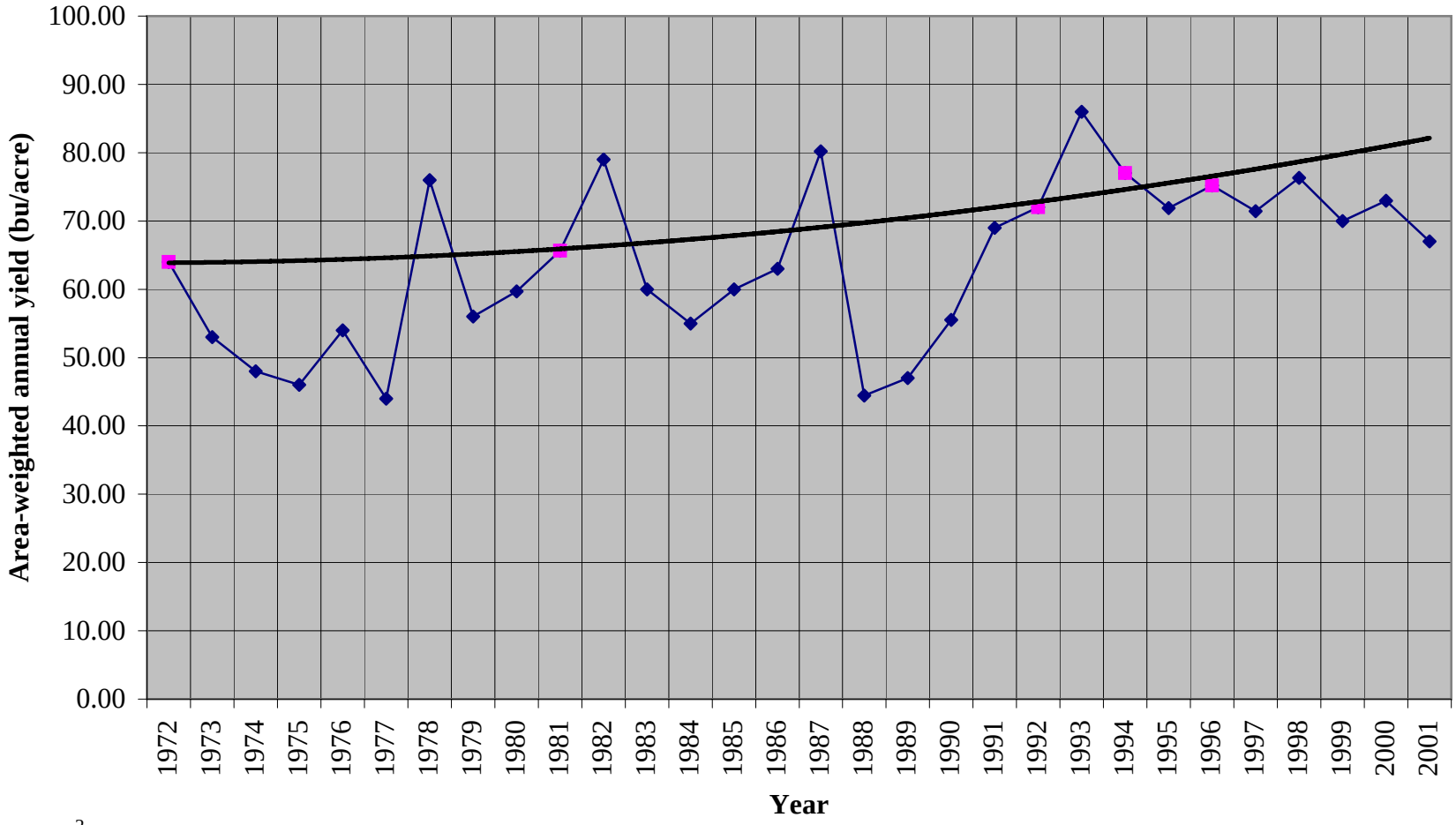
$y = -0.0411x^2 + 3.1626x + 80.544$

Figure 2.1.4.23.
Area-weighted annual dry bean yields and Y_{env} polynomial trend line and equation
Guernsey to State Line subbasin



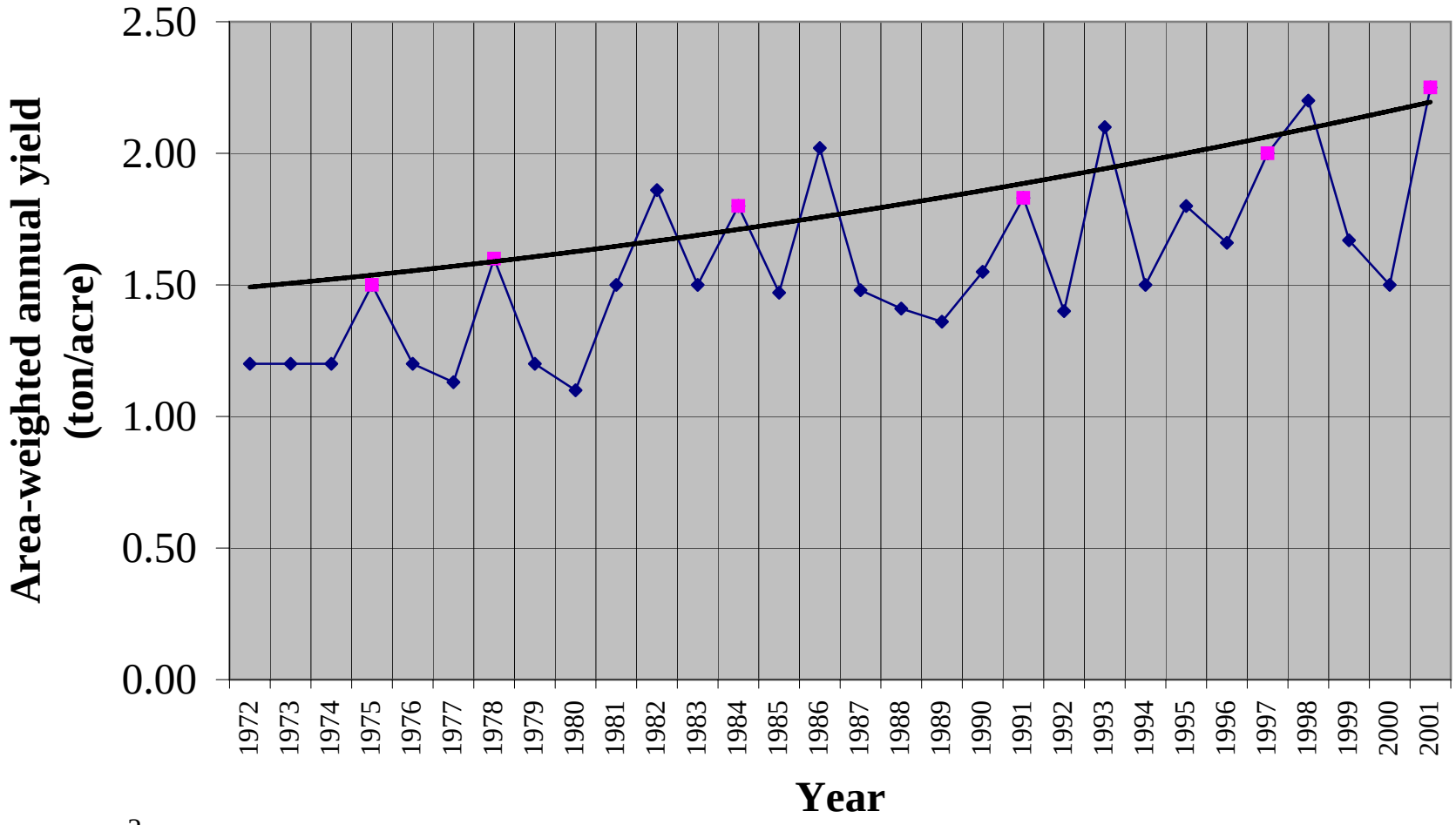
$y = -0.0009x^2 + 0.2052x + 17.716$

Figure 2.1.4.24.
Area-weighted annual oats yields and Y_{env} polynomial trend line and equation
Guernsey to State Line subbasin



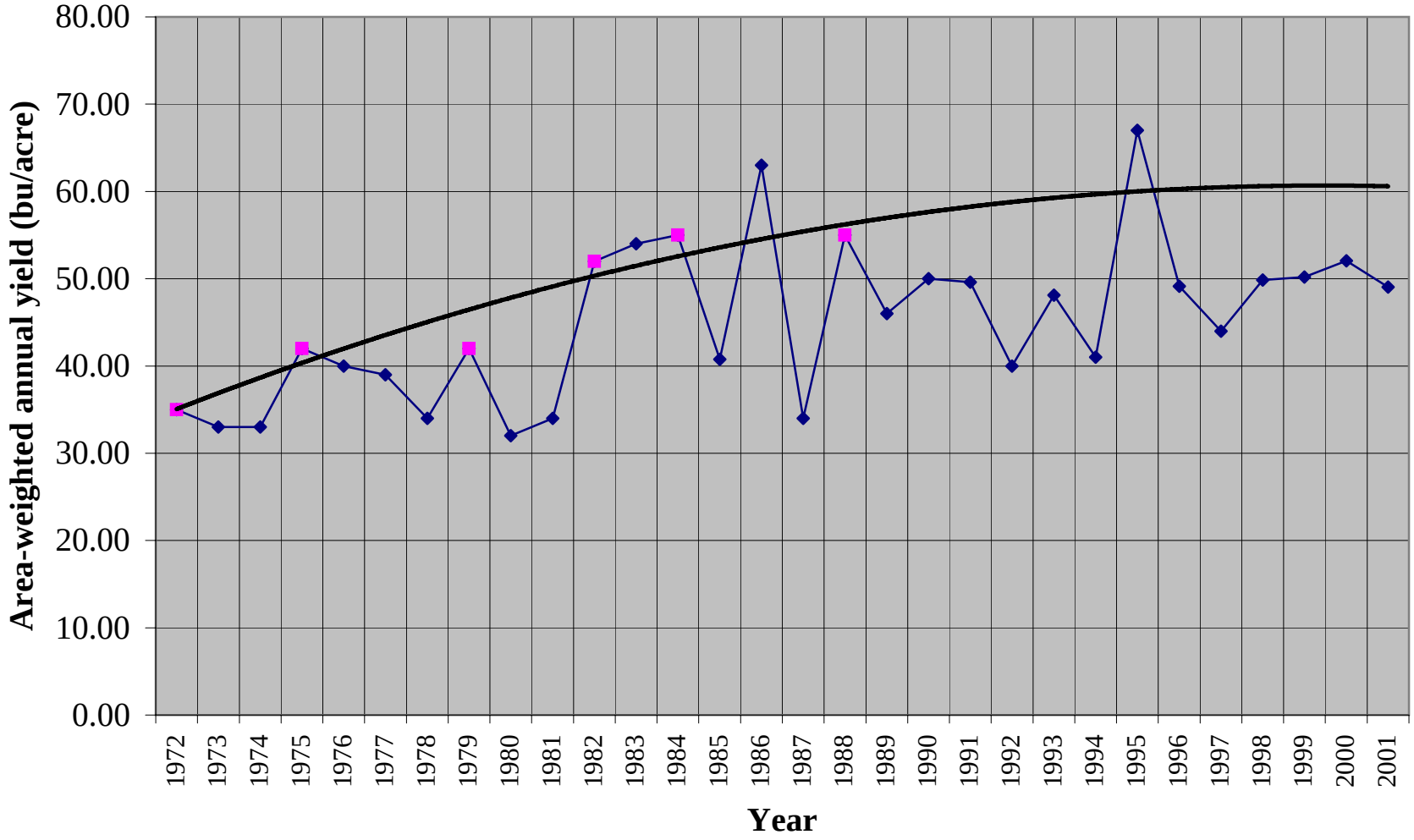
$y = 0.0202x^2 + 0.0033x + 63.86$

Figure 2.1.4.25.
Area-weighted annual other hay yields and Y_{env} polynomial trend line and equation
Guernsey to State Line subbasin



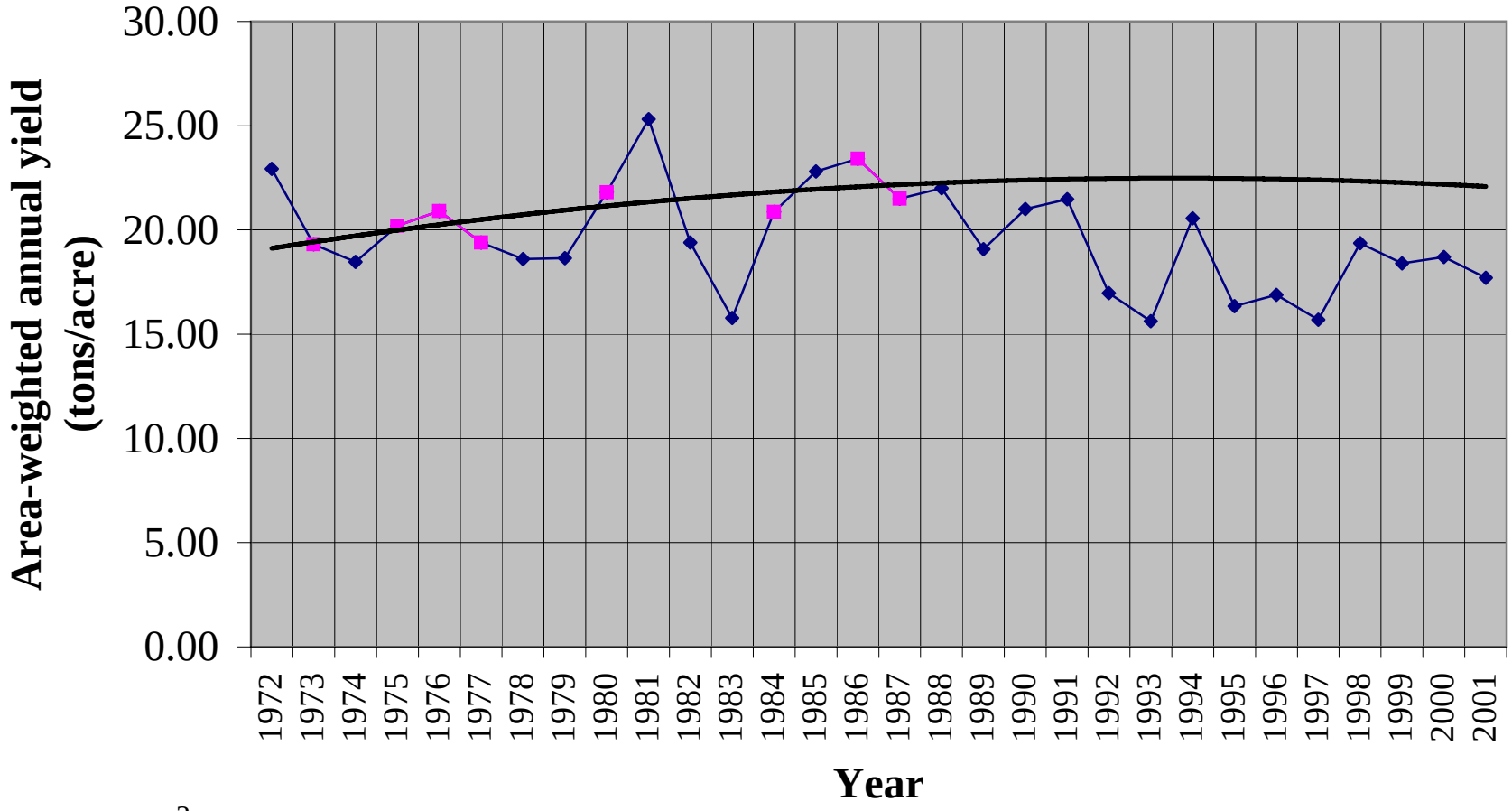
$y = 0.0004x^2 + 0.0133x + 1.4783$

Figure 2.1.4.26.
Area-weighted annual spring wheat yields and Y_{env} polynomial trend line and equation
Guernsey to State Line subbasin



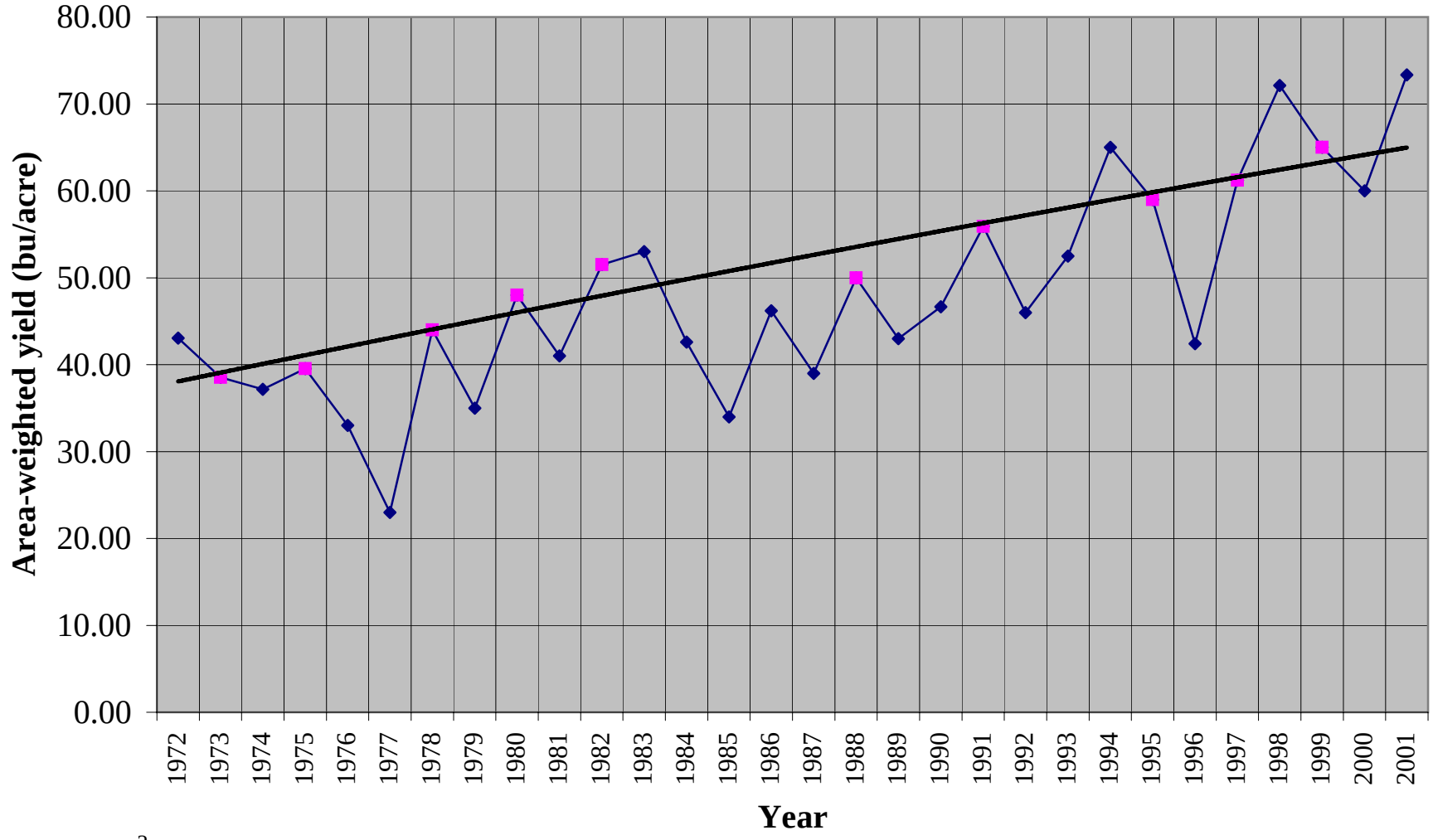
$y = -0.034x^2 + 1.9351x + 33.159$

Figure 2.1.4.27.
Area-weighted annual sugar beet yields and Yenv polynomial trend line and equation
Guernsey to State Line subbasin



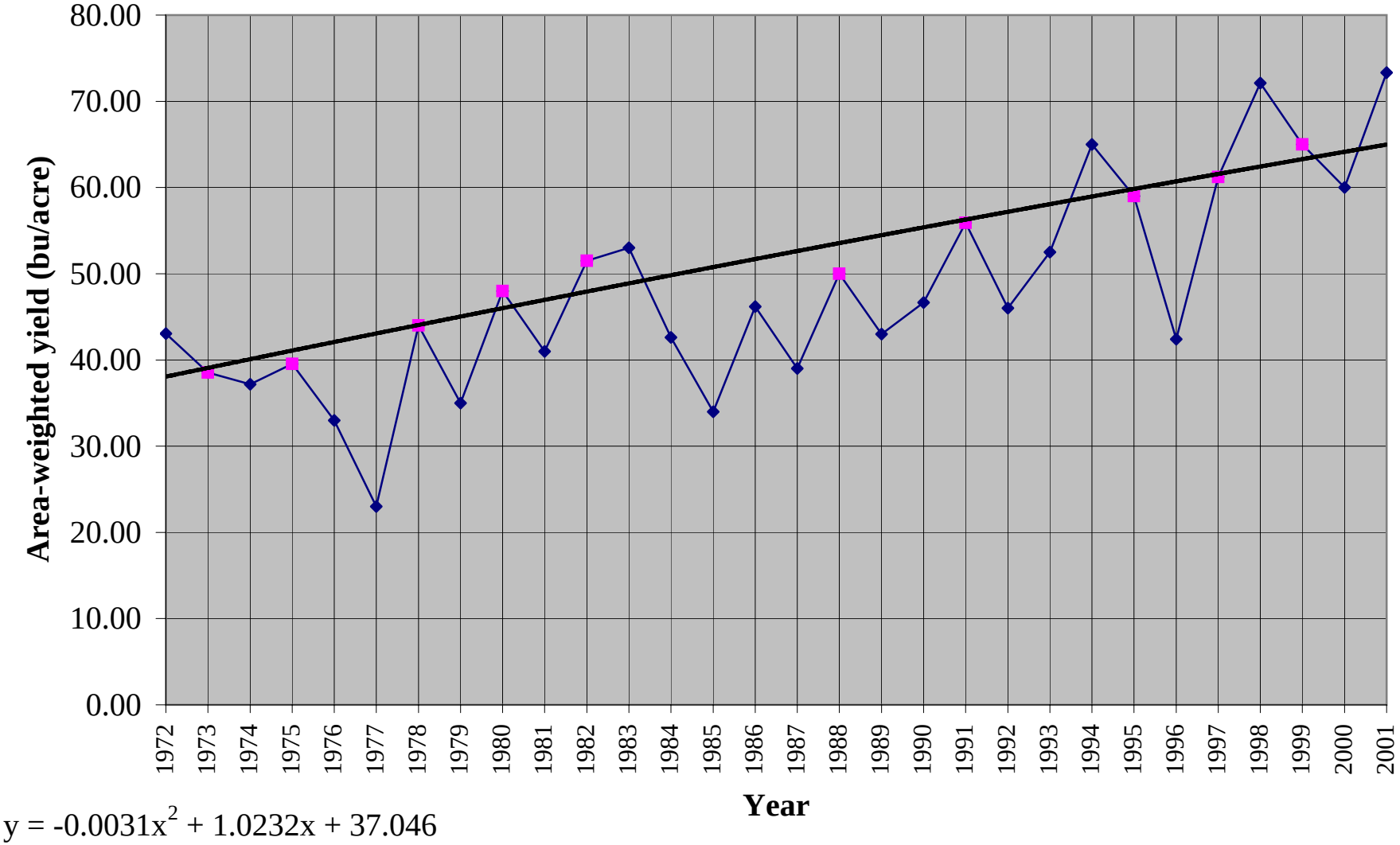
$y = -0.0072x^2 + 0.3264x + 18.802$

Figure 2.1.4.28.
Area-weighted winter wheat yields and Y_{env} polynomial trend line and equation
Guernsey to State Line subbasin



$y = -0.0031x^2 + 1.0232x + 37.046$

Figure 2.1.4.29
Area-weighted winter wheat yields and Y_{env} polynomial trend line and equation
Guernsey to State Line subbasin



$y = -0.0031x^2 + 1.0232x + 37.046$

Derivation of adjusted, yield-based crop evapotranspiration in the Guernsey to State Line subbasin during high stream flow years using $Y_{env(C)}$ values derived using equations from Table 2.1.4.64 and Figures 2.1.4.21 through 2.1.4.29 is summarized in Table 2.1.4.65.

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin

1986						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.13	5.92	8.15	5.16	--	--
Average yield, Yi (bu/acre) (2)			46.20			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			50.76			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.96**	**5.46**	**7.51**	**4.76**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.73	4.69	8.37	5.76	--	--
Average yield, Yi (bu/acre) (2)			63.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			53.59			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month) (5)	**1.73**	**4.69**	**8.37**	**5.76**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.84	5.21	8.46	6.68	2.28	1.00
Average yield, Yi (bu/acre) (2)			68.46			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			68.32			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.84**	**5.21**	**8.46**	**6.68**	**2.28**	**1.00**

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.84	5.21	8.46	6.68	2.28	1.00
Average yield, Yi (bu/acre) (2)			63.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.87			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.73**	**4.88**	**7.93**	**6.26**	**2.14**	**0.94**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.99	1.33	6.29	8.85	3.89	1.00
Average yield, Yi (cwt/acre) (2)			18.65			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.41			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.92**	**1.23**	**5.82**	**8.19**	**3.60**	**0.93**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.69	2.56	5.81	8.23	7.41	3.42
Average yield, Yi (tons/acre) (2)			23.41			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.96			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.69**	**2.56**	**5.81**	**8.23**	**7.41**	**3.42**

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.99	2.12	8.17	9.37	6.80	1.66
Average yield, Yi (bu/acre) (2)			119.70			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			116.76			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.99**	**2.12**	**8.17**	**9.37**	**6.80**	**1.66**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.76	5.48	6.30	7.85	3.76	1.99
Average yield, Yi (tons/acre) (2)			4.29			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.21			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.76**	**5.48**	**6.30**	**7.85**	**3.76**	**1.99**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.97	3.74	7.39	8.18	4.62	2.95
Average yield, Yi (tons/acre) (2)			2.02			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.74			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.97**	**3.74**	**7.39**	**8.18**	**4.62**	**2.95**

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.18	2.46	5.18	5.77	5.20	3.07
Average yield, Yi (2)			2.02			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.74			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.18**	**2.46**	**5.18**	**5.77**	**5.20**	**3.07**
1984						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.71	6.49	7.75	5.09	--	--
Average yield, Yi (bu/acre) (2)			42.60			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			48.88			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.52**	**5.76**	**6.88**	**4.52**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.39	5.15	7.95	5.68	--	--
Average yield, Yi (bu/acre) (2)			55.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			51.48			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.39**	**5.15**	**7.95**	**5.68**	**--**	**--**

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.48	5.72	8.04	6.59	2.31	1.06
Average yield, Yi (bu/acre) (2)			70.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.98			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.48**	**5.72**	**8.04**	**6.59**	**2.31**	**1.06**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.48	5.72	8.04	6.59	2.31	1.06
Average yield, Yi (bu/acre) (2)			55.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.81			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.25**	**4.84**	**6.80**	**5.58**	**1.95**	**0.90**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.79	1.46	5.98	8.73	3.94	1.06
Average yield, Yi (cwt/acre) (2)			22.20			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.05			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month) (5)	**0.79**	**1.46**	**5.98**	**8.73**	**3.94**	**1.06**

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.36	2.81	5.53	8.12	7.50	3.66
Average yield, Yi (tons/acre) (2)			20.87			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.68			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.32**	**2.72**	**5.35**	**7.86**	**7.26**	**3.54**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.79	2.32	7.76	9.25	6.88	1.77
Average yield, Yi (bu/acre) (2)			105.39			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			112.58			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.75**	**2.20**	**7.36**	**8.78**	**6.53**	**1.68**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.22	6.02	5.99	7.74	3.81	2.13
Average yield, Yi (tons/acre) (2)			4.03			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.12			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.17**	**5.89**	**5.87**	**7.58**	**3.73**	**2.09**

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.59	4.11	7.03	8.07	4.67	3.15
Average yield, Yi (tons/acre) (2)			1.80			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.70			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.59**	**4.11**	**7.03**	**8.07**	**4.67**	**3.15**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.95	2.70	4.93	5.70	5.27	3.28
Average yield, Yi (2)			1.80			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.70			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**0.95**	**2.70**	**4.93**	**5.70**	**5.27**	**3.28**
	1985					
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.52	6.88	8.10	5.39	--	--
Average yield, Yi (bu/acre) (2)			34.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			49.82			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.82**	**4.98**	**5.86**	**3.90**	**--**	**--**

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	2.05	5.46	8.31	6.01	--	--
Average yield, Yi (bu/acre) (2)			40.75			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			52.57			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.65**	**4.39**	**6.69**	**4.83**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.18	6.06	8.40	6.97	2.31	1.04
Average yield, Yi (bu/acre) (2)			66.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.65			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**2.13**	**5.93**	**8.22**	**6.82**	**2.26**	**1.02**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.18	6.06	8.40	6.97	2.31	1.04
Average yield, Yi (bu/acre) (2)			60.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.32			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.97**	**5.49**	**7.61**	**6.31**	**2.09**	**0.94**

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin (cont)

Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.17	1.55	6.24	9.24	3.94	1.04
Average yield, Yi (cwt/acre) (2)			19.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.23			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**1.11**	**1.47**	**5.91**	**8.75**	**3.73**	**0.99**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.00	2.98	5.77	8.59	7.50	3.57
Average yield, Yi (tons/acre) (2)			22.80			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.83			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**2.00**	**2.98**	**5.77**	**8.59**	**7.50**	**3.57**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.17	2.46	8.11	9.79	6.88	1.73
Average yield, Yi (bu/acre) (2)			100.00			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			114.71			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.05**	**2.21**	**7.28**	**8.79**	**6.17**	**1.55**

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.27	6.38	6.26	8.19	3.81	2.08
Average yield, Yi (tons/acre) (2)			3.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.17			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.47**	**4.82**	**4.73**	**6.19**	**2.88**	**1.57**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.33	4.35	7.34	8.54	4.67	3.08
Average yield, Yi (tons/acre) (2)			1.47			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.72			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**2.01**	**3.75**	**6.32**	**7.36**	**4.02**	**2.65**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.40	2.86	5.15	6.03	5.27	3.20
Average yield, Yi (2)			1.47			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.72			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.21**	**2.46**	**4.44**	**5.20**	**4.54**	**2.76**

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin (cont)

1973						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.39	6.93	8.23	5.38	--	--
Average yield, Yi (bu/acre) (2)			38.54			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			38.07			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month) (5)	**2.39**	**6.93**	**8.23**	**5.38**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.95	5.49	8.45	6.00	--	--
Average yield, Yi (bu/acre) (2)			33.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			35.06			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.85**	**5.21**	**8.02**	**5.69**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.07	6.10	8.54	6.96	2.45	1.10
Average yield, Yi (bu/acre) (2)			56.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.50			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.96**	**5.79**	**8.10**	**6.60**	**2.32**	**1.04**

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.07	6.10	8.54	6.96	2.45	1.10
Average yield, Yi (bu/acre) (2)			53.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.88			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.76**	**5.20**	**7.28**	**5.93**	**2.09**	**0.94**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.11	1.56	6.35	9.22	4.17	1.10
Average yield, Yi (cwt/acre) (2)			18.20			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			17.92			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month) (5)	**1.11**	**1.56**	**6.35**	**9.22**	**4.17**	**1.10**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.90	3.00	5.87	8.57	7.95	3.78
Average yield, Yi (tons/acre) (2)			19.31			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.12			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.90**	**3.00**	**5.87**	**8.57**	**7.95**	**3.78**

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.11	2.48	8.25	9.76	7.30	1.83
Average yield, Yi (bu/acre) (2)			89.22			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			83.67			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.11**	**2.48**	**8.25**	**9.76**	**7.30**	**1.83**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.11	6.42	6.37	8.17	4.03	2.20
Average yield, Yi (tons/acre) (2)			3.50			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.51			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**3.10**	**6.40**	**6.35**	**8.15**	**4.02**	**2.19**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.22	4.38	7.47	8.51	4.95	3.26
Average yield, Yi (tons/acre) (2)			1.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.49			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.81**	**3.57**	**6.09**	**6.93**	**4.03**	**2.66**

Table 2.1.4.65 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Guernsey to State Line subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.33	2.88	5.23	6.01	5.58	3.39
Average yield, Yi (2)			1.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.49			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.08**	**2.35**	**4.26**	**4.90**	**4.55**	**2.76**

Notes:

(1) See Table 2.1.4.42.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

Derivation of adjusted, yield-based crop evapotranspiration in the Guernsey to State Line subbasin during low stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.64 and Figures 2.1.4.21 through 2.1.4.29 is summarized in Table 2.1.4.66.

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin

1972						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.37	6.52	8.41	5.20	--	--
Average yield, Yi (bu/acre) (2)			43.06			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			37.05			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month) (5)	**2.37**	**6.52**	**8.41**	**5.20**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.93	5.17	8.63	5.81	--	--
Average yield, Yi (bu/acre) (2)			35.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			33.16			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month) (5)	**1.93**	**5.17**	**8.63**	**5.81**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.05	5.73	8.72	6.73	2.26	1.24
Average yield, Yi (bu/acre) (2)			56.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.81			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.96**	**5.49**	**8.36**	**6.45**	**2.17**	**1.19**

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.05	5.73	8.72	6.73	2.26	1.24
Average yield, Yi (bu/acre) (2)			64.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.86			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**2.05**	**5.73**	**8.72**	**6.73**	**2.26**	**1.24**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.10	1.47	6.48	8.92	3.85	1.24
Average yield, Yi (cwt/acre) (2)			19.70			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			17.72			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month) (5)	**1.10**	**1.47**	**6.48**	**8.92**	**3.85**	**1.24**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.88	2.82	5.99	8.29	7.34	4.27
Average yield, Yi (tons/acre) (2)			22.93			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.80			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.88**	**2.82**	**5.99**	**8.29**	**7.34**	**4.27**

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.10	2.33	8.42	9.45	6.73	2.07
Average yield, Yi (bu/acre) (2)			94.00			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			80.54			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.10**	**2.33**	**8.42**	**9.45**	**6.73**	**2.07**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.07	6.04	6.50	7.91	3.72	2.48
Average yield, Yi (tons/acre) (2)			3.30			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.44			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.95**	**5.81**	**6.25**	**7.60**	**3.58**	**2.38**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.19	4.12	7.62	8.24	4.57	3.68
Average yield, Yi (tons/acre) (2)			1.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.48			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.80**	**3.38**	**6.25**	**6.76**	**3.75**	**3.02**

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.31	2.71	5.34	5.82	5.15	3.83
Average yield, Yi (2)			1.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.48			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.07**	**2.22**	**4.38**	**4.77**	**4.22**	**3.14**
1989						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.46	6.37	8.50	5.58	--	--
Average yield, Yi (bu/acre) (2)			43.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			53.54			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**2.04**	**5.28**	**7.04**	**4.62**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	2.01	5.05	8.72	6.22	--	--
Average yield, Yi (bu/acre) (2)			46.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			56.23			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.69**	**4.25**	**7.34**	**5.24**	**--**	**--**

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.13	5.61	8.82	7.22	2.26	1.11
Average yield, Yi (bu/acre) (2)			59.82			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			70.30			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.85**	**4.88**	**7.68**	**6.28**	**1.97**	**0.97**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.13	5.61	8.82	7.22	2.26	1.11
Average yield, Yi (bu/acre) (2)			47.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			69.75			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.53**	**4.02**	**6.32**	**5.17**	**1.62**	**0.80**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.14	1.44	6.55	9.56	3.85	1.11
Average yield, Yi (cwt/acre) (2)			19.18			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.94			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**1.06**	**1.33**	**6.07**	**8.86**	**3.57**	**1.03**

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.96	2.76	6.06	8.89	7.34	3.82
Average yield, Yi (tons/acre) (2)			19.07			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			22.27			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.72**	**2.42**	**5.30**	**7.78**	**6.42**	**3.34**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.14	2.28	8.51	10.12	6.73	1.85
Average yield, Yi (bu/acre) (2)			96.91			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			122.43			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.95**	**1.90**	**7.09**	**8.43**	**5.61**	**1.54**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.20	5.91	6.57	8.48	3.72	2.22
Average yield, Yi (tons/acre) (2)			4.14			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.31			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**3.08**	**5.69**	**6.32**	**8.16**	**3.58**	**2.14**

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.28	4.03	7.71	8.83	4.57	3.29
Average yield, Yi (tons/acre) (2)			1.36			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.82			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.73**	**3.06**	**5.85**	**6.70**	**3.47**	**2.50**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.37	2.65	5.40	6.24	5.15	3.43
Average yield, Yi (2)			1.36			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.82			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.04**	**2.01**	**4.10**	**4.74**	**3.91**	**2.60**
1990						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.21	5.73	8.35	4.93	--	--
Average yield, Yi (bu/acre) (2)			46.67			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			54.46			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.94**	**5.02**	**7.31**	**4.32**	**--**	**--**

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.80	4.54	8.57	5.50	--	--
Average yield, Yi (bu/acre) (2)			50.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			56.97			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.61**	**4.06**	**7.66**	**4.91**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.91	5.04	8.66	6.38	2.25	1.28
Average yield, Yi (bu/acre) (2)			62.50			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			70.95			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.71**	**4.52**	**7.76**	**5.72**	**2.02**	**1.15**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.91	5.04	8.66	6.38	2.25	1.28
Average yield, Yi (bu/acre) (2)			55.50			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			70.46			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.56**	**4.11**	**7.06**	**5.20**	**1.83**	**1.04**

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin (cont)

Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.03	1.29	6.44	8.45	3.84	1.28
Average yield, Yi (cwt/acre) (2)			21.03			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			21.12			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**1.03**	**1.29**	**6.42**	**8.42**	**3.83**	**1.28**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.76	2.48	5.95	7.85	7.32	4.40
Average yield, Yi (tons/acre) (2)			21.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			22.34			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.67**	**2.35**	**5.64**	**7.44**	**6.94**	**4.17**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.03	2.05	8.36	8.95	6.71	2.14
Average yield, Yi (bu/acre) (2)			127.99			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			124.15			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.03**	**2.05**	**8.36**	**8.95**	**6.71**	**2.14**

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.87	5.31	6.45	7.49	3.71	2.57
Average yield, Yi (tons/acre) (2)			4.25			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.35			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.81**	**5.19**	**6.31**	**7.33**	**3.63**	**2.51**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.05	3.62	7.57	7.80	4.56	3.80
Average yield, Yi (tons/acre) (2)			1.55			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.85			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.73**	**3.06**	**6.40**	**6.60**	**3.86**	**3.21**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.23	2.38	5.31	5.51	5.13	3.95
Average yield, Yi (2)			1.55			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.85			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.04**	**2.01**	**4.49**	**4.66**	**4.34**	**3.34**

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin (cont)

1992						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.67	5.84	7.71	4.64	--	--
Average yield, Yi (bu/acre) (2)			46.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			56.27			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**2.25**	**4.91**	**6.49**	**3.90**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	2.17	4.63	7.91	5.17	--	--
Average yield, Yi (bu/acre) (2)			40.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.26			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.58**	**3.37**	**5.75**	**3.76**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.31	5.14	7.99	6.00	2.05	1.26
Average yield, Yi (bu/acre) (2)			70.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			72.26			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**2.25**	**5.00**	**7.77**	**5.84**	**1.99**	**1.23**

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.31	5.14	7.99	6.00	2.05	1.26
Average yield, Yi (bu/acre) (2)			72.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			72.01			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**2.31**	**5.14**	**7.99**	**6.00**	**2.05**	**1.26**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.24	1.32	5.94	7.95	3.49	1.26
Average yield, Yi (cwt/acre) (2)			18.83			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			21.46			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**1.11**	**1.18**	**5.31**	**7.10**	**3.12**	**1.13**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.12	2.52	5.49	7.39	6.64	4.33
Average yield, Yi (tons/acre) (2)			16.97			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			22.45			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.67**	**1.99**	**4.32**	**5.82**	**5.23**	**3.41**

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.24	2.09	7.72	8.42	6.09	2.10
Average yield, Yi (bu/acre) (2)			101.81			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			127.36			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.04**	**1.75**	**6.48**	**7.07**	**5.11**	**1.76**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.46	5.41	5.96	7.05	3.37	2.52
Average yield, Yi (tons/acre) (2)			3.81			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.40			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**3.02**	**4.72**	**5.20**	**6.15**	**2.94**	**2.20**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.47	3.69	6.99	7.34	4.14	3.73
Average yield, Yi (tons/acre) (2)			1.40			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.90			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.85**	**2.77**	**5.24**	**5.50**	**3.10**	**2.80**

Table 2.1.4.66 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Guernsey to State Line subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.48	2.42	4.90	5.19	4.66	3.88
Average yield, Yi (2)			1.40			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.90			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.11**	**1.81**	**3.67**	**3.89**	**3.49**	**2.91**

Notes:

(1) See Table 2.1.4.42.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

Derivation of adjusted, yield-based evapotranspiration in the Guernsey to State Line subbasin during normal or average stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.64 and Figures 2.1.4.21 through 2.1.4.29 is summarized in Table 2.1.4.67.

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin

1974						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.53	7.06	9.13	6.01	--	--
Average yield, Yi (bu/acre) (2)			37.17			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			39.08			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**2.42**	**6.76**	**8.74**	**5.75**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	2.06	5.60	9.37	6.71	--	--
Average yield, Yi (bu/acre) (2)			33.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			36.89			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.87**	**5.09**	**8.51**	**6.09**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.19	6.21	9.47	7.78	2.30	1.23
Average yield, Yi (bu/acre) (2)			60.53			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			60.19			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**2.19**	**6.21**	**9.47**	**7.78**	**2.30**	**1.23**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.19	6.21	9.47	7.78	2.30	1.23
Average yield, Yi (bu/acre) (2)			48.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.95			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.72**	**4.86**	**7.42**	**6.09**	**1.80**	**0.96**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.17	1.59	7.04	10.30	3.91	1.23
Average yield, Yi (cwt/acre) (2)			19.48			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.12			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month) (5)	**1.17**	**1.59**	**7.04**	**10.30**	**3.91**	**1.23**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.02	3.05	6.51	9.58	7.45	4.21
Average yield, Yi (tons/acre) (2)			18.46			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.43			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.93**	**2.92**	**6.23**	**9.16**	**7.13**	**4.03**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.17	2.52	9.15	10.91	6.83	2.04
Average yield, Yi (bu/acre) (2)			79.50			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			86.70			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.09**	**2.35**	**8.54**	**10.19**	**6.38**	**1.90**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.29	6.54	7.06	9.14	3.78	2.45
Average yield, Yi (tons/acre) (2)			3.65			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.58			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**3.29**	**6.54**	**7.06**	**9.14**	**3.78**	**2.45**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.35	4.46	8.28	9.52	4.64	3.64
Average yield, Yi (tons/acre) (2)			1.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.51			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.89**	**3.59**	**6.66**	**7.66**	**3.73**	**2.93**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.41	2.93	5.80	6.72	5.23	3.78
Average yield, Yi (2)			1.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.51			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.13**	**2.36**	**4.67**	**5.41**	**4.21**	**3.04**
1983						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	1.80	5.24	7.10	5.11	--	--
Average yield, Yi (bu/acre) (2)			53.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			47.93			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month) (5)	**1.80**	**5.24**	**7.10**	**5.11**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.47	4.15	7.28	5.71	--	--
Average yield, Yi (bu/acre) (2)			54.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			50.33			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month) (5)	**1.47**	**4.15**	**7.28**	**5.71**	**--**	**--**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.56	4.61	7.36	6.62	2.44	1.26
Average yield, Yi (bu/acre) (2)			69.58			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.32			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.56**	**4.61**	**7.36**	**6.62**	**2.44**	**1.26**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.56	4.61	7.36	6.62	2.44	1.26
Average yield, Yi (bu/acre) (2)			60.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.34			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.43**	**4.23**	**6.75**	**6.07**	**2.24**	**1.16**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.84	1.18	5.47	8.77	4.15	1.26
Average yield, Yi (cwt/acre) (2)			18.80			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.86			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.80**	**1.13**	**5.22**	**8.36**	**3.96**	**1.20**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.44	2.27	5.06	8.15	7.92	4.33
Average yield, Yi (tons/acre) (2)			15.78			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.52			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.11**	**1.74**	**3.89**	**6.26**	**6.08**	**3.33**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.84	1.87	7.11	9.28	7.26	2.10
Average yield, Yi (bu/acre) (2)			110.55			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			110.36			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.84**	**1.87**	**7.11**	**9.28**	**7.26**	**2.10**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.34	4.86	5.49	7.77	4.02	2.52
Average yield, Yi (tons/acre) (2)			4.70			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.08			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.34**	**4.86**	**5.49**	**7.77**	**4.02**	**2.52**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.67	3.31	6.44	8.10	4.93	3.73
Average yield, Yi (tons/acre) (2)			1.50			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.67			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.51**	**2.99**	**5.82**	**7.31**	**4.45**	**3.37**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.00	2.18	4.51	5.72	5.56	3.88
Average yield, Yi (2)			1.50			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.67			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.90**	**1.97**	**4.07**	**5.17**	**5.02**	**3.50**
1988						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.48	6.53	8.95	5.34	--	--
Average yield, Yi (bu/acre) (2)			50.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			52.62			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**2.37**	**6.25**	**8.56**	**5.11**	**--**	**--**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	2.02	5.17	9.18	5.96	--	--
Average yield, Yi (bu/acre) (2)			55.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			55.42			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**2.01**	**5.14**	**9.12**	**5.92**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.15	5.74	9.28	6.91	2.44	1.17
Average yield, Yi (bu/acre) (2)			45.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			69.64			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.49**	**3.97**	**6.42**	**4.78**	**1.69**	**0.81**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.15	5.74	9.28	6.91	2.44	1.17
Average yield, Yi (bu/acre) (2)			44.44			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			69.08			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.48**	**3.96**	**6.40**	**4.77**	**1.68**	**0.81**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.15	1.47	6.90	9.16	4.16	1.17
Average yield, Yi (cwt/acre) (2)			21.30			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.77			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month) (5)	**1.15**	**1.47**	**6.90**	**9.16**	**4.16**	**1.17**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.98	2.82	6.38	8.51	7.93	4.02
Average yield, Yi (tons/acre) (2)			22.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			22.18			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.97**	**2.80**	**6.33**	**8.45**	**7.87**	**3.99**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.15	2.33	8.96	9.70	7.27	1.95
Average yield, Yi (bu/acre) (2)			130.78			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			120.62			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.15**	**2.33**	**8.96**	**9.70**	**7.27**	**1.95**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.22	6.05	6.92	8.12	4.02	2.34
Average yield, Yi (tons/acre) (2)			4.54			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.28			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**3.22**	**6.05**	**6.92**	**8.12**	**4.02**	**2.34**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.30	4.13	8.11	8.46	4.94	3.47
Average yield, Yi (tons/acre) (2)			1.41			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.79			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.83**	**3.29**	**6.47**	**6.75**	**3.94**	**2.77**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.38	2.71	5.69	5.98	5.57	3.61
Average yield, Yi (2)			1.41			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.79			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.10**	**2.16**	**4.54**	**4.77**	**4.44**	**2.88**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

1982						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.28	5.62	6.75	5.11	--	--
Average yield, Yi (bu/acre) (2)			51.50			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			46.97			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month) (5)	**2.28**	**5.62**	**6.75**	**5.11**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.86	4.45	6.93	5.70	--	--
Average yield, Yi (bu/acre) (2)			52.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			49.11			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month) (5)	**1.86**	**4.45**	**6.93**	**5.70**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.97	4.94	7.00	6.61	2.19	1.03
Average yield, Yi (bu/acre) (2)			57.06			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.64			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.75**	**4.38**	**6.20**	**5.86**	**1.94**	**0.91**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.97	4.94	7.00	6.61	2.19	1.03
Average yield, Yi (bu/acre) (2)			79.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.91			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.97**	**4.94**	**7.00**	**6.61**	**2.19**	**1.03**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.06	1.27	5.21	8.75	3.73	1.03
Average yield, Yi (cwt/acre) (2)			18.07			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.68			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.98**	**1.18**	**4.84**	**8.13**	**3.46**	**0.96**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.81	2.43	4.81	8.14	7.12	3.53
Average yield, Yi (tons/acre) (2)			19.40			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.35			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.67**	**2.24**	**4.43**	**7.49**	**6.55**	**3.25**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.06	2.01	6.76	9.27	6.53	1.71
Average yield, Yi (bu/acre) (2)			111.00			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			108.06			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.06**	**2.01**	**6.76**	**9.27**	**6.53**	**1.71**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.96	5.21	5.22	7.76	3.61	2.06
Average yield, Yi (tons/acre) (2)			3.73			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.03			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.75**	**4.84**	**4.85**	**7.21**	**3.35**	**1.91**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.11	3.55	6.12	8.09	4.43	3.05
Average yield, Yi (tons/acre) (2)			1.86			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.65			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**2.11**	**3.55**	**6.12**	**8.09**	**4.43**	**3.05**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.27	2.33	4.29	5.71	4.99	3.17
Average yield, Yi (2)			1.86			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.65			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.27**	**2.33**	**4.29**	**5.71**	**4.99**	**3.17**
1987						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.79	6.29	8.44	5.43	--	--
Average yield, Yi (bu/acre) (2)			39.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			51.70			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**2.19**	**4.95**	**6.64**	**4.27**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	2.27	4.99	8.66	6.06	--	--
Average yield, Yi (bu/acre) (2)			34.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			54.54			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.53**	**3.36**	**5.82**	**4.08**	**--**	**--**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.41	5.54	8.76	7.03	2.11	1.23
Average yield, Yi (bu/acre) (2)			47.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			68.98			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.74**	**4.00**	**6.33**	**5.08**	**1.53**	**0.89**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.41	5.54	8.76	7.03	2.11	1.23
Average yield, Yi (bu/acre) (2)			80.21			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			68.45			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**2.41**	**5.54**	**8.76**	**7.03**	**2.11**	**1.23**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.29	1.42	6.51	9.31	3.58	1.23
Average yield, Yi (cwt/acre) (2)			19.20			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.59			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**1.21**	**1.34**	**6.13**	**8.76**	**3.37**	**1.16**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.22	2.72	6.02	8.66	6.83	4.21
Average yield, Yi (tons/acre) (2)			21.50			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			22.08			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**2.17**	**2.66**	**5.88**	**8.46**	**6.67**	**4.11**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.29	2.25	8.46	9.86	6.27	2.04
Average yield, Yi (bu/acre) (2)			117.75			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			118.74			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.28**	**2.23**	**8.40**	**9.79**	**6.23**	**2.03**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.62	5.83	6.53	8.26	3.47	2.45
Average yield, Yi (tons/acre) (2)			4.00			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.24			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**3.42**	**5.52**	**6.18**	**7.81**	**3.28**	**2.32**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.58	3.98	7.66	8.60	4.25	3.64
Average yield, Yi (tons/acre) (2)			1.48			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.77			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**2.18**	**3.36**	**6.46**	**7.26**	**3.59**	**3.07**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.55	2.61	5.37	6.08	4.79	3.78
Average yield, Yi (2)			1.48			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.77			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.31**	**2.20**	**4.53**	**5.13**	**4.04**	**3.19**
	1979					
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.27	5.36	7.64	5.15	--	--
Average yield, Yi (bu/acre) (2)			35.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			44.06			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.86**	**4.40**	**6.27**	**4.23**	**--**	**--**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.85	4.25	7.84	5.75	--	--
Average yield, Yi (bu/acre) (2)			42.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			45.04			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.74**	**4.00**	**7.38**	**5.41**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.97	4.72	7.92	6.67	2.12	1.29
Average yield, Yi (bu/acre) (2)			50.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.62			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.60**	**3.84**	**6.45**	**5.43**	**1.73**	**1.05**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.97	4.72	7.92	6.67	2.12	1.29
Average yield, Yi (bu/acre) (2)			56.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.87			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.74**	**4.16**	**6.98**	**5.88**	**1.87**	**1.14**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.05	1.21	5.89	8.84	3.61	1.29
Average yield, Yi (cwt/acre) (2)			19.11			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.11			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**1.05**	**1.21**	**5.89**	**8.84**	**3.61**	**1.29**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.81	2.32	5.44	8.22	6.89	4.42
Average yield, Yi (tons/acre) (2)			18.64			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.73			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.65**	**2.12**	**4.96**	**7.50**	**6.29**	**4.03**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.05	1.92	7.65	9.36	6.32	2.14
Average yield, Yi (bu/acre) (2)			89.83			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			100.67			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.96**	**1.75**	**6.99**	**8.55**	**5.78**	**1.96**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.95	4.97	5.90	7.84	3.49	2.58
Average yield, Yi (tons/acre) (2)			3.80			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.88			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.89**	**4.87**	**5.78**	**7.69**	**3.42**	**2.53**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.11	3.39	6.93	8.16	4.29	3.81
Average yield, Yi (tons/acre) (2)			1.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.59			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.62**	**2.60**	**5.31**	**6.25**	**3.29**	**2.92**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.26	2.23	4.85	5.77	4.83	3.97
Average yield, Yi (2)			1.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.59			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.97**	**1.71**	**3.72**	**4.42**	**3.70**	**3.04**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

1976						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.31	6.78	8.26	5.52	--	--
Average yield, Yi (bu/acre) (2)			33.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			41.09			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.91**	**5.62**	**6.85**	**4.57**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.88	5.38	8.47	6.16	--	--
Average yield, Yi (bu/acre) (2)			40.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			40.36			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.87**	**5.34**	**8.40**	**6.11**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.00	5.97	8.57	7.14	2.34	1.28
Average yield, Yi (bu/acre) (2)			56.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.57			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.84**	**5.50**	**7.90**	**6.58**	**2.16**	**1.18**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.00	5.97	8.57	7.14	2.34	1.28
Average yield, Yi (bu/acre) (2)			54.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.20			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.72**	**5.15**	**7.39**	**6.15**	**2.02**	**1.10**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.07	1.53	6.37	9.46	3.99	1.28
Average yield, Yi (cwt/acre) (2)			17.80			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.52			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**1.03**	**1.48**	**6.15**	**9.14**	**3.86**	**1.24**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.84	2.93	5.89	8.80	7.60	4.39
Average yield, Yi (tons/acre) (2)			20.90			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.99			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.84**	**2.93**	**5.89**	**8.80**	**7.60**	**4.39**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.07	2.43	8.27	10.02	6.97	2.13
Average yield, Yi (bu/acre) (2)			93.08			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			92.54			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.07**	**2.43**	**8.27**	**10.02**	**6.97**	**2.13**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.00	6.29	6.38	8.39	3.86	2.56
Average yield, Yi (tons/acre) (2)			3.70			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.70			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**3.00**	**6.29**	**6.38**	**8.39**	**3.86**	**2.56**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.14	4.29	7.49	8.74	4.73	3.78
Average yield, Yi (tons/acre) (2)			1.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.54			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.69**	**3.39**	**5.92**	**6.90**	**3.74**	**2.99**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.28	2.82	5.25	6.18	5.33	3.94
Average yield, Yi (2)			1.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.54			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.01**	**2.23**	**4.15**	**4.88**	**4.21**	**3.11**
1980						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.25	5.48	7.80	5.35	--	--
Average yield, Yi (bu/acre) (2)			48.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			45.03			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month) (5)	**2.25**	**5.48**	**7.80**	**5.35**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.83	4.35	8.00	5.97	--	--
Average yield, Yi (bu/acre) (2)			32.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			46.46			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.33**	**3.17**	**5.83**	**4.35**	**--**	**--**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.95	4.83	8.09	6.92	2.24	1.20
Average yield, Yi (bu/acre) (2)			53.47			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.29			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.66**	**4.12**	**6.91**	**5.91**	**1.91**	**1.02**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.95	4.83	8.09	6.92	2.24	1.20
Average yield, Yi (bu/acre) (2)			59.70			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.18			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.81**	**4.48**	**7.50**	**6.41**	**2.08**	**1.11**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.04	1.24	6.01	9.17	3.81	1.20
Average yield, Yi (cwt/acre) (2)			21.70			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.30			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month) (5)	**1.04**	**1.24**	**6.01**	**9.17**	**3.81**	**1.20**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.79	2.37	5.56	8.53	7.26	4.13
Average yield, Yi (tons/acre) (2)			21.80			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.95			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.79**	**2.37**	**5.56**	**8.53**	**7.26**	**4.13**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.04	1.96	7.81	9.71	6.66	2.00
Average yield, Yi (bu/acre) (2)			102.90			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			103.21			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.04**	**1.96**	**7.79**	**9.69**	**6.64**	**2.00**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.92	5.08	6.03	8.13	3.68	2.40
Average yield, Yi (tons/acre) (2)			3.60			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.93			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.69**	**4.67**	**5.55**	**7.48**	**3.39**	**2.21**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.09	3.47	7.07	8.47	4.52	3.56
Average yield, Yi (tons/acre) (2)			1.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.61			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.46**	**2.42**	**4.94**	**5.91**	**3.16**	**2.49**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.25	2.28	4.96	5.98	5.10	3.71
Average yield, Yi (2)			1.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.61			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.87**	**1.59**	**3.46**	**4.18**	**3.56**	**2.59**
	1977					
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.56	6.77	8.77	5.33	--	--
Average yield, Yi (bu/acre) (2)			23.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			42.08			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**1.55**	**4.10**	**5.31**	**3.23**	**--**	**--**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	2.09	5.37	9.00	5.95	--	--
Average yield, Yi (bu/acre) (2)			39.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			41.98			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.96**	**5.04**	**8.44**	**5.58**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.21	5.96	9.10	6.90	2.00	1.28
Average yield, Yi (bu/acre) (2)			44.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.25			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.65**	**4.44**	**6.78**	**5.14**	**1.49**	**0.95**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.21	5.96	9.10	6.90	2.00	1.28
Average yield, Yi (bu/acre) (2)			44.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.38			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.60**	**4.32**	**6.60**	**5.00**	**1.45**	**0.93**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.19	1.53	6.77	9.14	3.40	1.28
Average yield, Yi (cwt/acre) (2)			17.90			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.72			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**1.14**	**1.47**	**6.51**	**8.79**	**3.27**	**1.23**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.04	2.93	6.26	8.50	6.48	4.39
Average yield, Yi (tons/acre) (2)			19.40			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.25			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.97**	**2.82**	**6.03**	**8.19**	**6.24**	**4.23**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.19	2.42	8.79	9.69	5.94	2.13
Average yield, Yi (bu/acre) (2)			94.00			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			95.33			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.18**	**2.39**	**8.69**	**9.58**	**5.87**	**2.11**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.32	6.28	6.78	8.11	3.29	2.56
Average yield, Yi (tons/acre) (2)			3.50			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.76			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**3.10**	**5.87**	**6.33**	**7.58**	**3.07**	**2.39**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.37	4.28	7.96	8.45	4.03	3.78
Average yield, Yi (tons/acre) (2)			1.13			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.55			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.76**	**3.18**	**5.91**	**6.27**	**2.99**	**2.80**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.42	2.81	5.58	5.97	4.55	3.94
Average yield, Yi (2)			1.13			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.55			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.05**	**2.08**	**4.14**	**4.43**	**3.38**	**2.92**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

1978						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.24	5.39	7.89	4.96	--	--
Average yield, Yi (bu/acre) (2)			44.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			43.07			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month) (5)	**2.24**	**5.39**	**7.89**	**4.96**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.82	4.28	8.09	5.54	--	--
Average yield, Yi (bu/acre) (2)			34.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			43.55			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.47**	**3.46**	**6.55**	**4.48**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.93	4.75	8.18	6.42	2.13	1.23
Average yield, Yi (bu/acre) (2)			62.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.94			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.90**	**4.69**	**8.07**	**6.34**	**2.10**	**1.21**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.93	4.75	8.18	6.42	2.13	1.23
Average yield, Yi (bu/acre) (2)			76.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.61			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.93**	**4.75**	**8.18**	**6.42**	**2.13**	**1.23**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.04	1.22	6.08	8.51	3.62	1.23
Average yield, Yi (cwt/acre) (2)			16.29			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.91			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.91**	**1.07**	**5.35**	**7.48**	**3.18**	**1.08**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.78	2.33	5.63	7.91	6.91	4.21
Average yield, Yi (tons/acre) (2)			18.61			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.50			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.64**	**2.14**	**5.18**	**7.28**	**6.36**	**3.87**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation:					
	y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.)					
	x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.04	1.93	7.90	9.01	6.34	2.04
Average yield, Yi (bu/acre) (2)			89.50			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			98.04			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.97**	**1.80**	**7.35**	**8.38**	**5.90**	**1.90**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.)					
	x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.90	5.00	6.10	7.54	3.50	2.45
Average yield, Yi (tons/acre) (2)			3.94			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.82			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.90**	**5.00**	**6.10**	**7.54**	**3.50**	**2.45**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.)					
	x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.07	3.41	7.15	7.86	4.30	3.64
Average yield, Yi (tons/acre) (2)			1.60			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.57			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**2.07**	**3.41**	**7.15**	**7.86**	**4.30**	**3.64**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.24	2.24	5.01	5.55	4.85	3.78
Average yield, Yi (2)			1.60			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.57			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.24**	**2.24**	**5.01**	**5.55**	**4.85**	**3.78**
1981						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.47	5.24	8.11	4.99	--	--
Average yield, Yi (bu/acre) (2)			41.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			46.00			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**2.24**	**4.74**	**7.34**	**4.52**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	2.01	4.15	8.32	5.57	--	--
Average yield, Yi (bu/acre) (2)			34.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			47.82			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.50**	**3.11**	**6.23**	**4.17**	**--**	**--**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.13	4.61	8.41	6.46	2.13	1.20
Average yield, Yi (bu/acre) (2)			45.93			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.97			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.59**	**3.44**	**6.27**	**4.81**	**1.59**	**0.89**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.13	4.61	8.41	6.46	2.13	1.20
Average yield, Yi (bu/acre) (2)			65.63			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.53			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**2.13**	**4.61**	**8.41**	**6.46**	**2.13**	**1.20**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.14	1.18	6.25	8.55	3.62	1.20
Average yield, Yi (cwt/acre) (2)			22.04			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.49			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month) (5)	**1.14**	**1.18**	**6.25**	**8.55**	**3.62**	**1.20**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.97	2.27	5.78	7.95	6.91	4.13
Average yield, Yi (tons/acre) (2)			25.31			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.16			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.97**	**2.27**	**5.78**	**7.95**	**6.91**	**4.13**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.14	1.87	8.12	9.06	6.34	2.00
Average yield, Yi (bu/acre) (2)			113.53			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			105.68			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.14**	**1.87**	**8.12**	**9.06**	**6.34**	**2.00**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.20	4.86	6.27	7.58	3.50	2.40
Average yield, Yi (tons/acre) (2)			4.40			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.98			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**3.20**	**4.86**	**6.27**	**7.58**	**3.50**	**2.40**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.29	3.31	7.35	7.90	4.30	3.56
Average yield, Yi (tons/acre) (2)			1.50			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.63			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**2.12**	**3.06**	**6.79**	**7.30**	**3.97**	**3.29**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.37	2.18	5.15	5.58	4.85	3.71
Average yield, Yi (2)			1.50			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.63			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.27**	**2.01**	**4.76**	**5.16**	**4.48**	**3.43**
	1975					
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.19	6.28	8.29	5.76	--	--
Average yield, Yi (bu/acre) (2)			39.54			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			40.09			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month)	**2.16**	**6.21**	**8.19**	**5.69**	**--**	**--**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.78	4.98	8.51	6.43	--	--
Average yield, Yi (bu/acre) (2)			42.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			38.66			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month) (5)	**1.78**	**4.98**	**8.51**	**6.43**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.89	5.53	8.60	7.46	2.44	1.19
Average yield, Yi (bu/acre) (2)			63.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			60.88			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.89**	**5.53**	**8.60**	**7.46**	**2.44**	**1.19**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.89	5.53	8.60	7.46	2.44	1.19
Average yield, Yi (bu/acre) (2)			46.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.05			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.43**	**4.17**	**6.49**	**5.63**	**1.84**	**0.90**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	1.01	1.42	6.40	9.88	4.15	1.19
Average yield, Yi (cwt/acre) (2)			16.84			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.32			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.94**	**1.32**	**5.95**	**9.19**	**3.86**	**1.11**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.74	2.72	5.91	9.19	7.92	4.10
Average yield, Yi (tons/acre) (2)			20.20			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.72			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.74**	**2.72**	**5.91**	**9.19**	**7.92**	**4.10**
Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.01	2.25	8.31	10.46	7.26	1.99
Average yield, Yi (bu/acre) (2)			85.07			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			89.66			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.97**	**2.16**	**7.97**	**10.03**	**6.96**	**1.91**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.84	5.82	6.41	8.76	4.02	2.39
Average yield, Yi (tons/acre) (2)			3.53			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.64			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.76**	**5.65**	**6.23**	**8.51**	**3.90**	**2.32**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.03	3.97	7.52	9.13	4.93	3.54
Average yield, Yi (tons/acre) (2)			1.50			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.52			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**2.00**	**3.92**	**7.43**	**9.02**	**4.87**	**3.50**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.22	2.61	5.27	6.45	5.56	3.68
Average yield, Yi (2)			1.50			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.52			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.20**	**2.58**	**5.20**	**6.37**	**5.49**	**3.63**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

1991						
Winter wheat	Derived Yenv(WINTER WHEAT) polynomial equation: y = - 0.0031x2 + 1.0232x + 37.046 (see Figure 2.1.4.29.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Maximum evapotranspiration, $ET_{,WINTER\ WHEAT(MAX)}$ (inches per month) (1)	2.12	5.79	7.64	5.15	--	--
Average yield, Yi (bu/acre) (2)			55.91			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, $Y_{env\ (WINTER\ WHEAT)}$ (2)			55.37			
Adjusted maximum evapotranspiration, ET_{WWHT} (inches per month) (5)	**2.12**	**5.79**	**7.64**	**5.15**	**--**	**--**
Spring wheat	Derived Yenv(SPRING WHEAT) polynomial equation: y = - 0.034x2 + 1.9351x + 33.159 (see Figure 2.1.4.27.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SWHT(MAX)}$ (inches per month) (1)	1.72	4.59	7.84	5.75	--	--
Average yield, Yi (bu/acre) (2)			49.60			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			57.65			
Adjusted maximum evapotranspiration, ET_{SWHT} (inches per month)	**1.51**	**4.03**	**6.89**	**5.05**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = -0.0011x2 +0.6946x + 58.808 (see Figure 2.1.4.22.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.83	5.10	7.92	6.67	2.36	1.22
Average yield, Yi (bu/acre) (2)			70.47			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			71.61			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.80**	**5.03**	**7.81**	**6.58**	**2.33**	**1.20**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = 0.0202x2 + 0.0033x + 63.86 (see Figure 2.1.4.25.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.83	5.10	7.92	6.67	2.36	1.22
Average yield, Yi (bu/acre) (2)			69.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			71.21			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.78**	**4.96**	**7.71**	**6.49**	**2.30**	**1.19**
Dry beans	Derived Yenv(DRY BEANS) polynomial equation: y = - 0.0009x2 + 0.2052x + 17.716 (see Figure 2.1.4.24.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{DRYBNS(MAX)}$ (inches per month) (1)	0.98	1.31	5.89	8.84	4.02	1.22
Average yield, Yi (cwt/acre) (2)			19.85			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			21.29			
Adjusted maximum evapotranspiration, ET_{DRYBNS} (inches per month)	**0.92**	**1.23**	**5.54**	**8.32**	**3.78**	**1.15**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = - 0.0072x2 + 0.3264x + 18.802 (see Figure 2.1.4.28.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.69	2.51	5.44	8.22	7.67	4.18
Average yield, Yi (tons/acre) (2)			21.47			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			22.40			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.63**	**2.42**	**5.24**	**7.92**	**7.39**	**4.03**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = - 0.0411x2 +3.1626x + 80.544 (see Figure 2.1.4.23.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.98	2.07	7.65	9.36	7.03	2.03
Average yield, Yi (bu/acre) (2)			125.99			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			125.80			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.98**	**2.07**	**7.65**	**9.36**	**7.03**	**2.03**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = -0.0011x2 + 0.07x + 3.4416 (see Figure 2.1.4.21.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.75	5.37	5.90	7.84	3.89	2.43
Average yield, Yi (tons/acre) (2)			4.09			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.37			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.58**	**5.04**	**5.54**	**7.36**	**3.65**	**2.28**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.96	3.66	6.93	8.16	4.77	3.61
Average yield, Yi (tons/acre) (2)			1.83			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.88			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.91**	**3.57**	**6.75**	**7.95**	**4.65**	**3.52**

Table 2.1.4.67 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Guernsey to State Line subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0004x2 + 0.0133x + 1.4783 (see Figure 2.1.4.26.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.18	2.41	4.85	5.77	5.38	3.75
Average yield, Yi (2)			1.83			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.88			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.15**	**2.35**	**4.73**	**5.62**	**5.24**	**3.66**

Notes:

(1) See Table 2.1.4.42.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

A summary of adjusted, yield-based crop evapotranspiration values during high, low, and normal or average stream flow years–derivation of which is shown in Tables 2.1.4.65, 2.1.4.66, and 2.1.4.67–is included in Table 2.1.4.68.

Table 2.1.4.68 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Guernsey to State Line subbasin

High stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1986	winter wheat	1.96	5.46	7.51	4.76	--	--	**19.69**
	spring wheat	1.73	4.69	8.37	5.76	--	--	**20.55**
	barley	1.84	5.21	8.46	6.68	2.28	1.00	**25.47**
	oats	1.73	4.88	7.93	6.26	2.14	0.94	**23.88**
	dry beans	0.92	1.23	5.82	8.19	3.60	0.93	**20.69**
	sugar beets	1.69	2.56	5.81	8.23	7.41	3.42	**29.12**
	corn	0.99	2.12	8.17	9.37	6.80	1.66	**29.11**
	alfalfa	2.76	5.48	6.30	7.85	3.76	1.99	**28.14**
	other hay	1.97	3.74	7.39	8.18	4.62	2.95	**28.85**
	irrigated pasture	1.18	2.46	5.18	5.77	5.20	3.07	**22.86**
1984	winter wheat	1.52	5.76	6.88	4.52	--	--	**18.68**
	spring wheat	1.39	5.15	7.95	5.68	--	--	**20.17**
	barley	1.48	5.72	8.04	6.59	2.31	1.06	**25.20**
	oats	1.25	4.84	6.80	5.58	1.95	0.90	**21.32**
	dry beans	0.79	1.46	5.98	8.73	3.94	1.06	**21.96**
	sugar beets	1.32	2.72	5.35	7.86	7.26	3.54	**28.05**
	corn	0.75	2.20	7.36	8.78	6.53	1.68	**27.30**
	alfalfa	2.17	5.89	5.87	7.58	3.73	2.09	**27.33**
	other hay	1.59	4.11	7.03	8.07	4.67	3.15	**28.62**
	irrigated pasture	0.95	2.70	4.93	5.70	5.27	3.28	**22.83**
1985	winter wheat	1.82	4.98	5.86	3.90	--	--	**16.56**
	spring wheat	1.65	4.39	6.69	4.83	--	--	**17.56**
	barley	2.13	5.93	8.22	6.82	2.26	1.02	**26.38**
	oats	1.97	5.49	7.61	6.31	2.09	0.94	**24.41**
	dry beans	1.11	1.47	5.91	8.75	3.73	0.99	**21.96**
	sugar beets	2.00	2.98	5.77	8.59	7.50	3.57	**30.41**
	corn	1.05	2.21	7.28	8.79	6.17	1.55	**27.05**
	alfalfa	2.47	4.82	4.73	6.19	2.88	1.57	**22.66**
	other hay	2.01	3.75	6.32	7.36	4.02	2.65	**26.11**
	irrigated pasture	1.21	2.46	4.44	5.20	4.54	2.76	**20.61**
1973	winter wheat	2.39	6.93	8.23	5.38	--	--	**22.93**
	spring wheat	1.85	5.21	8.02	5.69	--	--	**20.77**
	barley	1.96	5.79	8.10	6.60	2.32	1.04	**25.81**
	oats	1.76	5.20	7.28	5.93	2.09	0.94	**23.20**
	dry beans	1.11	1.56	6.35	9.22	4.17	1.10	**23.51**
	sugar beets	1.90	3.00	5.87	8.57	7.95	3.78	**31.07**
	corn	1.11	2.48	8.25	9.76	7.30	1.83	**30.73**
	alfalfa	3.10	6.40	6.35	8.15	4.02	2.19	**30.21**
	other hay	1.81	3.57	6.09	6.93	4.03	2.66	**25.09**
	irrigated pasture	1.08	2.35	4.26	4.90	4.55	2.76	**19.90**

Table 2.1.4.68 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Guernsey to State Line subbasin (cont)

Low stream flow years								
		"Yield adjusted" evapotranspiration, ETC (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1972	winter wheat	2.37	6.52	8.41	5.20	--	--	**22.50**
	spring wheat	1.93	5.17	8.63	5.81	--	--	**21.54**
	barley	1.96	5.49	8.36	6.45	2.17	1.19	**25.62**
	oats	2.05	5.73	8.72	6.73	2.26	1.24	**26.73**
	dry beans	1.10	1.47	6.48	8.92	3.85	1.24	**23.06**
	sugar beets	1.88	2.82	5.99	8.29	7.34	4.27	**30.59**
	corn	1.10	2.33	8.42	9.45	6.73	2.07	**30.10**
	alfalfa	2.95	5.81	6.25	7.60	3.58	2.38	**28.57**
	other hay	1.80	3.38	6.25	6.76	3.75	3.02	**24.96**
	irrigated pasture	1.07	2.22	4.38	4.77	4.22	3.14	**19.80**
1989	winter wheat	2.04	5.28	7.04	4.62	--	--	**18.98**
	spring wheat	1.69	4.25	7.34	5.24	--	--	**18.52**
	barley	1.85	4.88	7.68	6.28	1.97	0.97	**23.63**
	oats	1.53	4.02	6.32	5.17	1.62	0.80	**19.46**
	dry beans	1.06	1.33	6.07	8.86	3.57	1.03	**21.92**
	sugar beets	1.72	2.42	5.30	7.78	6.42	3.34	**26.98**
	corn	0.95	1.90	7.09	8.43	5.61	1.54	**25.52**
	alfalfa	3.08	5.69	6.32	8.16	3.58	2.14	**28.97**
	other hay	1.73	3.06	5.85	6.70	3.47	2.50	**23.31**
	irrigated pasture	1.04	2.01	4.10	4.74	3.91	2.60	**18.40**
1990	winter wheat	1.94	5.02	7.31	4.32	--	--	**18.59**
	spring wheat	1.61	4.06	7.66	4.91	--	--	**18.24**
	barley	1.71	4.52	7.76	5.72	2.02	1.15	**22.88**
	oats	1.56	4.11	7.06	5.20	1.83	1.04	**20.80**
	dry beans	1.03	1.29	6.42	8.42	3.83	1.28	**22.27**
	sugar beets	1.67	2.35	5.64	7.44	6.94	4.17	**28.21**
	corn	1.03	2.05	8.36	8.95	6.71	2.14	**29.24**
	alfalfa	2.81	5.19	6.31	7.33	3.63	2.51	**27.78**
	other hay	1.73	3.06	6.40	6.60	3.86	3.21	**24.86**
	irrigated pasture	1.04	2.01	4.49	4.66	4.34	3.34	**19.88**
1992	winter wheat	2.25	4.91	6.49	3.90	--	--	**17.55**
	spring wheat	1.58	3.37	5.75	3.76	--	--	**14.46**
	barley	2.25	5.00	7.77	5.84	1.99	1.23	**24.08**
	oats	2.31	5.14	7.99	6.00	2.05	1.26	**24.75**
	dry beans	1.11	1.18	5.31	7.10	3.12	1.13	**18.95**
	sugar beets	1.67	1.99	4.32	5.82	5.23	3.41	**22.44**
	corn	1.04	1.75	6.48	7.07	5.11	1.76	**23.21**
	alfalfa	3.02	4.72	5.20	6.15	2.94	2.20	**24.23**
	other hay	1.85	2.77	5.24	5.50	3.10	2.80	**21.26**
	irrigated pasture	1.11	1.81	3.67	3.89	3.49	2.91	**16.88**

Table 2.1.4.68 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Guernsey to State Line subbasin (cont)

Normal or average stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1974	winter wheat	2.42	6.76	8.74	5.75	--	--	**23.67**
	spring wheat	1.87	5.09	8.51	6.09	--	--	**21.56**
	barley	2.19	6.21	9.47	7.78	2.30	1.23	**29.18**
	oats	1.72	4.86	7.42	6.09	1.80	0.96	**22.85**
	dry beans	1.17	1.59	7.04	10.30	3.91	1.23	**25.24**
	sugar beets	1.93	2.92	6.23	9.16	7.13	4.03	**31.40**
	corn	1.09	2.35	8.54	10.19	6.38	1.90	**30.45**
	alfalfa	3.29	6.54	7.06	9.14	3.78	2.45	**32.26**
	other hay	1.89	3.59	6.66	7.66	3.73	2.93	**26.46**
	irrigated pasture	1.13	2.36	4.67	5.41	4.21	3.04	**20.82**
1983	winter wheat	1.80	5.24	7.10	5.11	--	--	**19.25**
	spring wheat	1.47	4.15	7.28	5.71	--	--	**18.61**
	barley	1.56	4.61	7.36	6.62	2.44	1.26	**23.85**
	oats	1.43	4.23	6.75	6.07	2.24	1.16	**21.88**
	dry beans	0.80	1.13	5.22	8.36	3.96	1.20	**20.67**
	sugar beets	1.11	1.74	3.89	6.26	6.08	3.33	**22.41**
	corn	0.84	1.87	7.11	9.28	7.26	2.10	**28.46**
	alfalfa	2.34	4.86	5.49	7.77	4.02	2.52	**27.00**
	other hay	1.51	2.99	5.82	7.31	4.45	3.37	**25.45**
	irrigated pasture	0.90	1.97	4.07	5.17	5.02	3.50	**20.63**
1988	winter wheat	2.37	6.25	8.56	5.11	--	--	**22.29**
	spring wheat	2.01	5.14	9.12	5.92	--	--	**22.19**
	barley	1.49	3.97	6.42	4.78	1.69	0.81	**19.16**
	oats	1.48	3.96	6.40	4.77	1.68	0.81	**19.10**
	dry beans	1.15	1.47	6.90	9.16	4.16	1.17	**24.01**
	sugar beets	1.97	2.80	6.33	8.45	7.87	3.99	**31.41**
	corn	1.15	2.33	8.96	9.70	7.27	1.95	**31.36**
	alfalfa	3.22	6.05	6.92	8.12	4.02	2.34	**30.67**
	other hay	1.83	3.29	6.47	6.75	3.94	2.77	**25.05**
	irrigated pasture	1.10	2.16	4.54	4.77	4.44	2.88	**19.89**
1982	winter wheat	2.28	5.62	6.75	5.11	--	--	**19.76**
	spring wheat	1.86	4.45	6.93	5.70	--	--	**18.94**
	barley	1.75	4.38	6.20	5.86	1.94	0.91	**21.04**
	oats	1.97	4.94	7.00	6.61	2.19	1.03	**23.74**
	dry beans	0.98	1.18	4.84	8.13	3.46	0.96	**19.55**
	sugar beets	1.67	2.24	4.43	7.49	6.55	3.25	**25.63**
	corn	1.06	2.01	6.76	9.27	6.53	1.71	**27.34**
	alfalfa	2.75	4.84	4.85	7.21	3.35	1.91	**24.91**
	other hay	2.11	3.55	6.12	8.09	4.43	3.05	**27.35**
	irrigated pasture	1.27	2.33	4.29	5.71	4.99	3.17	**21.76**

Table 2.1.4.68 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Guernsey to State Line subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1987	winter wheat	2.19	4.95	6.64	4.27	--	--	**18.05**
	spring wheat	1.53	3.36	5.82	4.08	--	--	**14.79**
	barley	1.74	4.00	6.33	5.08	1.53	0.89	**19.57**
	oats	2.41	5.54	8.76	7.03	2.11	1.23	**27.08**
	dry beans	1.21	1.34	6.13	8.76	3.37	1.16	**21.97**
	sugar beets	2.17	2.66	5.88	8.46	6.67	4.11	**29.95**
	corn	1.28	2.23	8.40	9.79	6.23	2.03	**29.96**
	alfalfa	3.42	5.52	6.18	7.81	3.28	2.32	**28.53**
	other hay	2.18	3.36	6.46	7.26	3.59	3.07	**25.92**
	irrigated pasture	1.31	2.20	4.53	5.13	4.04	3.19	**20.40**
1979	winter wheat	1.86	4.40	6.27	4.23	--	--	**16.76**
	spring wheat	1.74	4.00	7.38	5.41	--	--	**18.53**
	barley	1.60	3.84	6.45	5.43	1.73	1.05	**20.10**
	oats	1.74	4.16	6.98	5.88	1.87	1.14	**21.77**
	dry beans	1.05	1.21	5.89	8.84	3.61	1.29	**21.89**
	sugar beets	1.65	2.12	4.96	7.50	6.29	4.03	**26.55**
	corn	0.96	1.75	6.99	8.55	5.78	1.96	**25.99**
	alfalfa	2.89	4.87	5.78	7.69	3.42	2.53	**27.18**
	other hay	1.62	2.60	5.31	6.25	3.29	2.92	**21.99**
	irrigated pasture	0.97	1.71	3.72	4.42	3.70	3.04	**17.56**
1976	winter wheat	1.91	5.62	6.85	4.57	--	--	**18.95**
	spring wheat	1.87	5.34	8.40	6.11	--	--	**21.72**
	barley	1.84	5.50	7.90	6.58	2.16	1.18	**25.16**
	oats	1.72	5.15	7.39	6.15	2.02	1.10	**23.53**
	dry beans	1.03	1.48	6.15	9.14	3.86	1.24	**22.90**
	sugar beets	1.84	2.93	5.89	8.80	7.60	4.39	**31.45**
	corn	1.07	2.43	8.27	10.02	6.97	2.13	**30.89**
	alfalfa	3.00	6.29	6.38	8.39	3.86	2.56	**30.48**
	other hay	1.69	3.39	5.92	6.90	3.74	2.99	**24.63**
	irrigated pasture	1.01	2.23	4.15	4.88	4.21	3.11	**19.59**
1980	winter wheat	2.25	5.48	7.80	5.35	--	--	**20.88**
	spring wheat	1.33	3.17	5.83	4.35	--	--	**14.68**
	barley	1.66	4.12	6.91	5.91	1.91	1.02	**21.53**
	oats	1.81	4.48	7.50	6.41	2.08	1.11	**23.39**
	dry beans	1.04	1.24	6.01	9.17	3.81	1.20	**22.47**
	sugar beets	1.79	2.37	5.56	8.53	7.26	4.13	**29.64**
	corn	1.04	1.96	7.79	9.69	6.64	2.00	**29.12**
	alfalfa	2.69	4.67	5.55	7.48	3.39	2.21	**25.99**
	other hay	1.46	2.42	4.94	5.91	3.16	2.49	**20.38**
	irrigated pasture	0.87	1.59	3.46	4.18	3.56	2.59	**16.25**

Table 2.1.4.68 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Guernsey to State Line subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1977	winter wheat	1.55	4.10	5.31	3.23	--	--	**14.19**
	spring wheat	1.96	5.04	8.44	5.58	--	--	**21.02**
	barley	1.65	4.44	6.78	5.14	1.49	0.95	**20.45**
	oats	1.60	4.32	6.60	5.00	1.45	0.93	**19.90**
	dry beans	1.14	1.47	6.51	8.79	3.27	1.23	**22.41**
	sugar beets	1.97	2.82	6.03	8.19	6.24	4.23	**29.48**
	corn	1.18	2.39	8.69	9.58	5.87	2.11	**29.82**
	alfalfa	3.10	5.87	6.33	7.58	3.07	2.39	**28.34**
	other hay	1.76	3.18	5.91	6.27	2.99	2.80	**22.91**
	irrigated pasture	1.05	2.08	4.14	4.43	3.38	2.92	**18.00**
1978	winter wheat	2.24	5.39	7.89	4.96	--	--	**20.48**
	spring wheat	1.47	3.46	6.55	4.48	--	--	**15.96**
	barley	1.90	4.69	8.07	6.34	2.10	1.21	**24.31**
	oats	1.93	4.75	8.18	6.42	2.13	1.23	**24.64**
	dry beans	0.91	1.07	5.35	7.48	3.18	1.08	**19.07**
	sugar beets	1.64	2.14	5.18	7.28	6.36	3.87	**26.47**
	corn	0.97	1.80	7.35	8.38	5.90	1.90	**26.30**
	alfalfa	2.90	5.00	6.10	7.54	3.50	2.45	**27.49**
	other hay	2.07	3.41	7.15	7.86	4.30	3.64	**28.43**
	irrigated pasture	1.24	2.24	5.01	5.55	4.85	3.78	**22.67**
1981	winter wheat	2.24	4.74	7.34	4.52	--	--	**18.84**
	spring wheat	1.50	3.11	6.23	4.17	--	--	**15.01**
	barley	1.59	3.44	6.27	4.81	1.59	0.89	**18.59**
	oats	2.13	4.61	8.41	6.46	2.13	1.20	**24.94**
	dry beans	1.14	1.18	6.25	8.55	3.62	1.20	**21.94**
	sugar beets	1.97	2.27	5.78	7.95	6.91	4.13	**29.01**
	corn	1.14	1.87	8.12	9.06	6.34	2.00	**28.53**
	alfalfa	3.20	4.86	6.27	7.58	3.50	2.40	**27.81**
	other hay	2.12	3.06	6.79	7.30	3.97	3.29	**26.53**
	irrigated pasture	1.27	2.01	4.76	5.16	4.48	3.43	**21.11**
1975	winter wheat	2.16	6.21	8.19	5.69	--	--	**22.25**
	spring wheat	1.78	4.98	8.51	6.43	--	--	**21.70**
	barley	1.89	5.53	8.60	7.46	2.44	1.19	**27.11**
	oats	1.43	4.17	6.49	5.63	1.84	0.90	**20.46**
	dry beans	0.94	1.32	5.95	9.19	3.86	1.11	**22.37**
	sugar beets	1.74	2.72	5.91	9.19	7.92	4.10	**31.58**
	corn	0.97	2.16	7.97	10.03	6.96	1.91	**30.00**
	alfalfa	2.76	5.65	6.23	8.51	3.90	2.32	**29.37**
	other hay	2.00	3.92	7.43	9.02	4.87	3.50	**30.74**
	irrigated pasture	1.20	2.58	5.20	6.37	5.49	3.63	**24.47**

Table 2.1.4.68 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Guernsey to State Line subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
1991	winter wheat	2.12	5.79	7.64	5.15	--	--	**20.70**
	spring wheat	1.51	4.03	6.89	5.05	--	--	**17.48**
	barley	1.80	5.03	7.81	6.58	2.33	1.20	**24.75**
	oats	1.78	4.96	7.71	6.49	2.30	1.19	**24.43**
	dry beans	0.92	1.23	5.54	8.32	3.78	1.15	**20.94**
	sugar beets	1.63	2.42	5.24	7.92	7.39	4.03	**28.63**
	corn	0.98	2.07	7.65	9.36	7.03	2.03	**29.12**
	alfalfa	2.58	5.04	5.54	7.36	3.65	2.28	**26.45**
	other hay	1.91	3.57	6.75	7.95	4.65	3.52	**28.35**
	irrigated pasture	1.15	2.35	4.73	5.62	5.24	3.66	**22.75**

Notes:
(1) See Tables 2.1.4.65., 2.1.4.66., and 2.1.4.67.

2.1.4.7.7 Adjusted Crop Evapotranspiration, ET_c – Upper Laramie Subbasin

Annual crop yields and derived area-weighted annual crop yields for each crop during the 1972 through 2001 study period in the Upper Laramie subbasin are shown in Table 2.1.4.69. As shown on this table, the Upper Laramie subbasin consists primarily of Albany County and a small portion of Carbon County. These two counties and the portions of the subbasin that each comprises are shown at the top of Table 2.1.4.69. The assumptions, based on tabulated NASS yield data, underlying derivation of area-weighted yields for each crop are included near the top of each tabulation of annual crop yields. Examples of these assumptions in the Upper Laramie subbasin are that barley has not been irrigated and harvested in the subbasin after year 1991 and that significant corn production has never occurred in the subbasin. This table also shows years and yields that were graphed to derive a polynomial equations for determining $Y_{env(C)}$ for each crop in the subbasin. Area-weighted annual yield values during the study period for each crop, the Y_{env} polynomial trend lines, and the resultant Y_{env} polynomial equations are graphed in Figures 2.1.4.30 through 2.1.4.33.

Table 2.1.4.69 Area-weighted crop yields - Upper Laramie subbasin

	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
Portion of total Upper Laramie subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)	0.9700	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Crop: alfalfa											
Units: tons per acre											
Assumption: alfalfa production ongoing through entire 1972 - 2001 period in both counties located partially or entirely within the subbasin; estimated yield values (in shaded cells) incorporated where actual data is not available											
National Agricultural Statistics Service (NASS) crop yield data	**County:**										**Upper Laramie subbasin - area-weighted yield**
Year	**Crop**	**Unit**	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	
1972	Alfalfa	ton/acre	2.20	1.90	2.03	2.66	3.30	3.00	2.42	2.80	3.30	1.80	2.19
1973	Alfalfa	ton/acre	2.27	1.90	2.30	2.80	3.50	3.10	2.46	2.80	3.17	1.90	2.26
1974	Alfalfa	ton/acre	2.20	1.90	2.20	2.91	3.65	3.60	2.21	2.71	2.80	1.70	2.19
1975	Alfalfa	ton/acre	2.00	2.06	2.30	3.11	3.53	2.80	2.50	2.31	2.85	1.70	2.00
1976	Alfalfa	ton/acre	2.11	1.50	2.40	3.50	3.70	2.51	2.57	2.12	2.60	1.60	2.09
1977	Alfalfa	ton/acre	1.90	1.60	1.90	2.89	3.50	2.80	2.10	1.80	2.30	1.30	1.89
1978	Alfalfa	ton/acre	2.60	1.60	2.10	3.32	3.94	2.50	2.19	2.40	2.40	1.60	2.57
1979	Alfalfa	ton/acre	2.50	2.00	2.20	3.80	3.80	2.90	2.24	2.60	3.30	1.70	2.49
1980	Alfalfa	ton/acre	2.30	2.10	2.00	3.00	3.60	2.90	2.60	2.30	2.84	1.20	2.29
1981	Alfalfa	ton/acre	2.60	2.20	2.20	3.40	4.40	2.80	2.60	2.90	2.90	1.50	2.59
1982	Alfalfa	ton/acre	2.54	2.47	2.03	2.90	3.73	3.35	3.54	2.55	2.50	1.44	2.54
1983	Alfalfa	ton/acre	2.32	2.67	2.24	3.20	4.70	3.50	2.90	2.85	2.87	1.20	2.33
1984	Alfalfa	ton/acre	2.40	2.20	2.00	3.20	4.03	3.40	2.30	3.00	3.10	1.80	2.39
1985	Alfalfa	ton/acre	1.13	2.29	1.64	2.90	3.10	3.23	1.21	2.60	2.81	1.55	1.16
1986	Alfalfa	ton/acre	2.10	1.71	2.24	3.51	4.29	3.90	2.27	3.46	3.22	1.54	2.09
1987	Alfalfa	ton/acre	2.00	1.64	2.00	3.45	4.00	3.13	2.04	2.15	2.78	1.29	1.99
1988	Alfalfa	ton/acre	2.20	2.12	1.65	3.24	4.54	3.67	1.93	2.53	2.63	1.33	2.20
1989	Alfalfa	ton/acre	1.93	2.24	1.83	3.14	4.14	4.44	2.18	1.96	3.00	1.38	1.94
1990	Alfalfa	ton/acre	1.94	1.65	2.36	3.40	4.25	3.50	2.25	2.00	2.97	1.62	1.93
1991	Alfalfa	ton/acre	1.71	2.10	2.40	3.49	4.09	3.50	2.30	2.60	3.90	1.40	1.72
1992	Alfalfa	ton/acre	1.80	2.10	2.00	3.10	3.81	3.70	2.50	2.30	2.80	1.30	1.81
1993	Alfalfa	ton/acre	2.30	2.10	2.70	3.42	4.50	3.60	2.80	3.40	3.50	1.40	2.29
1994	Alfalfa	ton/acre	2.10	2.00	2.10	3.13	4.20	4.09	2.36	3.40	3.50	1.70	2.10
1995	Alfalfa	ton/acre	1.44	2.44	2.85	3.43	4.89	3.88	2.44	3.33	3.42	1.50	1.47
1996	Alfalfa	ton/acre	1.87	2.15	2.39	3.31	4.46	3.61	2.48	2.40	3.48	1.46	1.88
1997	Alfalfa	ton/acre	1.90	2.16	2.60	4.00	4.52	4.11	3.10	2.83	4.12	1.93	1.91
1998	Alfalfa	ton/acre	2.02	2.17	2.20	3.46	4.40	4.00	2.64	3.33	4.01	1.60	2.02
1999	Alfalfa	ton/acre	2.10	2.18	2.64	3.47	4.52	3.86	2.60	3.80	3.83	1.64	2.10
2000	Alfalfa	ton/acre	1.87	2.00	1.97	3.53	4.31	4.06	2.65	3.33	3.30	1.63	1.87
2001	Alfalfa	ton/acre	1.74	2.00	2.40	3.55	4.40	3.58	2.63	3.75	3.40	1.65	1.75

Derivation of Y_{env} equation

				Graph input points:	Year	X axis	Yield							
					1973	1	2.26							
					1980	8	2.29							
					1988	16	2.20							
					1993	21	2.29							

Derived $Y_{env(ALFALFA)}$ polynomial equation: **$y = 0.0003x^2 - 0.0064x + 2.2861$ (see Figure 2.1.4.30.)**

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.69 Area-weighted crop yields - Upper Laramie subbasin

	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
Portion of total Upper Laramie subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)	0.9700	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Crop: barley											
Units: bushels per acre											
Assumption: significant barley production data for the two counties comprising most of the subbasin ends in 1991; assume no significant subbasin barley production after 1991; estimate annual yields for years for which data do not exist											
National Agricultural Statistics Service (NASS) crop yield data	**County:**										**Upper Laramie subbasin - area-weighted yield**
Year	**Crop**	**Unit**	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	
1972	Barley	bu/acre	49.00	50.00	51.00	73.00	56.00	67.00	50.00	51.00	66.00	46.00	49.03
1973	Barley	bu/acre	51.00	47.00	46.93	48.00	56.00	63.00	46.20	58.00	66.00	45.00	50.88
1974	Barley	bu/acre	48.00	52.00	39.00	62.00	60.53	53.09	58.00	42.47	60.43		48.12
1975	Barley	bu/acre	47.00	40.00	40.00	79.89	63.00	58.73	50.00	65.00	58.00		46.79
1976	Barley	bu/acre	48.00	60.00	50.00	79.00	56.00	58.94	70.00	50.00	50.00		48.36
1977	Barley	bu/acre	49.00	55.00	26.00	68.00	44.00	39.00	49.00	32.00	30.00		49.18
1978	Barley	bu/acre	62.00	70.00	32.00	77.00	62.00	61.00	60.00	42.00	37.00		62.24
1979	Barley	bu/acre	32.00	38.00	31.00	70.00	50.00	51.00		51.00	54.00		32.18
1980	Barley	bu/acre	43.60	60.00	53.11	79.79	53.47	49.76	34.00	42.55	49.53		44.09
1981	Barley	bu/acre	53.63	53.50	44.63	79.54	45.93	48.89		50.00	53.85		53.63
1982	Barley	bu/acre	65.00	65.00	55.00	63.40	57.06	56.28		55.00	62.00		65.00
1983	Barley	bu/acre	50.00	60.00	66.50	77.35	69.58	71.45	65.00	50.00	48.88		50.30
1984	Barley	bu/acre	50.00	70.00	66.00	65.00	70.00	70.00	64.00	51.00	54.00		50.60
1985	Barley	bu/acre	48.00	60.60	68.10	68.00	66.00	78.00	55.00	51.00	54.00		48.38
1986	Barley	bu/acre	50.00	73.29	66.33	77.49	68.46	74.29	57.00	65.00	69.00		50.70
1987	Barley	bu/acre	50.00	65.00	44.82	76.47	47.00	77.24	52.00	70.00	55.00		50.45
1988	Barley	bu/acre	60.00	70.00	33.00	51.88	45.00	41.48	46.00	42.00	41.00		60.30
1989	Barley	bu/acre	55.00	65.00	53.33	73.00	59.82	63.80	50.00	57.50	64.15		55.30
1990	Barley	bu/acre	60.00	70.00	55.00	73.03	62.50	67.76	45.00	60.50	66.44		60.30
1991	Barley	bu/acre	70.00	65.00	62.00	82.40	70.47	74.59	65.00	69.00	68.00		69.85
1992	Barley	bu/acre			66.00	83.20	70.00	75.00	81.00	61.00	60.00		
1993	Barley	bu/acre			65.00	101.80	65.00	68.33	55.00	70.00	67.50		
1994	Barley	bu/acre			55.00	70.00	69.00	66.00	75.00	76.00	36.00		
1995	Barley	bu/acre			86.00	103.00	83.00	70.34			69.00		
1996	Barley	bu/acre				93.36	75.91	70.85			81.03		
1997	Barley	bu/acre				87.00	57.00	80.09	70.00		86.00		
1998	Barley	bu/acre				85.33			82.86		101.05		
1999	Barley	bu/acre				96.51	78.80						
2000	Barley	bu/acre				75.00					100.00		
2001	Barley	bu/acre				76.00							

Derivation of Y_{env} equation

	Year	X axis	Yield
Graph input points:	1973	1	50.88
	1981	9	53.63
	1988	16	60.30
	1990	18	60.30

Derived $Y_{env(BARLEY)}$ polynomial equation: **$y = 0.0211x^2 + 0.1613x + 50.36$ (see Figure 2.1.4.31.)**

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.69 Area-weighted crop yields - Upper Laramie subbasin

			Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
Portion of total Upper Laramie subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)			0.9700	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Crop: corn													
Units: bushels per acre													
Assumption: no significant corn production in the subbasin													
National Agricultural Statistics Service (NASS) crop yield data			**County:**										**Upper Laramie subbasin - area-weighted yield**
Year	**Crop**	**Unit**	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	
1972	Corn	bu/acre		70.00	57.00	80.00	94.00	78.00	70.00		94.00		
1973	Corn	bu/acre	71.00	74.00		84.78	89.22	97.00	73.00		116.00		
1974	Corn	bu/acre		78.00		50.50	79.50	101.25	50.00		77.00		
1975	Corn	bu/acre		63.00		59.00	85.07	66.00	55.00		96.00		
1976	Corn	bu/acre		55.00		85.00	93.08	94.00	55.00		98.00		
1977	Corn	bu/acre		55.00		86.00	94.00	95.00	55.00		73.80		
1978	Corn	bu/acre		61.00	91.00	85.40	89.50	66.00	61.00	88.00	73.00		
1979	Corn	bu/acre			80.00	86.00	89.83	75.00	75.00	70.00	88.00		
1980	Corn	bu/acre			90.00	90.00	102.90	95.00	85.00	93.00	90.00		
1981	Corn	bu/acre			84.00	84.00	113.53	90.00	74.00	92.00	112.00		
1982	Corn	bu/acre			84.00	98.00	111.00	95.00	87.00	88.00	104.94		
1983	Corn	bu/acre			85.00	94.00	110.55	101.00	78.00	100.00	95.00		
1984	Corn	bu/acre				90.00	105.39	97.00	65.00	99.00	90.00		
1985	Corn	bu/acre				91.00	100.00	94.00	60.00	90.00	92.32		
1986	Corn	bu/acre				104.00	119.70	119.00	76.00	102.00	108.00		
1987	Corn	bu/acre			92.00	91.00	117.75	112.11	80.00	95.00	97.00		
1988	Corn	bu/acre			126.00	95.00	130.78	127.00	90.00	108.00	104.00		
1989	Corn	bu/acre			91.00	92.08	96.91	102.00	85.00	90.00	98.14		
1990	Corn	bu/acre			120.00	92.00	127.99	123.00	90.00	113.33	111.80		
1991	Corn	bu/acre			99.00	95.00	125.99	109.04	94.00	66.00	106.00		
1992	Corn	bu/acre			97.00	78.00	101.81	102.00	38.00		92.00		
1993	Corn	bu/acre			80.00	88.50	82.00	65.50			80.00		
1994	Corn	bu/acre				111.00	130.39	111.72			103.00		
1995	Corn	bu/acre				108.00					80.00		
1996	Corn	bu/acre				105.00	130.87		103.33		101.90		
1997	Corn	bu/acre				126.07	140.00	135.00			132.00		
1998	Corn	bu/acre					136.99	127.94			138.26		
1999	Corn	bu/acre				101.43	122.17	120.00			135.00		
2000	Corn	bu/acre				112.86	136.63	142.86			130.81		
2001	Corn	bu/acre						135.00			112.94		
	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated												
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted												

Table 2.1.4.69 Area-weighted crop yields - Upper Laramie subbasin

			Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
Portion of total Upper Laramie subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)			0.9700	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Crop: dry beans													
Units: hundred pounds per acre (cwt/acre)													
Assumption: no dry beans production in the subbasin													
National Agricultural Statistics Service (NASS) crop yield data			**County:**										**Upper Laramie subbasin - area-weighted yield**
Year	**Crop**	**Unit**	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	
1972	Dry beans	cwt/acre			17.75	18.80	19.70	18.30			19.50		
1973	Dry beans	cwt/acre			17.50	17.50	18.20	18.00			17.50		
1974	Dry beans	cwt/acre			17.20	17.80	19.48	19.90			19.90		
1975	Dry beans	cwt/acre			15.40	18.30	16.84	17.60			17.60		
1976	Dry beans	cwt/acre			16.00	19.30	17.80	16.00			16.50		
1977	Dry beans	cwt/acre			14.23	19.50	17.90	17.60			14.00		
1978	Dry beans	cwt/acre			15.80	16.60	16.29	14.30			15.80		
1979	Dry beans	cwt/acre			19.00	21.00	19.11	18.00			18.00		
1980	Dry beans	cwt/acre			18.80	19.00	21.70	20.70			18.43		
1981	Dry beans	cwt/acre			17.00	21.30	22.04	20.60			22.10		
1982	Dry beans	cwt/acre			15.00	19.70	18.07	16.60			17.00		
1983	Dry beans	cwt/acre			14.60	19.60	18.80	16.70			18.50		
1984	Dry beans	cwt/acre			19.00	19.80	22.20	20.00			19.46		
1985	Dry beans	cwt/acre			18.00	15.10	19.00	18.80			14.40		
1986	Dry beans	cwt/acre			18.00	19.50	18.65	17.80			16.35		
1987	Dry beans	cwt/acre			19.00	21.40	19.20	18.56			17.00		
1988	Dry beans	cwt/acre			20.00	17.42	21.30	17.53			18.50		
1989	Dry beans	cwt/acre			17.00	19.00	19.18	20.70			18.61		
1990	Dry beans	cwt/acre			17.50	17.00	21.03	20.79			19.00		
1991	Dry beans	cwt/acre			17.00	20.00	19.85	17.87			18.93		
1992	Dry beans	cwt/acre				20.00	18.83	15.56			15.67		
1993	Dry beans	cwt/acre				13.40	14.58	14.79			14.57		
1994	Dry beans	cwt/acre				18.17	20.45	20.60			16.00		
1995	Dry beans	cwt/acre				17.78	17.96	18.24			17.70		
1996	Dry beans	cwt/acre				26.34	23.99	22.20			16.94		
1997	Dry beans	cwt/acre				23.52	21.91	23.64			20.59		
1998	Dry beans	cwt/acre				22.41	22.63	24.25			22.58		
1999	Dry beans	cwt/acre				19.14	21.02	23.24			18.63		
2000	Dry beans	cwt/acre				21.05	22.86	24.68			18.12		
2001	Dry beans	cwt/acre				18.56	20.81	26.26			18.85		
	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated												
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted												

Table 2.1.4.69 Area-weighted crop yields - Upper Laramie subbasin

	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
Portion of total Upper Laramie subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)	0.9700	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Crop: oats											
Units: bushels per acre											
Assumption: significant oats production data for the subbasin ends in early 1990s; assume no significant subbasin oats production after 1991											
National Agricultural Statistics Service (NASS) crop yield data	**County:**										**Upper Laramie subbasin - area-weighted yield**
Year	**Crop**	**Unit**	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	
1972	Oats	bu/acre	50.00	61.00	66.00	65.67	64.00	54.33	57.00	66.00	60.00	55.00	50.33
1973	Oats	bu/acre	50.00	50.00	52.20	53.21	53.00	61.00	50.00	59.00	49.00	50.00	50.00
1974	Oats	bu/acre	39.00	50.00	33.00	50.00	48.00	63.00	43.23	43.00	59.81	60.00	39.33
1975	Oats	bu/acre	52.00	52.00	45.82	60.00	46.00	49.00	50.40	40.00	46.00	44.00	52.00
1976	Oats	bu/acre	56.00	59.00	56.79	58.00	54.00	63.00	58.00	60.00	55.00	53.00	56.09
1977	Oats	bu/acre	52.00	53.00	30.00	63.62	44.00	34.00	51.85	51.00	42.00	52.00	52.03
1978	Oats	bu/acre	58.50	62.00	75.35	76.00	76.00	76.00	62.00	79.00	77.00	79.00	58.61
1979	Oats	bu/acre	67.00	62.00	43.00	62.00	56.00	48.00	66.18	46.00	39.00	77.50	66.85
1980	Oats	bu/acre	58.00	72.00	48.00	60.00	59.70	69.00	64.00	55.00	59.00	65.00	58.42
1981	Oats	bu/acre	43.00	46.73	49.00	59.03	65.63	67.00	50.00	54.00	58.00	64.00	43.11
1982	Oats	bu/acre	65.50	62.00	70.00	64.60	79.00	79.42	68.00	74.00	59.00	74.00	65.40
1983	Oats	bu/acre	65.00	60.00	58.17	66.23	60.00	64.00	61.00	60.00	51.00	64.00	64.85
1984	Oats	bu/acre	53.00	54.00	52.00	73.00	55.00	64.46	54.00	58.00	46.29	54.00	53.03
1985	Oats	bu/acre	53.00	51.00	59.00	65.65	60.00	59.00	50.44	58.00	47.00	63.00	52.94
1986	Oats	bu/acre	65.00	71.00	60.00	74.00	63.00	75.00	53.00	63.00	77.00	60.00	65.18
1987	Oats	bu/acre	61.00	68.00	48.36	63.33	80.21	85.27	51.00	71.00	69.00	56.00	61.21
1988	Oats	bu/acre	44.00	46.00	37.50	62.00	44.44	34.50	34.00	39.00	33.00	52.00	44.06
1989	Oats	bu/acre	60.00	62.00	42.50	62.00	47.00	63.00	52.00	50.00	50.00	61.00	60.06
1990	Oats	bu/acre	45.00	50.00	56.60	63.00	55.50	56.31	47.00	50.00	55.00	50.00	45.15
1991	Oats	bu/acre	45.00	56.00	72.00	71.00	69.00	60.00	53.00	50.00	85.00	56.00	45.33
1992	Oats	bu/acre		55.00	55.00	74.40	72.00	64.00	58.00	40.00	55.00	72.00	
1993	Oats	bu/acre		65.00	59.00	86.00	86.00	82.75	72.50	66.00	77.00	65.00	
1994	Oats	bu/acre		45.00	46.00	84.00	77.00	70.00	50.00	62.00	62.00	55.00	
1995	Oats	bu/acre				94.12			91.67		73.64		
1996	Oats	bu/acre				80.69		46.67	44.23	70.00			
1997	Oats	bu/acre			51.82	85.42	71.43	75.00	72.22	80.00	64.29		
1998	Oats	bu/acre				88.89		71.67	75.00		50.00		
1999	Oats	bu/acre			55.00	94.29	70.00		78.00				
2000	Oats	bu/acre				108.89							
2001	Oats	bu/acre				76.67	67.00	75.00			96.67		

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	50.33
	1976	4	56.09
	1977	5	52.03
	1978	6	58.61
	1980	8	58.42
	1987	15	61.21

Derived $Y_{env(OATS)}$ polynomial equation: $y = -0.0365x^2 + 1.3607x + 48.798$ (see Figure 2.1.4.32.)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.69 Area-weighted crop yields - Upper Laramie subbasin

	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
Portion of total Upper Laramie subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)	0.9700	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Crop: other hay (not including alfalfa)											
Units: tons per acre											
Assumption: other hay production ongoing through entire 1972 - 2002 period in both counties located partially or entirely within the subbasin; estimated yield values (in shaded cells) incorporated where actual data are not available											**Upper Laramie subbasin - area-weighted yield**
National Agricultural Statistics Service (NASS) crop yield data	**County:**										
Year	**Crop**	**Unit**	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	
1972	Other hay	ton/acre	1.10	1.11	1.16	1.50	1.20	1.50	1.00	1.10	1.30	1.17	1.10
1973	Other hay	ton/acre	1.00	1.13	1.20	1.70	1.20	1.30	1.60	1.00	1.10	1.45	1.00
1974	Other hay	ton/acre	1.00	1.19	1.40	1.53	1.20	1.40	0.80	1.10	1.20	1.23	1.01
1975	Other hay	ton/acre	0.84	1.10	0.90	1.46	1.50	1.04	1.30	0.90	1.10	1.05	0.85
1976	Other hay	ton/acre	1.01	1.20	1.10	1.56	1.20	0.70	1.00	1.00	0.87	1.27	1.02
1977	Other hay	ton/acre	0.90	0.98	1.00	1.24	1.13	0.70	0.80	0.90	1.00	1.00	0.90
1978	Other hay	ton/acre	1.10	1.30	0.90	1.80	1.60	0.90	1.30	1.10	1.20	1.14	1.11
1979	Other hay	ton/acre	1.20	1.40	0.90	2.24	1.20	1.37	1.20	1.20	1.10	1.32	1.21
1980	Other hay	ton/acre	0.90	1.30	1.39	1.51	1.10	1.10	0.90	0.90	1.40	1.11	0.91
1981	Other hay	ton/acre	1.00	1.40	1.40	1.63	1.50	1.20	1.20	1.40	1.47	1.18	1.01
1982	Other hay	ton/acre	1.16	1.59	1.70	1.60	1.86	1.03	2.40	1.61	1.10	1.16	1.17
1983	Other hay	ton/acre	1.31	1.62	2.20	2.20	1.50	1.40	1.85	1.10	1.55	1.28	1.32
1984	Other hay	ton/acre	1.20	1.60	1.40	2.20	1.80	1.10	1.20	1.40	1.40	1.20	1.21
1985	Other hay	ton/acre	1.06	1.66	1.27	1.91	1.47	1.38	1.24	1.00	1.37	1.03	1.08
1986	Other hay	ton/acre	1.24	1.37	0.90	1.73	2.02	1.64	1.90	1.90	1.61	1.18	1.24
1987	Other hay	ton/acre	1.44	1.57	1.36	2.30	1.48	1.99	1.67	1.90	1.15	0.84	1.44
1988	Other hay	ton/acre	1.37	1.36	0.75	0.97	1.41	1.16	1.55	1.60	1.34	0.80	1.37
1989	Other hay	ton/acre	0.68	0.87	0.70	1.29	1.36	1.31	0.78	1.90	1.11	0.78	0.69
1990	Other hay	ton/acre	1.10	1.27	1.00	1.56	1.55	1.53	1.01	1.87	1.60	0.99	1.11
1991	Other hay	ton/acre	1.90	1.34	1.60	1.79	1.83	1.70	1.70	1.40	1.70	1.09	1.88
1992	Other hay	ton/acre	1.11	1.30	1.30	1.79	1.40	1.29	0.90	0.90	1.00	0.89	1.12
1993	Other hay	ton/acre	1.30	1.80	1.90	2.10	2.10	2.10	1.80	1.30	1.20	1.10	1.32
1994	Other hay	ton/acre	1.20	1.42	1.20	1.70	1.50	1.90	0.90	1.40	1.00	0.86	1.21
1995	Other hay	ton/acre	1.10	1.66	1.70	1.80	1.80	1.71	1.26	1.40	1.70	1.23	1.12
1996	Other hay	ton/acre	1.32	1.50	1.56	1.84	1.66	1.67	1.31	0.90	1.38	1.03	1.33
1997	Other hay	ton/acre	1.21	1.54	1.81	2.17	2.00	1.58	1.60	2.00	2.11	1.10	1.22
1998	Other hay	ton/acre	1.14	1.58	1.62	1.92	2.20	1.70	1.37	2.33	1.29	1.06	1.15
1999	Other hay	ton/acre	1.50	1.54	1.90	1.89	1.67	1.50	1.29	1.13	1.90	1.18	1.50
2000	Other hay	ton/acre	1.40	1.56	1.67	1.92	1.50	1.58	1.37	1.00	1.00	1.09	1.40
2001	Other hay	ton/acre	1.03	1.13	1.71	1.91	2.25	1.31	1.39	1.00	1.31	1.01	1.03

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	1.10
	1979	7	1.21
	1982	10	1.17
	1984	12	1.21
	1986	14	1.24
	1988	16	1.37
	1993	21	1.32
	1996	24	1.33
	2000	28	1.40

Derived $Y_{env(OTHER\ HAY)}$ polynomial equation: **$y = -0.00007x^2 + 0.0125x + 1.0844$ (see Figure 2.1.4.33.)**

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.69 Area-weighted crop yields - Upper Laramie subbasin

			Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
Portion of total Upper Laramie subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)			0.9700	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Crop: spring wheat													
Units: tons per acre													
Assumption: no significant spring wheat production in the subbasin													
National Agricultural Statistics Service (NASS) crop yield data			**County:**										
Year	**Crop**	**Unit**	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	**Upper Laramie subbasin - area-weighted yield**
1972	Spring wheat	bu/acre		40.00	35.00	47.00	35.00		36.00		34.00		
1973	Spring wheat	bu/acre		34.00	33.67	44.00	33.00		30.00	33.00	33.00		
1974	Spring wheat	bu/acre		36.00	35.33	50.00	33.00	41.00	28.00	35.00	37.00		
1975	Spring wheat	bu/acre		34.00	40.00	37.00	42.00	35.00	27.00	38.00	35.00		
1976	Spring wheat	bu/acre		35.00	43.00	45.00	40.00	35.00	27.00	39.00	33.00		
1977	Spring wheat	bu/acre		34.00	38.00	47.00	39.00	33.00	30.00	36.00	31.00		
1978	Spring wheat	bu/acre		36.00	32.00	55.00	34.00	33.00	32.00	34.00	32.00		
1979	Spring wheat	bu/acre		38.00	49.40	61.00	42.00	50.00	34.00	45.00	50.00		
1980	Spring wheat	bu/acre		32.00	35.00	41.67	32.00	34.00		33.00	34.00		
1981	Spring wheat	bu/acre		27.00	29.50	34.00	34.00	36.00	25.00	32.00	37.00		
1982	Spring wheat	bu/acre		38.00	37.25	50.00	52.00	58.00	32.00	52.33	56.67		
1983	Spring wheat	bu/acre		40.00	40.00	59.60	54.00	60.00		53.00	60.00		
1984	Spring wheat	bu/acre		60.00	44.00	63.00	55.00	50.00		53.00	45.00		
1985	Spring wheat	bu/acre		49.00	40.00	49.00	40.75	41.00		42.00	38.00		
1986	Spring wheat	bu/acre		44.00	50.00	40.00	63.00	57.50		55.00	53.00		
1987	Spring wheat	bu/acre		36.00	40.00	42.00	34.00	42.00		40.00	38.00		
1988	Spring wheat	bu/acre		37.00	41.00	52.00	55.00	52.00		44.00	41.00		
1989	Spring wheat	bu/acre		43.00	43.00	65.00	46.00	43.00		47.00	47.00		
1990	Spring wheat	bu/acre			30.00	56.00	50.00	47.00			30.00		
1991	Spring wheat	bu/acre						54.00	48.00	50.00			
1992	Spring wheat	bu/acre				65.00	40.00	73.00		36.00			
1993	Spring wheat	bu/acre				89.00		79.00		58.00			
1994	Spring wheat	bu/acre				54.17	41.00	45.00		44.17			
1995	Spring wheat	bu/acre				62.00	67.00	68.46					
1996	Spring wheat	bu/acre				66.67		60.00					
1997	Spring wheat	bu/acre					44.00	58.00			50.00		
1998	Spring wheat	bu/acre											
1999	Spring wheat	bu/acre											
2000	Spring wheat	bu/acre											
2001	Spring wheat	bu/acre											
	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated												
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted												

Table 2.1.4.69 Area-weighted crop yields - Upper Laramie subbasin

			Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
Portion of total Upper Laramie subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)			0.9700	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Crop: sugar beets													
Units: tons per acre													
Assumption: no sugar beet production in the subbasin													
National Agricultural Statistics Service (NASS) crop yield data			**County:**										**Upper Laramie subbasin - area-weighted yield**
Year	**Crop**	**Unit**	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	
1972	Sugar beets	ton/acre			14.70	19.90	22.93	15.30			22.80		
1973	Sugar beets	ton/acre			10.29	14.60	19.31	11.50			16.40		
1974	Sugar beets	ton/acre					18.46	15.86			17.76		
1975	Sugar beets	ton/acre					20.20	15.64			17.66		
1976	Sugar beets	ton/acre					20.90	17.81			17.85		
1977	Sugar beets	ton/acre					19.40	20.20			14.80		
1978	Sugar beets	ton/acre					18.61	14.60			16.70		
1979	Sugar beets	ton/acre					18.64	14.60			17.90		
1980	Sugar beets	ton/acre					21.80	20.20					
1981	Sugar beets	ton/acre					25.31	50.00			20.60		
1982	Sugar beets	ton/acre					19.40	22.00			18.30		
1983	Sugar beets	ton/acre					15.78	13.50			12.60		
1984	Sugar beets	ton/acre				13.70	20.87	11.20			15.60		
1985	Sugar beets	ton/acre				17.40	22.80	25.10			19.60		
1986	Sugar beets	ton/acre				18.90	23.41	23.60			19.90		
1987	Sugar beets	ton/acre				16.30	21.50	20.40			17.80		
1988	Sugar beets	ton/acre				19.20	22.00	23.25			19.57		
1989	Sugar beets	ton/acre				21.97	19.07	19.75			17.09		
1990	Sugar beets	ton/acre				20.19	21.00	13.53			19.34		
1991	Sugar beets	ton/acre				21.05	21.47	17.17			16.72		
1992	Sugar beets	ton/acre				20.88	16.97	17.53			16.53		
1993	Sugar beets	ton/acre				19.86	15.63	17.08			17.84		
1994	Sugar beets	ton/acre				16.93	20.56	20.25			20.49		
1995	Sugar beets	ton/acre				20.72	16.34	15.75			13.87		
1996	Sugar beets	ton/acre				20.02	16.88	17.81			17.95		
1997	Sugar beets	ton/acre				22.78	15.69	14.67			16.63		
1998	Sugar beets	ton/acre				21.07	19.37	18.70			17.80		
1999	Sugar beets	ton/acre				21.25	18.40	18.17			18.39		
2000	Sugar beets	ton/acre				21.54	18.70	15.41			19.49		
2001	Sugar beets	ton/acre				18.56	17.71	17.11			19.06		
	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated												
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted												

Table 2.1.4.69 Area-weighted crop yields - Upper Laramie subbasin

	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
Portion of total Upper Laramie subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)	0.9700	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Crop: winter wheat											
Units: bushels per acre											
Assumption: no significant winter wheat production in the subbasin since Carbon County comprises only about two percent of subbasin area											
National Agricultural Statistics Service (NASS) crop yield data	**County:**										**Upper Laramie subbasin - area-weighted yield**
Year	**Crop**	**Unit**	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**	
1972	Winter wheat	bu/acre		40.00	40.00	41.00	43.06	42.00		42.00	40.00		
1973	Winter wheat	bu/acre		39.00	38.00	37.00	38.54	37.00		38.00	38.00		
1974	Winter wheat	bu/acre		33.00	36.00	32.00	37.17	36.00		36.00	38.00		
1975	Winter wheat	bu/acre		36.00	38.00	32.00	39.54	36.00		37.00	37.00		
1976	Winter wheat	bu/acre		36.00	32.00	39.00	33.00	33.00		32.00	29.00		
1977	Winter wheat	bu/acre		34.00	25.00	38.00	23.00	26.00		22.00	22.50		
1978	Winter wheat	bu/acre		35.60	34.00		44.00	33.59		33.00	35.00		
1979	Winter wheat	bu/acre		30.00	23.00		35.00	42.00		38.00	34.56		
1980	Winter wheat	bu/acre		34.32	29.00		48.00	33.31		28.00	35.00		
1981	Winter wheat	bu/acre		33.98	32.00		41.00	40.41		33.50	35.00		
1982	Winter wheat	bu/acre		40.00	36.00		51.50	53.00		33.00	39.00		
1983	Winter wheat	bu/acre		38.00	38.00		53.00	54.00		44.00	40.00		
1984	Winter wheat	bu/acre		50.00	40.00	53.00	42.60	59.00		37.00	35.00		
1985	Winter wheat	bu/acre		45.00	35.00	52.00	34.00	38.73		35.00	33.00		
1986	Winter wheat	bu/acre		32.00	38.00	55.00	46.20	60.00		36.00	35.00		
1987	Winter wheat	bu/acre		35.00	37.00	51.00	39.00	56.00		41.00	40.00		
1988	Winter wheat	bu/acre		40.00	39.25	53.00	50.00	54.63		39.00	38.00		
1989	Winter wheat	bu/acre		35.00	36.00	36.00	43.00	46.98		33.00	41.00		
1990	Winter wheat	bu/acre		40.00	40.00	58.00	46.67	65.45		40.00	43.33		
1991	Winter wheat	bu/acre	47.00	40.00	32.50	68.33	55.91	50.32		50.25	45.67		
1992	Winter wheat	bu/acre		43.00	42.00	55.00	46.00	55.59		42.00	47.00		
1993	Winter wheat	bu/acre		50.00	50.00	60.50	52.50	56.96		54.00	55.00		
1994	Winter wheat	bu/acre		50.00		65.00	65.00	42.00		41.00	50.00		
1995	Winter wheat	bu/acre					59.00	80.00		75.00	82.00		
1996	Winter wheat	bu/acre					42.40	54.29			63.64		
1997	Winter wheat	bu/acre					61.21	80.25			56.25		
1998	Winter wheat	bu/acre					72.11	76.92					
1999	Winter wheat	bu/acre					65.00	79.20			60.00		
2000	Winter wheat	bu/acre					60.00	76.92					
2001	Winter wheat	bu/acre					73.33	72.00			50.00		
	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated												
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted												
Notes:													
(1) See Table 2.1.4.51.													

Figure 2.1.4.30.
Area-weighted annual alfalfa yields and Y_{env} polynomial trend line and equation
Upper Laramie subbasin

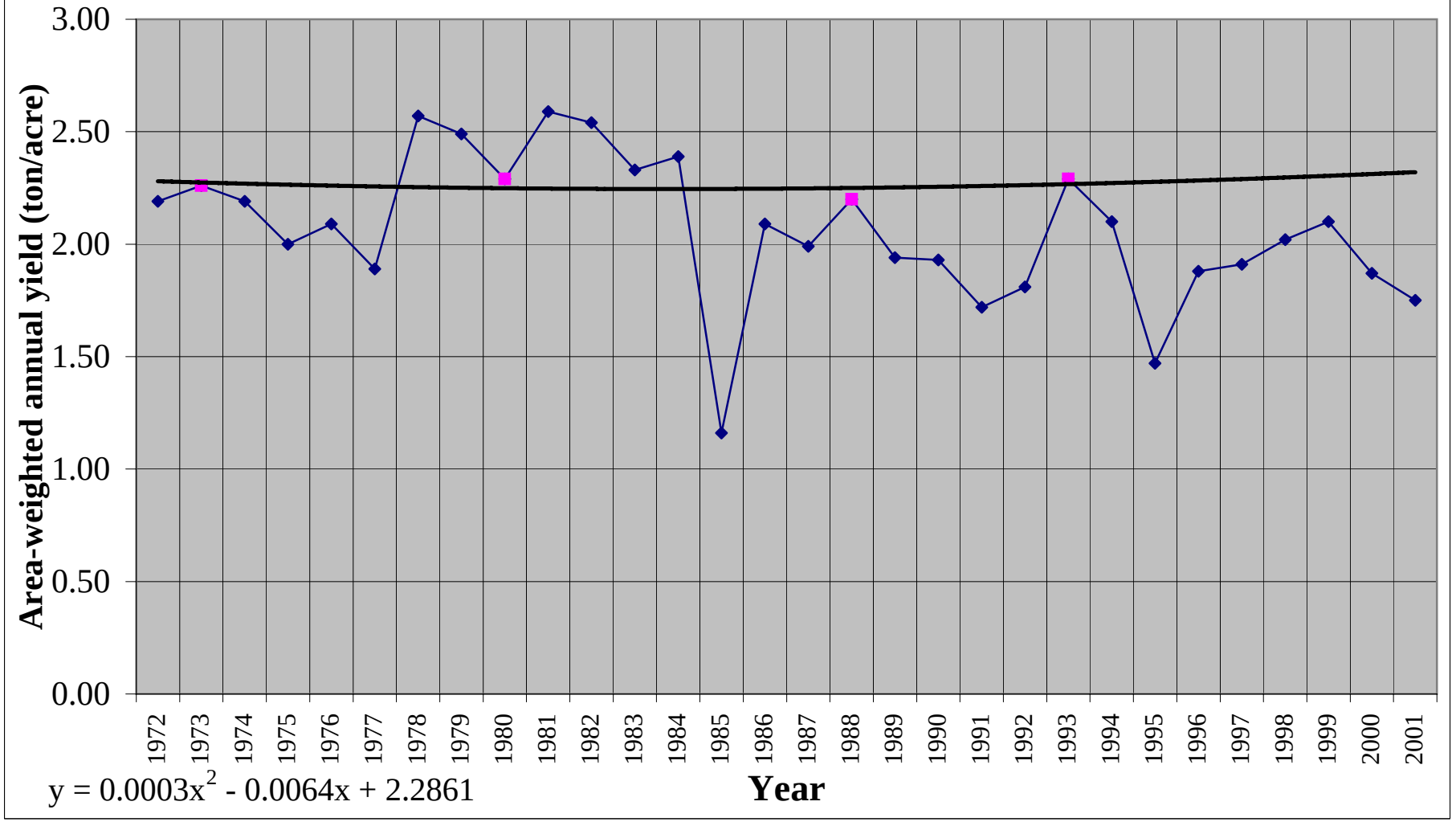


Figure 2.1.4.31.
Area-weighted annual barley yields and Y_{env} polynomial trend line and equation
Upper Laramie subbasin

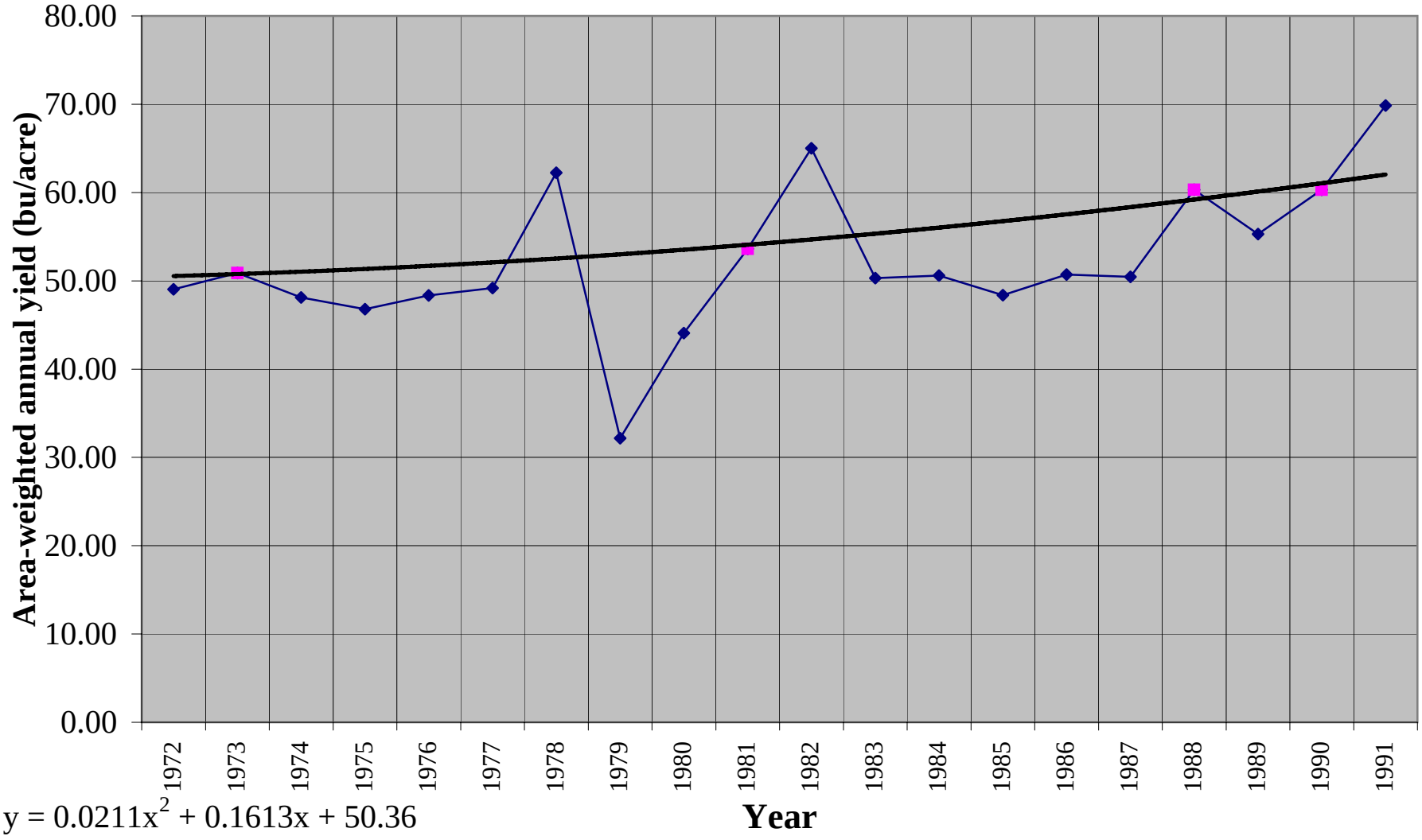


Figure 2.1.4.32.
Area-weighted annual oats yields and Y_{env} polynomial trend line and equation
Upper Laramie subbasin

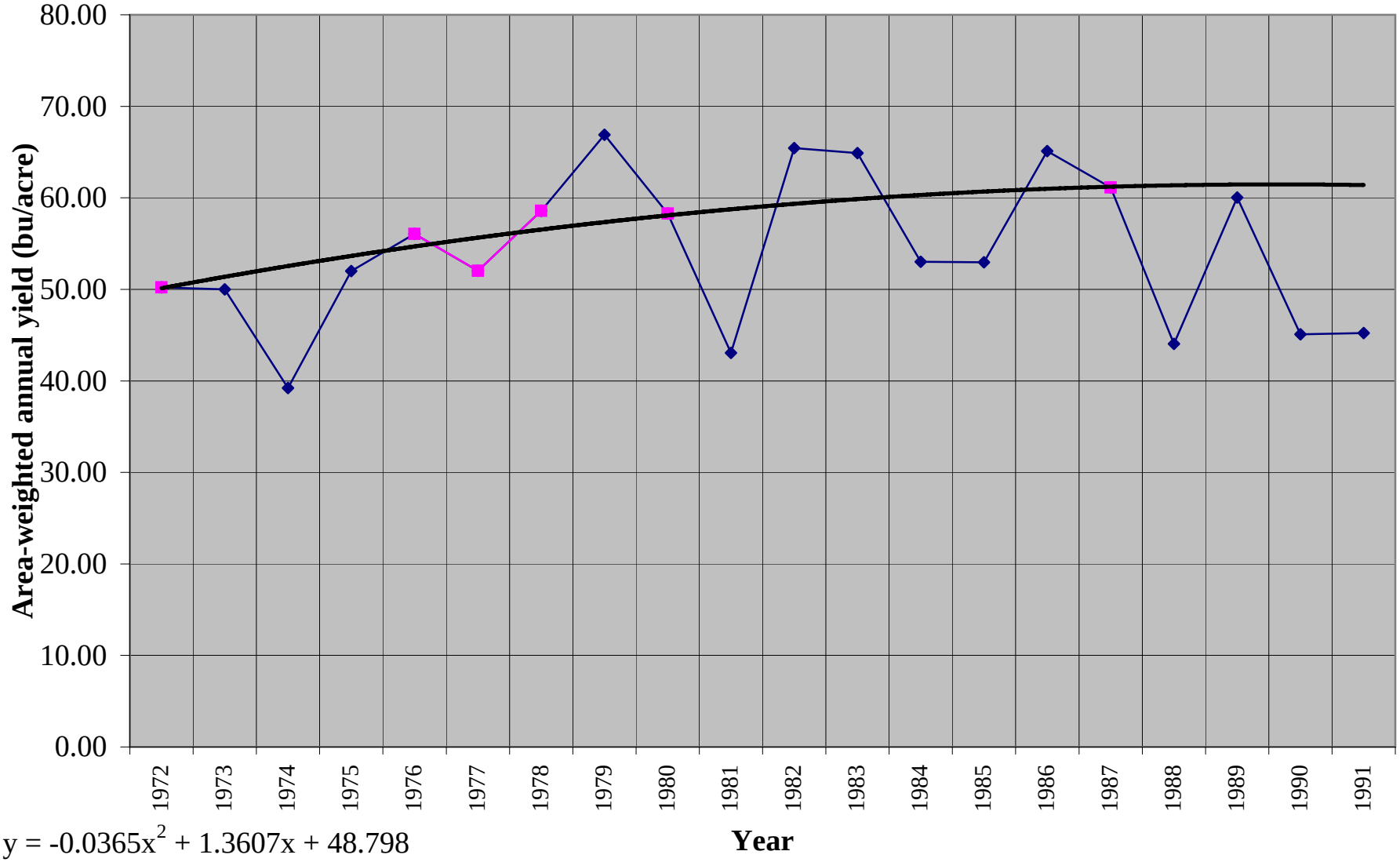
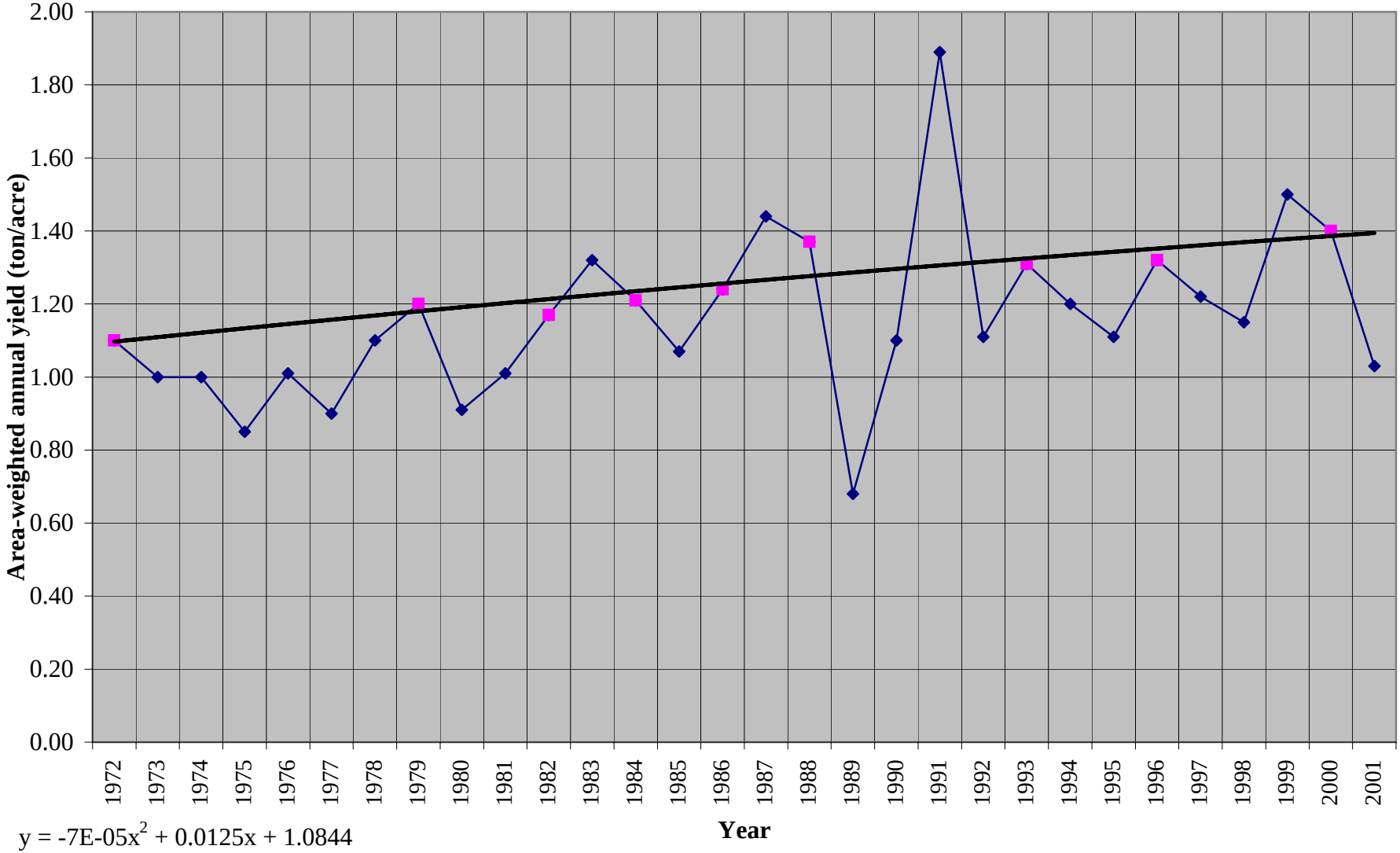


Figure 2.1.4.33.
Area-weighted annual other hay yields and Y_{env} polynomial trendline and equation
Upper Laramie subbasin



Derivation of adjusted, yield-based crop evapotranspiration in the Upper Laramie subbasin during high stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.69 and Figures 2.1.4.30 through 2.1.4.33 is summarized in Table 2.1.4.70.

Table 2.1.4.70 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Upper Larramie subbasin

1983						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.03	3.63	6.13	5.47	1.82	1.04
Average yield, Yi (bu/acre) (2)			50.30			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			54.69			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**0.96**	**3.38**	**5.70**	**5.09**	**1.69**	**0.97**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.03	3.63	6.13	5.47	1.82	1.04
Average yield, Yi (bu/acre) (2)			64.85			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.35			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.03**	**3.63**	**6.13**	**5.47**	**1.82**	**1.04**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.)					
	x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	0.73	1.89	5.88	4.94	2.56	1.98
Average yield, Yi (tons/acre) (2)			2.33			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.25			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**0.73**	**1.89**	**5.88**	**4.94**	**2.56**	**1.98**

Table 2.1.4.70 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Upper Larramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	0.85	2.15	5.28	4.04	3.00	2.32
Average yield, Yi (tons/acre) (2)			1.32			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.21			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**0.85**	**2.15**	**5.28**	**4.04**	**3.00**	**2.32**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.85	1.99	3.83	4.33	2.58	2.00
Average yield, Yi (2)			1.32			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.21			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**0.85**	**1.99**	**3.83**	**4.33**	**2.58**	**2.00**
1986						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.52	4.26	7.27	5.40	1.89	0.86
Average yield, Yi (bu/acre) (2)			50.70			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			56.75			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.38**	**3.87**	**6.60**	**4.90**	**1.71**	**0.78**

Table 2.1.4.70 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Upper Larramie subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.52	4.26	7.27	5.40	1.89	0.86
Average yield, Yi (bu/acre) (2)			65.18			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			60.69			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.52**	**4.26**	**7.27**	**5.40**	**1.89**	**0.86**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.08	2.22	6.97	4.89	2.66	1.63
Average yield, Yi (tons/acre) (2)			2.09			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.26			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.00**	**2.06**	**6.47**	**4.54**	**2.47**	**1.51**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.25	2.52	6.26	3.99	3.11	1.91
Average yield, Yi (tons/acre) (2)			1.24			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.25			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.24**	**2.50**	**6.21**	**3.96**	**3.09**	**1.90**

Table 2.1.4.70 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Upper Larramie subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.25	2.34	4.54	4.28	2.68	1.65
Average yield, Yi (2)			1.24			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.25			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.24**	**2.32**	**4.51**	**4.25**	**2.66**	**1.64**
1984						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.18	4.78	6.78	5.78	1.81	0.92
Average yield, Yi (bu/acre) (2)			50.60			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			55.33			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.09**	**4.42**	**6.28**	**5.35**	**1.68**	**0.85**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.18	4.78	6.78	5.78	1.81	0.92
Average yield, Yi (bu/acre) (2)			53.03			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.87			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.06**	**4.31**	**6.11**	**5.21**	**1.63**	**0.83**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.70 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	0.83	2.49	6.50	5.23	2.55	1.76
Average yield, Yi (tons/acre) (2)			2.39			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.25			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**0.83**	**2.49**	**6.50**	**5.23**	**2.55**	**1.76**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	0.97	2.82	5.84	4.27	2.99	2.06
Average yield, Yi (tons/acre) (2)			1.21			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.22			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**0.96**	**2.80**	**5.79**	**4.24**	**2.97**	**2.04**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.97	2.62	4.23	4.57	2.57	1.77
Average yield, Yi (2)			1.21			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.22			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.96**	**2.60**	**4.20**	**4.53**	**2.55**	**1.76**

Notes:

(1) See Table 2.1.4.43.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

Derivation of adjusted, yield-based crop evapotranspiration in the Upper Laramie subbasin during low stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.69 and Figures 2.1.4.30 through 2.1.4.33 is summarized in Table 2.1.4.71.

Table 2.1.4.71 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Upper Larramie subbasin

1992						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.)					
	x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.28	2.41	6.19	4.65	2.51	1.95
Average yield, Yi (tons/acre) (2)			1.81			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.28			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.03**	**1.94**	**4.97**	**3.74**	**2.02**	**1.57**

Table 2.1.4.71 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Upper Larramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.49	2.73	5.56	3.80	2.93	2.28
Average yield, Yi (tons/acre) (2)			1.12			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.31			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.28**	**2.35**	**4.79**	**3.28**	**2.53**	**1.97**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.49	2.54	4.03	4.07	2.53	1.97
Average yield, Yi (2)			1.12			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.31			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.28**	**2.19**	**3.47**	**3.51**	**2.18**	**1.70**
	2001					
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						

Table 2.1.4.71 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Upper Larramie subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.07	2.39	7.12	5.37	2.72	1.98
Average yield, Yi (tons/acre) (2)			1.75			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.35			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.81**	**1.81**	**5.39**	**4.06**	**2.06**	**1.50**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.24	2.71	6.39	4.38	3.19	2.31
Average yield, Yi (tons/acre) (2)			1.03			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.39			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**0.93**	**2.04**	**4.81**	**3.30**	**2.40**	**1.74**

Table 2.1.4.71 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Upper Larramie subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.24	2.51	4.63	4.69	2.75	2.00
Average yield, Yi (2)			1.03			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.39			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.93**	**1.89**	**3.49**	**3.53**	**2.07**	**1.51**
1987						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.77	4.45	7.01	5.66	1.78	1.01
Average yield, Yi (bu/acre) (2)			50.45			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			57.53			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.58**	**3.97**	**6.26**	**5.05**	**1.59**	**0.90**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.77	4.45	7.01	5.66	1.78	1.01
Average yield, Yi (bu/acre) (2)			61.21			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.00			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.77**	**4.45**	**7.01**	**5.66**	**1.78**	**1.01**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.71 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.25	2.32	6.73	5.12	2.51	1.93
Average yield, Yi (tons/acre) (2)			1.99			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.26			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.11**	**2.06**	**5.96**	**4.54**	**2.22**	**1.71**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.45	2.63	6.04	4.18	2.93	2.25
Average yield, Yi (tons/acre) (2)			1.44			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.26			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.45**	**2.63**	**6.04**	**4.18**	**2.93**	**2.25**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.45	2.44	4.38	4.48	2.53	1.94
Average yield, Yi (2)			1.44			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.26			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.45**	**2.44**	**4.38**	**4.48**	**2.53**	**1.94**
1981						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.77	3.66	7.09	5.56	1.79	1.01
Average yield, Yi (bu/acre) (2)			53.63			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			53.52			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.77**	**3.66**	**7.09**	**5.56**	**1.79**	**1.01**

Table 2.1.4.71 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Upper Larramie subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.77	3.66	7.09	5.56	1.79	1.01
Average yield, Yi (bu/acre) (2)			43.11			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.09			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.37**	**2.84**	**5.50**	**4.31**	**1.39**	**0.78**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.25	1.91	6.80	5.03	2.52	1.93
Average yield, Yi (tons/acre) (2)			2.59			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.25			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**1.25**	**1.91**	**6.80**	**5.03**	**2.52**	**1.93**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.46	2.16	6.11	4.11	2.95	2.26
Average yield, Yi (tons/acre) (2)			1.01			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.19			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.25**	**1.85**	**5.23**	**3.52**	**2.53**	**1.93**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.46	2.01	4.43	4.40	2.54	1.95
Average yield, Yi (2)			1.01			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.19			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.25**	**1.72**	**3.79**	**3.77**	**2.17**	**1.67**

Table 2.1.4.71 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Upper Larramie subbasin (cont)

1977						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.62	4.73	7.61	5.72	1.77	1.03
Average yield, Yi (bu/acre) (2)			49.18			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			51.69			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.55**	**4.53**	**7.29**	**5.48**	**1.70**	**0.99**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.62	4.73	7.61	5.72	1.77	1.03
Average yield, Yi (bu/acre) (2)			52.03			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			54.69			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.55**	**4.53**	**7.29**	**5.48**	**1.70**	**0.99**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.)					
	x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.15	2.46	7.30	5.18	2.50	1.96
Average yield, Yi (tons/acre) (2)			1.89			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.26			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.97**	**2.08**	**6.16**	**4.37**	**2.11**	**1.65**

Table 2.1.4.71 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Upper Larramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.33	2.79	6.56	4.23	2.92	2.29
Average yield, Yi (tons/acre) (2)			0.90			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.15			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.05**	**2.21**	**5.20**	**3.35**	**2.32**	**1.82**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.33	2.59	4.75	4.53	2.52	1.98
Average yield, Yi (2)			0.90			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.15			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.05**	**2.05**	**3.77**	**3.59**	**2.00**	**1.57**
1989						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.66	4.63	6.81	6.04	1.87	0.99
Average yield, Yi (bu/acre) (2)			55.30			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.20			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.56**	**4.36**	**6.42**	**5.69**	**1.76**	**0.93**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.66	4.63	6.81	6.04	1.87	0.99
Average yield, Yi (bu/acre) (2)			60.06			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.38			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.63**	**4.54**	**6.68**	**5.93**	**1.84**	**0.97**
Dry beans						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.71 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Upper Larramie subbasin (cont)

Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.17	2.41	6.53	5.46	2.64	1.89
Average yield, Yi (tons/acre) (2)			1.94			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.26			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.01**	**2.09**	**5.65**	**4.72**	**2.28**	**1.64**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.36	2.73	5.87	4.46	3.09	2.21
Average yield, Yi (tons/acre) (2)			0.69			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.28			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**0.76**	**1.53**	**3.29**	**2.50**	**1.73**	**1.24**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.36	2.54	4.25	4.78	2.67	1.90
Average yield, Yi (2)			0.69			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.28			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.76**	**1.42**	**2.38**	**2.68**	**1.50**	**1.07**

Notes:

(1) See Table 2.1.4.43.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

Derivation of adjusted, yield-based crop evapotranspiration in the Upper Laramie subbasin during normal or average stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.69 and Figures 2.1.4.30 through 2.1.4.33 is summarized in Table 2.1.4.72.

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin

1997						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	0.86	2.31	6.51	5.25	2.59	1.77
Average yield, Yi (tons/acre) (2)			1.91			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.31			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.72**	**1.93**	**5.44**	**4.38**	**2.16**	**1.48**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.00	2.62	5.85	4.29	3.03	2.07
Average yield, Yi (tons/acre) (2)			1.22			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.35			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**0.91**	**2.38**	**5.31**	**3.90**	**2.75**	**1.88**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.00	2.43	4.24	4.60	2.61	1.79
Average yield, Yi (2)			1.22			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.35			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.91**	**2.21**	**3.85**	**4.18**	**2.37**	**1.63**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1973						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.11	4.31	6.98	5.35	1.94	0.88
Average yield, Yi (bu/acre) (2)			50.88			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			50.54			
Adjusted maximum evapotranspiration, $ET_{BARLEY(HIGH)}$ (inches per month) (5)	**1.11**	**4.31**	**6.98**	**5.35**	**1.94**	**0.88**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.11	4.31	6.98	5.35	1.94	0.88
Average yield, Yi (bu/acre) (2)			50.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			50.12			
Adjusted maximum evapotranspiration, $ET_{OATS(HIGH)}$ (inches per month)	**1.11**	**4.30**	**6.97**	**5.34**	**1.94**	**0.88**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	0.79	2.24	6.69	4.84	2.73	1.68
Average yield, Yi (tons/acre) (2)			2.26			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.28			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.78**	**2.22**	**6.63**	**4.80**	**2.71**	**1.67**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	0.91	2.54	6.01	3.95	3.20	1.97
Average yield, Yi (tons/acre) (2)			1.00			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.10			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**0.83**	**2.32**	**5.49**	**3.61**	**2.92**	**1.80**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.91	2.36	4.36	4.23	2.76	1.70
Average yield, Yi (2)			1.00			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.10			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.83**	**2.16**	**3.98**	**3.86**	**2.52**	**1.55**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1979						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.50	4.08	6.88	5.86	1.76	1.07
Average yield, Yi (bu/acre) (2)			32.18			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			52.52			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**0.99**	**2.71**	**4.56**	**3.89**	**1.17**	**0.71**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.50	4.08	6.88	5.86	1.76	1.07
Average yield, Yi (bu/acre) (2)			66.85			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			56.53			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.50**	**4.08**	**6.88**	**5.86**	**1.76**	**1.07**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Corn						
Not cultivated in Upper Laramie subbasin						
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.06	2.13	6.60	5.30	2.48	2.04
Average yield, Yi (tons/acre) (2)			2.49			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.26			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**1.06**	**2.13**	**6.60**	**5.30**	**2.48**	**2.04**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.23	2.41	5.93	4.33	2.90	2.39
Average yield, Yi (tons/acre) (2)			1.21			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.17			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.23**	**2.41**	**5.93**	**4.33**	**2.90**	**2.39**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.23	2.24	4.30	4.64	2.50	2.06
Average yield, Yi (2)			1.21			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.17			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.23**	**2.24**	**4.30**	**4.64**	**2.50**	**2.06**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1996						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.04	2.27	6.90	5.12	2.66	1.72
Average yield, Yi (tons/acre) (2)			1.88			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.31			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.86**	**1.87**	**5.68**	**4.21**	**2.19**	**1.42**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.20	2.57	6.20	4.18	3.11	2.01
Average yield, Yi (tons/acre) (2)			1.33			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.34			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.19**	**2.55**	**6.16**	**4.15**	**3.09**	**2.00**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.20	2.39	4.49	4.48	2.68	1.73
Average yield, Yi (2)			1.33			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.34			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.19**	**2.37**	**4.46**	**4.45**	**2.66**	**1.72**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1982						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.44	3.98	6.36	5.56	1.87	0.85
Average yield, Yi (bu/acre) (2)			65.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			54.08			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.44**	**3.98**	**6.36**	**5.56**	**1.87**	**0.85**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.44	3.98	6.36	5.56	1.87	0.85
Average yield, Yi (bu/acre) (2)			65.40			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.76			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.44**	**3.98**	**6.36**	**5.56**	**1.87**	**0.85**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.02	2.07	6.10	5.03	2.64	1.63
Average yield, Yi (tons/acre) (2)			2.54			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.25			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**1.02**	**2.07**	**6.10**	**5.03**	**2.64**	**1.63**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.18	2.35	5.48	4.11	3.09	1.91
Average yield, Yi (tons/acre) (2)			1.17			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.20			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.15**	**2.29**	**5.35**	**4.01**	**3.02**	**1.86**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.18	2.18	3.97	4.40	2.67	1.64
Average yield, Yi (2)			1.17			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.20			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.15**	**2.13**	**3.88**	**4.30**	**2.61**	**1.60**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1995						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	0.96	1.77	5.90	4.76	2.91	1.68
Average yield, Yi (tons/acre) (2)			1.47			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.30			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.63**	**1.16**	**3.87**	**3.12**	**1.91**	**1.10**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.12	2.01	5.30	3.89	3.40	1.97
Average yield, Yi (tons/acre) (2)			1.12			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.33			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**0.95**	**1.71**	**4.50**	**3.31**	**2.89**	**1.67**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.12	1.87	3.84	4.16	2.93	1.70
Average yield, Yi (2)			1.12			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.33			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.95**	**1.59**	**3.26**	**3.53**	**2.49**	**1.44**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1978						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.54	3.96	7.05	5.98	1.89	1.02
Average yield, Yi (bu/acre) (2)			62.24			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			52.09			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.54**	**3.96**	**7.05**	**5.98**	**1.89**	**1.02**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.54	3.96	7.05	5.98	1.89	1.02
Average yield, Yi (bu/acre) (2)			58.61			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			55.65			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.54**	**3.96**	**7.05**	**5.98**	**1.89**	**1.02**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.09	2.06	6.76	5.41	2.66	1.95
Average yield, Yi (tons/acre) (2)			2.57			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.26			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**1.09**	**2.06**	**6.76**	**5.41**	**2.66**	**1.95**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.26	2.34	6.08	4.42	3.11	2.28
Average yield, Yi (tons/acre) (2)			1.11			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.16			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.21**	**2.24**	**5.83**	**4.24**	**2.98**	**2.19**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.26	2.17	4.40	4.74	2.68	1.97
Average yield, Yi (2)			1.11			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.16			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.21**	**2.08**	**4.22**	**4.55**	**2.57**	**1.89**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1980						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.39	4.12	7.60	5.88	1.90	1.00
Average yield, Yi (bu/acre) (2)			44.09			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			53.00			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.19**	**3.52**	**6.49**	**5.02**	**1.62**	**0.85**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.39	4.12	7.60	5.88	1.90	1.00
Average yield, Yi (bu/acre) (2)			58.42			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			57.35			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.39**	**4.12**	**7.60**	**5.88**	**1.90**	**1.00**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	0.98	2.15	7.29	5.32	2.68	1.90
Average yield, Yi (tons/acre) (2)			2.29			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.25			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**0.98**	**2.15**	**7.29**	**5.32**	**2.68**	**1.90**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.14	2.43	6.55	4.34	3.13	2.22
Average yield, Yi (tons/acre) (2)			0.91			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.18			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**0.89**	**1.90**	**5.12**	**3.39**	**2.45**	**1.74**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.14	2.26	4.75	4.65	2.70	1.92
Average yield, Yi (2)			0.91			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.18			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.89**	**1.77**	**3.71**	**3.64**	**2.11**	**1.50**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1974						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.40	4.89	7.44	5.88	1.95	0.95
Average yield, Yi (bu/acre) (2)			48.12			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			50.77			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.34**	**4.67**	**7.10**	**5.61**	**1.86**	**0.91**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.40	4.89	7.44	5.88	1.95	0.95
Average yield, Yi (bu/acre) (2)			39.33			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			51.37			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.11**	**3.89**	**5.92**	**4.68**	**1.55**	**0.76**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	0.99	2.55	7.14	5.32	2.74	1.81
Average yield, Yi (tons/acre) (2)			2.19			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.27			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.96**	**2.46**	**6.90**	**5.14**	**2.65**	**1.75**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.15	2.89	6.41	4.34	3.21	2.11
Average yield, Yi (tons/acre) (2)			1.01			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.11			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.05**	**2.64**	**5.86**	**3.97**	**2.93**	**1.93**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.15	2.68	4.65	4.65	2.77	1.82
Average yield, Yi (2)			1.01			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.11			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.05**	**2.45**	**4.25**	**4.25**	**2.53**	**1.66**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1999						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	0.87	2.11	6.28	4.99	2.50	1.71
Average yield, Yi (tons/acre) (2)			2.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.33			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.79**	**1.91**	**5.69**	**4.52**	**2.26**	**1.55**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.01	2.39	5.64	4.08	2.93	2.00
Average yield, Yi (tons/acre) (2)			1.50			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.37			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.01**	**2.39**	**5.64**	**4.08**	**2.93**	**2.00**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.01	2.22	4.09	4.37	2.53	1.72
Average yield, Yi (2)			1.50			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.37			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.01**	**2.22**	**4.09**	**4.37**	**2.53**	**1.72**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1993						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	0.99	2.34	5.95	4.86	2.48	1.72
Average yield, Yi (tons/acre) (2)			2.29			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.28			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**0.99**	**2.34**	**5.95**	**4.86**	**2.48**	**1.72**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.15	2.65	5.35	3.97	2.90	2.01
Average yield, Yi (tons/acre) (2)			1.32			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.32			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.15**	**2.65**	**5.35**	**3.97**	**2.90**	**2.01**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.15	2.47	3.87	4.25	2.50	1.73
Average yield, Yi (2)			1.32			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.32			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.15**	**2.47**	**3.87**	**4.25**	**2.50**	**1.73**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1985						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.66	4.69	6.80	5.49	2.01	0.86
Average yield, Yi (bu/acre) (2)			48.38			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			56.02			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.46**	**4.13**	**5.99**	**4.84**	**1.77**	**0.76**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.66	4.69	6.80	5.49	2.01	0.86
Average yield, Yi (bu/acre) (2)			52.94			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			60.32			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.48**	**4.19**	**6.08**	**4.91**	**1.80**	**0.77**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.17	2.44	6.52	4.97	2.83	1.64
Average yield, Yi (tons/acre) (2)			1.16			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.25			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.63**	**1.31**	**3.51**	**2.68**	**1.52**	**0.88**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.36	2.77	5.86	4.06	3.31	1.92
Average yield, Yi (tons/acre) (2)			1.08			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.24			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.19**	**2.43**	**5.14**	**3.56**	**2.90**	**1.68**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.36	2.57	4.25	4.35	2.85	1.66
Average yield, Yi (2)			1.08			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.24			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.19**	**2.25**	**3.73**	**3.82**	**2.50**	**1.46**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1988						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.70	4.53	7.68	6.02	2.00	0.96
Average yield, Yi (bu/acre) (2)			60.30			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.34			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.70**	**4.53**	**7.68**	**6.02**	**2.00**	**0.96**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.70	4.53	7.68	6.02	2.00	0.96
Average yield, Yi (bu/acre) (2)			44.06			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.23			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.29**	**3.43**	**5.81**	**4.55**	**1.51**	**0.73**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.20	2.36	7.37	5.45	2.82	1.84
Average yield, Yi (tons/acre) (2)			2.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.26			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.17**	**2.30**	**7.18**	**5.31**	**2.75**	**1.79**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.39	2.68	6.62	4.45	3.30	2.15
Average yield, Yi (tons/acre) (2)			1.37			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.27			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.39**	**2.68**	**6.62**	**4.45**	**3.30**	**2.15**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.39	2.49	4.80	4.77	2.85	1.86
Average yield, Yi (2)			1.37			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.27			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.39**	**2.49**	**4.80**	**4.77**	**2.85**	**1.86**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1975						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.33	3.97	6.66	5.80	1.98	0.99
Average yield, Yi (bu/acre) (2)			46.79			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			51.03			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.23**	**3.68**	**6.18**	**5.38**	**1.84**	**0.92**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.33	3.97	6.66	5.80	1.98	0.99
Average yield, Yi (bu/acre) (2)			52.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			52.55			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.32**	**3.93**	**6.60**	**5.75**	**1.96**	**0.98**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	0.94	2.07	6.38	5.25	2.80	1.89
Average yield, Yi (tons/acre) (2)			2.00			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.27			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.83**	**1.84**	**5.66**	**4.66**	**2.48**	**1.68**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.09	2.34	5.74	4.29	3.27	2.21
Average yield, Yi (tons/acre) (2)			0.85			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.12			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**0.84**	**1.80**	**4.42**	**3.31**	**2.52**	**1.70**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.09	2.18	4.16	4.60	2.82	1.91
Average yield, Yi (2)			0.85			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.12			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.84**	**1.68**	**3.20**	**3.54**	**2.17**	**1.47**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1998						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.06	2.49	5.72	4.95	2.70	1.98
Average yield, Yi (tons/acre) (2)			2.02			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.32			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.93**	**2.18**	**5.02**	**4.34**	**2.37**	**1.74**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.23	2.83	5.14	4.05	3.15	2.31
Average yield, Yi (tons/acre) (2)			1.15			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.36			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.05**	**2.41**	**4.38**	**3.45**	**2.69**	**1.97**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.23	2.63	3.73	4.33	2.72	2.00
Average yield, Yi (2)			1.15			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.36			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.05**	**2.24**	**3.18**	**3.69**	**2.32**	**1.71**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1972						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.59	4.51	7.00	5.66	1.90	0.95
Average yield, Yi (bu/acre) (2)			49.03			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			50.36			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.55**	**4.41**	**6.84**	**5.53**	**1.86**	**0.93**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.59	4.51	7.00	5.66	1.90	0.95
Average yield, Yi (bu/acre) (2)			50.33			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			48.80			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.59**	**4.51**	**7.00**	**5.66**	**1.90**	**0.95**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.12	2.35	6.72	5.12	2.67	1.81
Average yield, Yi (tons/acre) (2)			2.19			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.29			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.07**	**2.25**	**6.44**	**4.91**	**2.56**	**1.73**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.30	2.67	6.03	4.18	3.12	2.12
Average yield, Yi (tons/acre) (2)			1.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.08			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.30**	**2.67**	**6.03**	**4.18**	**3.12**	**2.12**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.30	2.48	4.37	4.48	2.69	1.83
Average yield, Yi (2)			1.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.08			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.30**	**2.48**	**4.37**	**4.48**	**2.69**	**1.83**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1976						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.55	4.61	7.17	6.17	1.96	1.02
Average yield, Yi (bu/acre) (2)			48.36			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			51.34			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.47**	**4.38**	**6.81**	**5.86**	**1.86**	**0.97**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.55	4.61	7.17	6.17	1.96	1.02
Average yield, Yi (bu/acre) (2)			56.09			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			53.66			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.55**	**4.61**	**7.17**	**6.17**	**1.96**	**1.02**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.10	2.40	6.88	5.58	2.77	1.95
Average yield, Yi (tons/acre) (2)			2.09			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.27			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.02**	**2.22**	**6.36**	**5.16**	**2.56**	**1.80**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.27	2.72	6.18	4.56	3.24	2.28
Average yield, Yi (tons/acre) (2)			1.02			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.13			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.15**	**2.47**	**5.61**	**4.14**	**2.94**	**2.07**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.27	2.53	4.48	4.89	2.79	1.97
Average yield, Yi (2)			1.02			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.13			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.15**	**2.30**	**4.06**	**4.44**	**2.53**	**1.79**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1990						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.59	4.36	7.56	5.22	1.89	1.00
Average yield, Yi (bu/acre) (2)			60.30			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			60.10			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.59**	**4.36**	**7.56**	**5.22**	**1.89**	**1.00**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.59	4.36	7.56	5.22	1.89	1.00
Average yield, Yi (bu/acre) (2)			45.15			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.46			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.22**	**3.35**	**5.82**	**4.02**	**1.45**	**0.77**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.12	2.27	7.25	4.73	2.66	1.91
Average yield, Yi (tons/acre) (2)			1.93			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.27			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.96**	**1.95**	**6.22**	**4.06**	**2.28**	**1.64**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.30	2.57	6.52	3.86	3.11	2.23
Average yield, Yi (tons/acre) (2)			1.11			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.29			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.13**	**2.23**	**5.65**	**3.35**	**2.70**	**1.93**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.30	2.39	4.72	4.14	2.68	1.92
Average yield, Yi (2)			1.11			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.29			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.13**	**2.07**	**4.09**	**3.59**	**2.32**	**1.66**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

2000						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.20	2.50	6.74	5.39	2.80	1.90
Average yield, Yi (tons/acre) (2)			1.87			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.34			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.97**	**2.02**	**5.45**	**4.36**	**2.26**	**1.54**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.39	2.83	6.05	4.40	3.27	2.22
Average yield, Yi (tons/acre) (2)			1.40			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.38			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.39**	**2.83**	**6.05**	**4.40**	**3.27**	**2.22**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.39	2.63	4.39	4.72	2.82	1.91
Average yield, Yi (2)			1.40			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.38			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.39**	**2.63**	**4.39**	**4.72**	**2.82**	**1.91**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1991						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.)					
	x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.42	4.50	6.87	5.40	1.82	0.96
Average yield, Yi (bu/acre) (2)			69.85			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.04			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.42**	**4.50**	**6.87**	**5.40**	**1.82**	**0.96**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.)					
	x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.42	4.50	6.87	5.40	1.82	0.96
Average yield, Yi (bu/acre) (2)			45.33			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.47			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.10**	**3.47**	**5.30**	**4.17**	**1.40**	**0.74**
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.00	2.35	6.59	4.89	2.57	1.84
Average yield, Yi (tons/acre) (2)			1.72			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.27			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.77**	**1.81**	**5.07**	**3.76**	**1.98**	**1.42**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.16	2.66	5.92	3.99	3.01	2.15
Average yield, Yi (tons/acre) (2)			1.88			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.30			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.16**	**2.66**	**5.92**	**3.99**	**3.01**	**2.15**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.16	2.47	4.29	4.28	2.59	1.86
Average yield, Yi (2)			1.88			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.30			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.16**	**2.47**	**4.29**	**4.28**	**2.59**	**1.86**

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

1994						
Winter wheat						
Not cultivated in Upper Laramie subbasin						
Spring wheat						
Not cultivated in Upper Laramie subbasin						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0211x2 + 0.1613x + 50.36 (see Figure 2.1.4.31.) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)						
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0365x2 + 1.3607x + 48.798 (see Figure 2.1.4.32.) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)						
Dry beans						
Not cultivated in Upper Laramie subbasin						
Sugar beets						
Not cultivated in Upper Laramie subbasin						
Corn						
Not cultivated in Upper Laramie subbasin						

Table 2.1.4.72 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Upper Larramie subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0003x2 - 0.0064x + 2.2861 (see Figure 2.1.4.30.) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	1.06	2.53	7.29	5.15	2.73	1.95
Average yield, Yi (tons/acre) (2)			2.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			2.29			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**0.98**	**2.33**	**6.71**	**4.74**	**2.51**	**1.80**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.23	2.87	6.55	4.20	3.20	2.28
Average yield, Yi (tons/acre) (2)			1.21			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.33			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.12**	**2.62**	**5.99**	**3.84**	**2.93**	**2.08**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.00007x2 + 0.0125x + 1.0844 (see Figure 2.1.4.33.) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.23	2.67	4.75	4.50	2.76	1.96
Average yield, Yi (2)			1.21			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.33			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.12**	**2.44**	**4.34**	**4.11**	**2.52**	**1.79**

Notes:
(1) See Table 2.1.4.43.
(2) See Table 2.1.4.54. for area-weighted annual yields
(3) See Table 2.1.4.53.
(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for
(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

A summary of adjusted, yield-based crop evapotranspiration values during high, low, and normal or average stream flow years–derivation of which is shown in Tables 2.1.4.70, 2.1.4.71, and 2.1.4.72–is included in Table 2.1.4.73.

Table 2.1.4.73 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Upper Laramie subbasin

High stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1983	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	0.96	3.38	5.70	5.09	1.69	0.97	**17.79**
	oats	1.03	3.63	6.13	5.47	1.82	1.04	**19.12**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.73	1.89	5.88	4.94	2.56	1.98	**17.98**
	other hay	0.85	2.15	5.28	4.04	3.00	2.32	**17.64**
	irrigated pasture	0.85	1.99	3.83	4.33	2.58	2.00	**15.58**
1986	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.38	3.87	6.60	4.90	1.71	0.78	**19.24**
	oats	1.52	4.26	7.27	5.40	1.89	0.86	**21.20**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.00	2.06	6.47	4.54	2.47	1.51	**18.05**
	other hay	1.24	2.50	6.21	3.96	3.09	1.90	**18.90**
	irrigated pasture	1.24	2.32	4.51	4.25	2.66	1.64	**16.62**
1984	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.09	4.42	6.28	5.35	1.68	0.85	**19.67**
	oats	1.06	4.31	6.11	5.21	1.63	0.83	**19.15**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.83	2.49	6.50	5.23	2.55	1.76	**19.36**
	other hay	0.96	2.80	5.79	4.24	2.97	2.04	**18.80**
	irrigated pasture	0.96	2.60	4.20	4.53	2.55	1.76	**16.60**
Low stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	
1992	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats			Not cultivated				
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.03	1.94	4.97	3.74	2.02	1.57	**15.27**
	other hay	1.28	2.35	4.79	3.28	2.53	1.97	**16.20**
	irrigated pasture	1.28	2.19	3.47	3.51	2.18	1.70	**14.33**

Table 2.1.4.73 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Upper Laramie subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	
2001	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats			Not cultivated				
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.81	1.81	5.39	4.06	2.06	1.50	**15.63**
	other hay	0.93	2.04	4.81	3.30	2.40	1.74	**15.22**
	irrigated pasture	0.93	1.89	3.49	3.53	2.07	1.51	**13.42**
1987	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.58	3.97	6.26	5.05	1.59	0.90	**19.35**
	oats	1.77	4.45	7.01	5.66	1.78	1.01	**21.68**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.11	2.06	5.96	4.54	2.22	1.71	**17.60**
	other hay	1.45	2.63	6.04	4.18	2.93	2.25	**19.48**
	irrigated pasture	1.45	2.44	4.38	4.48	2.53	1.94	**17.22**
1981	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.77	3.66	7.09	5.56	1.79	1.01	**20.88**
	oats	1.37	2.84	5.50	4.31	1.39	0.78	**16.19**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.25	1.91	6.80	5.03	2.52	1.93	**19.44**
	other hay	1.25	1.85	5.23	3.52	2.53	1.93	**16.31**
	irrigated pasture	1.25	1.72	3.79	3.77	2.17	1.67	**14.37**
1977	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.55	4.53	7.29	5.48	1.70	0.99	**21.54**
	oats	1.55	4.53	7.29	5.48	1.70	0.99	**21.54**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.97	2.08	6.16	4.37	2.11	1.65	**17.34**
	other hay	1.05	2.21	5.20	3.35	2.32	1.82	**15.95**
	irrigated pasture	1.05	2.05	3.77	3.59	2.00	1.57	**14.03**

Table 2.1.4.73 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Upper Laramie subbasin (cont)

Year	Crop	"Yield adjusted" evapotranspiration, ET_C (inches, 1) Apr	May	Jun	Jul	Aug	Sep	
1989	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.56	4.36	6.42	5.69	1.76	0.93	**20.72**
	oats	1.63	4.54	6.68	5.93	1.84	0.97	**21.59**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.01	2.09	5.65	4.72	2.28	1.64	**17.39**
	other hay	0.76	1.53	3.29	2.50	1.73	1.24	**11.05**
	irrigated pasture	0.76	1.42	2.38	2.68	1.50	1.07	**9.81**
Normal or average stream flow years								
Year	Crop	"Yield adjusted" evapotranspiration, ET_C (inches, 1) Apr	May	Jun	Jul	Aug	Sep	
1997	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats			Not cultivated				
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.72	1.93	5.44	4.38	2.16	1.48	**16.11**
	other hay	0.91	2.38	5.31	3.90	2.75	1.88	**17.13**
	irrigated pasture	0.91	2.21	3.85	4.18	2.37	1.63	**15.15**
1973	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.11	4.31	6.98	5.35	1.94	0.88	**20.57**
	oats	1.11	4.30	6.97	5.34	1.94	0.88	**20.54**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.78	2.22	6.63	4.80	2.71	1.67	**18.81**
	other hay	0.83	2.32	5.49	3.61	2.92	1.80	**16.97**
	irrigated pasture	0.83	2.16	3.98	3.86	2.52	1.55	**14.90**
1979	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	0.99	2.71	4.56	3.89	1.17	0.71	**14.03**
	oats	1.50	4.08	6.88	5.86	1.76	1.07	**21.15**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.06	2.13	6.60	5.30	2.48	2.04	**19.61**
	other hay	1.23	2.41	5.93	4.33	2.90	2.39	**19.19**
	irrigated pasture	1.23	2.24	4.30	4.64	2.50	2.06	**16.97**

Table 2.1.4.73 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Upper Laramie subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	
1996	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats			Not cultivated				
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.86	1.87	5.68	4.21	2.19	1.42	**16.23**
	other hay	1.19	2.55	6.16	4.15	3.09	2.00	**19.14**
	irrigated pasture	1.19	2.37	4.46	4.45	2.66	1.72	**16.85**
1982	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.44	3.98	6.36	5.56	1.87	0.85	**20.06**
	oats	1.44	3.98	6.36	5.56	1.87	0.85	**20.06**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.02	2.07	6.10	5.03	2.64	1.63	**18.49**
	other hay	1.15	2.29	5.35	4.01	3.02	1.86	**17.68**
	irrigated pasture	1.15	2.13	3.88	4.30	2.61	1.60	**15.67**
1995	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats			Not cultivated				
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.63	1.16	3.87	3.12	1.91	1.10	**11.79**
	other hay	0.95	1.71	4.50	3.31	2.89	1.67	**15.03**
	irrigated pasture	0.95	1.59	3.26	3.53	2.49	1.44	**13.26**
1978	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.54	3.96	7.05	5.98	1.89	1.02	**21.44**
	oats	1.54	3.96	7.05	5.98	1.89	1.02	**21.44**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.09	2.06	6.76	5.41	2.66	1.95	**19.93**
	other hay	1.21	2.24	5.83	4.24	2.98	2.19	**18.69**
	irrigated pasture	1.21	2.08	4.22	4.55	2.57	1.89	**16.52**

Table 2.1.4.73 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Upper Laramie subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	
1980	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.19	3.52	6.49	5.02	1.62	0.85	**18.69**
	oats	1.39	4.12	7.60	5.88	1.90	1.00	**21.89**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.98	2.15	7.29	5.32	2.68	1.90	**20.32**
	other hay	0.89	1.90	5.12	3.39	2.45	1.74	**15.49**
	irrigated pasture	0.89	1.77	3.71	3.64	2.11	1.50	**13.62**
1974	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.34	4.67	7.10	5.61	1.86	0.91	**21.49**
	oats	1.11	3.89	5.92	4.68	1.55	0.76	**17.91**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.96	2.46	6.90	5.14	2.65	1.75	**19.86**
	other hay	1.05	2.64	5.86	3.97	2.93	1.93	**18.38**
	irrigated pasture	1.05	2.45	4.25	4.25	2.53	1.66	**16.19**
1999	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats			Not cultivated				
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.79	1.91	5.69	4.52	2.26	1.55	**16.72**
	other hay	1.01	2.39	5.64	4.08	2.93	2.00	**18.05**
	irrigated pasture	1.01	2.22	4.09	4.37	2.53	1.72	**15.94**
1993	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats			Not cultivated				
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.99	2.34	5.95	4.86	2.48	1.72	**18.34**
	other hay	1.15	2.65	5.35	3.97	2.90	2.01	**18.03**
	irrigated pasture	1.15	2.47	3.87	4.25	2.50	1.73	**15.97**

Table 2.1.4.73 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Upper Laramie subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	
1985	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.46	4.13	5.99	4.84	1.77	0.76	**18.95**
	oats	1.48	4.19	6.08	4.91	1.80	0.77	**19.23**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.63	1.31	3.51	2.68	1.52	0.88	**10.53**
	other hay	1.19	2.43	5.14	3.56	2.90	1.68	**16.90**
	irrigated pasture	1.19	2.25	3.73	3.82	2.50	1.46	**14.95**
1988	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.70	4.53	7.68	6.02	2.00	0.96	**22.89**
	oats	1.29	3.43	5.81	4.55	1.51	0.73	**17.32**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.17	2.30	7.18	5.31	2.75	1.79	**20.50**
	other hay	1.39	2.68	6.62	4.45	3.30	2.15	**20.59**
	irrigated pasture	1.39	2.49	4.80	4.77	2.85	1.86	**18.16**
1975	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.23	3.68	6.18	5.38	1.84	0.92	**19.23**
	oats	1.32	3.93	6.60	5.75	1.96	0.98	**20.54**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.83	1.84	5.66	4.66	2.48	1.68	**17.15**
	other hay	0.84	1.80	4.42	3.31	2.52	1.70	**14.59**
	irrigated pasture	0.84	1.68	3.20	3.54	2.17	1.47	**12.90**
1998	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats			Not cultivated				
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.93	2.18	5.02	4.34	2.37	1.74	**16.58**
	other hay	1.05	2.41	4.38	3.45	2.69	1.97	**15.95**
	irrigated pasture	1.05	2.24	3.18	3.69	2.32	1.71	**14.19**

Table 2.1.4.73 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Upper Laramie subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	
1972	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.55	4.41	6.84	5.53	1.86	0.93	**21.12**
	oats	1.59	4.51	7.00	5.66	1.90	0.95	**21.61**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.07	2.25	6.44	4.91	2.56	1.73	**18.96**
	other hay	1.30	2.67	6.03	4.18	3.12	2.12	**19.42**
	irrigated pasture	1.30	2.48	4.37	4.48	2.69	1.83	**17.15**
1976	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.47	4.38	6.81	5.86	1.86	0.97	**21.35**
	oats	1.55	4.61	7.17	6.17	1.96	1.02	**22.48**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	1.02	2.22	6.36	5.16	2.56	1.80	**19.12**
	other hay	1.15	2.47	5.61	4.14	2.94	2.07	**18.38**
	irrigated pasture	1.15	2.30	4.06	4.44	2.53	1.79	**16.27**
1990	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.59	4.36	7.56	5.22	1.89	1.00	**21.62**
	oats	1.22	3.35	5.82	4.02	1.45	0.77	**16.63**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.96	1.95	6.22	4.06	2.28	1.64	**17.11**
	other hay	1.13	2.23	5.65	3.35	2.70	1.93	**16.99**
	irrigated pasture	1.13	2.07	4.09	3.59	2.32	1.66	**14.86**
2000	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats			Not cultivated				
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.97	2.02	5.45	4.36	2.26	1.54	**16.60**
	other hay	1.39	2.83	6.05	4.40	3.27	2.22	**20.16**
	irrigated pasture	1.39	2.63	4.39	4.72	2.82	1.91	**17.86**

Table 2.1.4.73 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Upper Laramie subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	
1991	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley	1.42	4.50	6.87	5.40	1.82	0.96	**20.97**
	oats	1.10	3.47	5.30	4.17	1.40	0.74	**16.18**
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.77	1.81	5.07	3.76	1.98	1.42	**14.81**
	other hay	1.16	2.66	5.92	3.99	3.01	2.15	**18.89**
	irrigated pasture	1.16	2.47	4.29	4.28	2.59	1.86	**16.65**
1994	winter wheat			Not cultivated				
	spring wheat			Not cultivated				
	barley			Not cultivated				
	oats			Not cultivated				
	dry beans			Not cultivated				
	sugar beets			Not cultivated				
	corn			Not cultivated				
	alfalfa	0.98	2.33	6.71	4.74	2.51	1.80	**19.07**
	other hay	1.12	2.62	5.99	3.84	2.93	2.08	**18.58**
	irrigated pasture	1.12	2.44	4.34	4.11	2.52	1.79	**16.32**

Notes:
(1) See Tables 2.1.4.70, 2.1.4.71, and 2.1.4.72.

2.1.4.7.8 Adjusted Crop Evapotranspiration, ET_c – Lower Laramie Subbasin

Annual crop yields and derived area-weighted annual crop yields for each crop during the 1972 through 2001 study period in the Lower Laramie subbasin are shown in Table 2.1.4.74. As shown on this table, most of the Lower Laramie subbasin lies within Platte County, with the remainder of the subbasin lying within Albany, Goshen, and Laramie Counties. These four counties and the portions of the Lower Laramie subbasin that they comprise are shown at the top of Table 2.1.4.74. The assumptions, based on tabulated NASS yield data, underlying derivation of the area-weighted yields for each crop are included near the top of each tabulation of individual crop yields. Examples of these assumptions in the Lower Laramie subbasin are that spring wheat has not been irrigated and harvested in the subbasin since 1997 and that all other crops under consideration have been irrigated and harvested in the subbasin during the entire 1972 through 2001 period of record. This table also shows years and yields that were graphed to derive polynomial equations for determining $Y_{env(C)}$ values for each crop in the subbasin. Area-weighted annual yield values during the study period for each crop, Y_{env} polynomial trend lines, and resultant Y_{env} polynomial equations are graphed in Figures 2.1.4.34 through 2.1.4.42.

Table 2.1.4.74 Area-weighted crop yields - Lower Laramie subbasin

	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette
Portion of total Lower Laramie subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)	0.0900	0.0000	0.0000	0.0000	0.0400	0.0300	0.0000	0.0000	0.8400	0.0000

Crop: alfalfa
Units: tons per acre

Assumption: alfalfa production ongoing through entire 1972 - 2001 period in all counties located partially or entirely within the subbasin; estimated yield values (in shaded cells) incorporated where actual data is not available

National Agricultural Statistics Service (NASS) crop yield data			County:									Lower Laramie subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Alfalfa	ton/acre	2.20	1.90	2.03	2.66	3.30	3.00	2.42	2.80	3.30	1.80	3.19
1973	Alfalfa	ton/acre	2.27	1.90	2.30	2.80	3.50	3.10	2.46	2.80	3.17	1.90	3.10
1974	Alfalfa	ton/acre	2.20	1.90	2.20	2.91	3.65	3.60	2.21	2.71	2.80	1.70	2.80
1975	Alfalfa	ton/acre	2.00	2.06	2.30	3.11	3.53	2.80	2.50	2.31	2.85	1.70	2.80
1976	Alfalfa	ton/acre	2.11	1.50	2.40	3.50	3.70	2.51	2.57	2.12	2.60	1.60	2.60
1977	Alfalfa	ton/acre	1.90	1.60	1.90	2.89	3.50	2.80	2.10	1.80	2.30	1.30	2.33
1978	Alfalfa	ton/acre	2.60	1.60	2.10	3.32	3.94	2.50	2.19	2.40	2.40	1.60	2.48
1979	Alfalfa	ton/acre	2.50	2.00	2.20	3.80	3.80	2.90	2.24	2.60	3.30	1.70	3.24
1980	Alfalfa	ton/acre	2.30	2.10	2.00	3.00	3.60	2.90	2.60	2.30	2.84	1.20	2.82
1981	Alfalfa	ton/acre	2.60	2.20	2.20	3.40	4.40	2.80	2.60	2.90	2.90	1.50	2.93
1982	Alfalfa	ton/acre	2.54	2.47	2.03	2.90	3.73	3.35	3.54	2.55	2.50	1.44	2.58
1983	Alfalfa	ton/acre	2.32	2.67	2.24	3.20	4.70	3.50	2.90	2.85	2.87	1.20	2.91
1984	Alfalfa	ton/acre	2.40	2.20	2.00	3.20	4.03	3.40	2.30	3.00	3.10	1.80	3.08
1985	Alfalfa	ton/acre	1.13	2.29	1.64	2.90	3.10	3.23	1.21	2.60	2.81	1.55	2.68
1986	Alfalfa	ton/acre	2.10	1.71	2.24	3.51	4.29	3.90	2.27	3.46	3.22	1.54	3.18
1987	Alfalfa	ton/acre	2.00	1.64	2.00	3.45	4.00	3.13	2.04	2.15	2.78	1.29	2.77
1988	Alfalfa	ton/acre	2.20	2.12	1.65	3.24	4.54	3.67	1.93	2.53	2.63	1.33	2.70
1989	Alfalfa	ton/acre	1.93	2.24	1.83	3.14	4.14	4.44	2.18	1.96	3.00	1.38	2.99
1990	Alfalfa	ton/acre	1.94	1.65	2.36	3.40	4.25	3.50	2.25	2.00	2.97	1.62	2.94
1991	Alfalfa	ton/acre	1.71	2.10	2.40	3.49	4.09	3.50	2.30	2.60	3.90	1.40	3.70
1992	Alfalfa	ton/acre	1.80	2.10	2.00	3.10	3.81	3.70	2.50	2.30	2.80	1.30	2.78
1993	Alfalfa	ton/acre	2.30	2.10	2.70	3.42	4.50	3.60	2.80	3.40	3.50	1.40	3.44
1994	Alfalfa	ton/acre	2.10	2.00	2.10	3.13	4.20	4.09	2.36	3.40	3.50	1.70	3.42
1995	Alfalfa	ton/acre	1.44	2.44	2.85	3.43	4.89	3.88	2.44	3.33	3.42	1.50	3.31
1996	Alfalfa	ton/acre	1.87	2.15	2.39	3.31	4.46	3.61	2.48	2.40	3.48	1.46	3.38
1997	Alfalfa	ton/acre	1.90	2.16	2.60	4.00	4.52	4.11	3.10	2.83	4.12	1.93	3.94
1998	Alfalfa	ton/acre	2.02	2.17	2.20	3.46	4.40	4.00	2.64	3.33	4.01	1.60	3.85
1999	Alfalfa	ton/acre	2.10	2.18	2.64	3.47	4.52	3.86	2.60	3.80	3.83	1.64	3.70
2000	Alfalfa	ton/acre	1.87	2.00	1.97	3.53	4.31	4.06	2.65	3.33	3.30	1.63	3.23
2001	Alfalfa	ton/acre	1.74	2.00	2.40	3.55	4.40	3.58	2.63	3.75	3.40	1.65	3.30

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1973	1	3.10
	1974	2	2.80
	1981	9	2.93
	1983	11	2.91
	1984	12	3.08
	1986	14	3.18
	1993	21	3.44
	1998	26	3.85
	1999	27	3.70

Derived $Y_{env(ALFALFA)}$ polynomial equation: $y = 0.0014x^2 - 0.0088x + 3.0034$ (see Figure 2.1.4.34)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.74 Area-weighted crop yields - Lower Laramie subbasin (cont)

Crop: barley

Units: bushels per acre

Assumption: significant barley production data in all of the counties comprising the subbasin ends in 1991; assume no significant subbasin barley production in Albany County after 1991; estimate annual yields for years for which data do not exist

National Agricultural Statistics Service (NASS) crop yield data			County:										Lower Laramie subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Barley	bu/acre	49.00	50.00	51.00	73.00	56.00	67.00	50.00	51.00	66.00	46.00	64.10
1973	Barley	bu/acre	51.00	47.00	46.93	48.00	56.00	63.00	46.20	58.00	66.00	45.00	64.16
1974	Barley	bu/acre	48.00	52.00	39.00	62.00	60.53	53.09	58.00	42.47	60.43		59.10
1975	Barley	bu/acre	47.00	40.00	40.00	79.89	63.00	58.73	50.00	65.00	58.00		57.23
1976	Barley	bu/acre	48.00	60.00	50.00	79.00	56.00	58.94	70.00	50.00	50.00		50.33
1977	Barley	bu/acre	49.00	55.00	26.00	68.00	44.00	39.00	49.00	32.00	30.00		32.54
1978	Barley	bu/acre	62.00	70.00	32.00	77.00	62.00	61.00	60.00	42.00	37.00		40.97
1979	Barley	bu/acre	32.00	38.00	31.00	70.00	50.00	51.00		51.00	54.00		51.77
1980	Barley	bu/acre	43.60	60.00	53.11	79.79	53.47	49.76	34.00	42.55	49.53		49.16
1981	Barley	bu/acre	53.63	53.50	44.63	79.54	45.93	48.89		50.00	53.85		53.36
1982	Barley	bu/acre	65.00	65.00	55.00	63.40	57.06	56.28		55.00	62.00		61.90
1983	Barley	bu/acre	50.00	60.00	66.50	77.35	69.58	71.45	65.00	50.00	48.88		50.49
1984	Barley	bu/acre	50.00	70.00	66.00	65.00	70.00	70.00	64.00	51.00	54.00		54.76
1985	Barley	bu/acre	48.00	60.60	68.10	68.00	66.00	78.00	55.00	51.00	54.00		54.66
1986	Barley	bu/acre	50.00	73.29	66.33	77.49	68.46	74.29	57.00	65.00	69.00		67.43
1987	Barley	bu/acre	50.00	65.00	44.82	76.47	47.00	77.24	52.00	70.00	55.00		54.90
1988	Barley	bu/acre	60.00	70.00	33.00	51.88	45.00	41.48	46.00	42.00	41.00		42.88
1989	Barley	bu/acre	55.00	65.00	53.33	73.00	59.82	63.80	50.00	57.50	64.15		63.14
1990	Barley	bu/acre	60.00	70.00	55.00	73.03	62.50	67.76	45.00	60.50	66.44		65.74
1991	Barley	bu/acre	70.00	65.00	62.00	82.40	70.47	74.59	65.00	69.00	68.00		68.48
1992	Barley	bu/acre			66.00	83.20	70.00	75.00	81.00	61.00	60.00		61.58
1993	Barley	bu/acre			65.00	101.80	65.00	68.33	55.00	70.00	67.50		67.26
1994	Barley	bu/acre			55.00	70.00	69.00	66.00	75.00	76.00	36.00		40.57
1995	Barley	bu/acre			86.00	103.00	83.00	70.34			69.00		70.57
1996	Barley	bu/acre				93.36	75.91	70.85			81.03		80.14
1997	Barley	bu/acre				87.00	57.00	80.09	70.00		86.00		82.66
1998	Barley	bu/acre				85.33	69.98	71.12	82.86		101.05		96.70
1999	Barley	bu/acre				96.51	78.80	71.68			74.62		74.98
2000	Barley	bu/acre				75.00	72.94	72.82			100.00		96.17
2001	Barley	bu/acre				76.00	70.93	73.31			88.54		86.13

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1974	2	59.10
	1975	3	57.23
	1982	10	61.90
	1986	14	67.43
	1989	17	63.14
	1990	18	65.74
	1995	23	70.57
	1996	24	80.14
	1997	25	82.66

Derived $Y_{env(BARLEY)}$ polynomial equation: $y = 0.0529x^2 - 0.6404x + 60.632$ (see Figure 2.1.4.35)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.74 Area-weighted crop yields - Lower Laramie subbasin (cont)

Crop: corn

Units: bushels per acre

Assumption: corn production in Goshen, Laramie, and Platte Counties during the 1972 - 2001 period; no significant corn production in Albany County; estimate annual yields for years for which data do not exist in Goshen, Laramie, and Platte Counties

National Agricultural Statistics Service (NASS) crop yield data			County:										Lower Laramie subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Corn	bu/acre		70.00	57.00	80.00	94.00	78.00	70.00		94.00		93.48
1973	Corn	bu/acre	71.00	74.00		84.78	89.22	97.00	73.00		116.00		112.47
1974	Corn	bu/acre		78.00		50.50	79.50	101.25	50.00		77.00		78.06
1975	Corn	bu/acre		63.00		59.00	85.07	66.00	55.00		96.00		93.83
1976	Corn	bu/acre		55.00		85.00	93.08	94.00	55.00		98.00		97.33
1977	Corn	bu/acre		55.00		86.00	94.00	95.00	55.00		73.80		76.69
1978	Corn	bu/acre		61.00	91.00	85.40	89.50	66.00	61.00	88.00	73.00		74.57
1979	Corn	bu/acre			80.00	86.00	89.83	75.00	75.00	70.00	88.00		87.78
1980	Corn	bu/acre			90.00	90.00	102.90	95.00	85.00	93.00	90.00		91.57
1981	Corn	bu/acre			84.00	84.00	113.53	90.00	74.00	92.00	112.00		111.45
1982	Corn	bu/acre			84.00	98.00	111.00	95.00	87.00	88.00	104.94		105.27
1983	Corn	bu/acre			85.00	94.00	110.55	101.00	78.00	100.00	95.00		96.89
1984	Corn	bu/acre				90.00	105.39	97.00	65.00	99.00	90.00		91.90
1985	Corn	bu/acre				91.00	100.00	94.00	60.00	90.00	92.32		93.21
1986	Corn	bu/acre				104.00	119.70	119.00	76.00	102.00	108.00		109.63
1987	Corn	bu/acre			92.00	91.00	117.75	112.11	80.00	95.00	97.00		99.75
1988	Corn	bu/acre			126.00	95.00	130.78	127.00	90.00	108.00	104.00		107.66
1989	Corn	bu/acre			91.00	92.08	96.91	102.00	85.00	90.00	98.14		98.13
1990	Corn	bu/acre			120.00	92.00	127.99	123.00	90.00	113.33	111.80		113.93
1991	Corn	bu/acre			99.00	95.00	125.99	109.04	94.00	66.00	106.00		108.27
1992	Corn	bu/acre			97.00	78.00	101.81	102.00	38.00		92.00		93.39
1993	Corn	bu/acre			80.00	88.50	82.00	65.50			80.00		79.74
1994	Corn	bu/acre				111.00	130.39	111.72			103.00		106.26
1995	Corn	bu/acre				108.00	113.64	102.25			80.00		84.38
1996	Corn	bu/acre				105.00	130.87	98.10	103.33		101.90		104.93
1997	Corn	bu/acre				126.07	140.00	135.00			132.00		132.97
1998	Corn	bu/acre					136.99	127.94			138.26		137.79
1999	Corn	bu/acre				101.43	122.17	120.00			135.00		133.12
2000	Corn	bu/acre				112.86	136.63	142.86			130.81		131.84
2001	Corn	bu/acre					133.33	135.00			112.94		115.88

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	93.48
	1976	4	97.33
	1982	10	105.27
	1983	11	96.89
	1986	14	109.63
	1988	16	107.66
	1991	19	108.27
	1996	24	104.93
	1997	25	132.97
	2000	28	131.84

Derived $Y_{env(CORN)}$ polynomial equation: $y = 0.0318x^2 + 0.216x + 95.248$ (see Figure 2.1.4.36)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.74 Area-weighted crop yields - Lower Laramie subbasin (cont)

Crop: dry beans

Units: hundred pounds per acre (cwt/acre)

Assumption: dry beans production in Goshen, Laramie, and Platte Counties during the 1972 - 2001 period; no dry beans production in Albany County

National Agricultural Statistics Service (NASS) crop yield data			County:										Lower Laramie subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Dry beans	cwt/acre			17.75	18.80	19.70	18.30			19.50		19.48
1973	Dry beans	cwt/acre			17.50	17.50	18.20	18.00			17.50		17.59
1974	Dry beans	cwt/acre			17.20	17.80	19.48	19.90			19.90		19.85
1975	Dry beans	cwt/acre			15.40	18.30	16.84	17.60			17.60		17.52
1976	Dry beans	cwt/acre			16.00	19.30	17.80	16.00			16.50		16.63
1977	Dry beans	cwt/acre			14.23	19.50	17.90	17.60			14.00		14.54
1978	Dry beans	cwt/acre			15.80	16.60	16.29	14.30			15.80		15.80
1979	Dry beans	cwt/acre			19.00	21.00	19.11	18.00			18.00		18.12
1980	Dry beans	cwt/acre			18.80	19.00	21.70	20.70			18.43		18.86
1981	Dry beans	cwt/acre			17.00	21.30	22.04	20.60			22.10		22.04
1982	Dry beans	cwt/acre			15.00	19.70	18.07	16.60			17.00		17.10
1983	Dry beans	cwt/acre			14.60	19.60	18.80	16.70			18.50		18.47
1984	Dry beans	cwt/acre			19.00	19.80	22.20	20.00			19.46		19.78
1985	Dry beans	cwt/acre			18.00	15.10	19.00	18.80			14.40		15.04
1986	Dry beans	cwt/acre			18.00	19.50	18.65	17.80			16.35		16.65
1987	Dry beans	cwt/acre			19.00	21.40	19.20	18.56			17.00		17.29
1988	Dry beans	cwt/acre			20.00	17.42	21.30	17.53			18.50		18.77
1989	Dry beans	cwt/acre			17.00	19.00	19.18	20.70			18.61		18.74
1990	Dry beans	cwt/acre			17.50	17.00	21.03	20.79			19.00		19.28
1991	Dry beans	cwt/acre			17.00	20.00	19.85	17.87			18.93		19.00
1992	Dry beans	cwt/acre				20.00	18.83	15.56			15.67		16.01
1993	Dry beans	cwt/acre				13.40	14.58	14.79			14.57		14.58
1994	Dry beans	cwt/acre				18.17	20.45	20.60			16.00		16.63
1995	Dry beans	cwt/acre				17.78	17.96	18.24			17.70		17.75
1996	Dry beans	cwt/acre				26.34	23.99	22.20			16.94		17.88
1997	Dry beans	cwt/acre				23.52	21.91	23.64			20.59		20.83
1998	Dry beans	cwt/acre				22.41	22.63	24.25			22.58		22.64
1999	Dry beans	cwt/acre				19.14	21.02	23.24			18.63		19.04
2000	Dry beans	cwt/acre				21.05	22.86	24.68			18.12		18.85
2001	Dry beans	cwt/acre				18.56	20.81	26.26			18.85		19.30

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	19.48
	1973	1	17.59
	1980	8	18.86
	1984	12	19.78
	1988	16	18.77
	1990	18	19.28
	1991	19	19.00
	1997	25	20.83

Derived $Y_{env(DRYBEANS)}$ polynomial equation: $y = 0.0045x^2 - 0.0509x + 18.761$ (see Figure 2.1.4.37)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.74 Area-weighted crop yields - Lower Laramie subbasin (cont)

Crop: oats

Units: bushels per acre

Assumption: significant oats production data for Albany County appears to end in 1991; assume no significant subbasin oats production in Albany County after 1991; estimate annual yields for years for which data do not exist in Goshen, Laramie, and Platte Counties

National Agricultural Statistics Service (NASS) crop yield data			County:										Lower Laramie subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Oats	bu/acre	50.00	61.00	66.00	65.67	64.00	54.33	57.00	66.00	60.00	55.00	59.09
1973	Oats	bu/acre	50.00	50.00	52.20	53.21	53.00	61.00	50.00	59.00	49.00	50.00	49.61
1974	Oats	bu/acre	39.00	50.00	33.00	50.00	48.00	63.00	43.23	43.00	59.81	60.00	57.56
1975	Oats	bu/acre	52.00	52.00	45.82	60.00	46.00	49.00	50.40	40.00	46.00	44.00	46.63
1976	Oats	bu/acre	56.00	59.00	56.79	58.00	54.00	63.00	58.00	60.00	55.00	53.00	55.29
1977	Oats	bu/acre	52.00	53.00	30.00	63.62	44.00	34.00	51.85	51.00	42.00	52.00	42.74
1978	Oats	bu/acre	58.50	62.00	75.35	76.00	76.00	76.00	62.00	79.00	77.00	79.00	75.27
1979	Oats	bu/acre	67.00	62.00	43.00	62.00	56.00	48.00	66.18	46.00	39.00	77.50	42.47
1980	Oats	bu/acre	58.00	72.00	48.00	60.00	59.70	69.00	64.00	55.00	59.00	65.00	59.24
1981	Oats	bu/acre	43.00	46.73	49.00	59.03	65.63	67.00	50.00	54.00	58.00	64.00	57.23
1982	Oats	bu/acre	65.50	62.00	70.00	64.60	79.00	79.42	68.00	74.00	59.00	74.00	61.00
1983	Oats	bu/acre	65.00	60.00	58.17	66.23	60.00	64.00	61.00	60.00	51.00	64.00	53.01
1984	Oats	bu/acre	53.00	54.00	52.00	73.00	55.00	64.46	54.00	58.00	46.29	54.00	47.79
1985	Oats	bu/acre	53.00	51.00	59.00	65.65	60.00	59.00	50.44	58.00	47.00	63.00	48.42
1986	Oats	bu/acre	65.00	71.00	60.00	74.00	63.00	75.00	53.00	63.00	77.00	60.00	75.30
1987	Oats	bu/acre	61.00	68.00	48.36	63.33	80.21	85.27	51.00	71.00	69.00	56.00	69.22
1988	Oats	bu/acre	44.00	46.00	37.50	62.00	44.44	34.50	34.00	39.00	33.00	52.00	34.49
1989	Oats	bu/acre	60.00	62.00	42.50	62.00	47.00	63.00	52.00	50.00	50.00	61.00	51.17
1990	Oats	bu/acre	45.00	50.00	56.60	63.00	55.50	56.31	47.00	50.00	55.00	50.00	54.16
1991	Oats	bu/acre	45.00	56.00	72.00	71.00	69.00	60.00	53.00	50.00	85.00	56.00	80.01
1992	Oats	bu/acre		55.00	55.00	74.40	72.00	64.00	58.00	40.00	55.00	72.00	57.14
1993	Oats	bu/acre		65.00	59.00	86.00	86.00	82.75	72.50	66.00	77.00	65.00	78.17
1994	Oats	bu/acre		45.00	46.00	84.00	77.00	70.00	50.00	62.00	62.00	55.00	63.89
1995	Oats	bu/acre				94.12	71.90	66.61	91.67		73.64		73.22
1996	Oats	bu/acre				80.69	75.18	46.67	44.23	70.00	70.53		70.26
1997	Oats	bu/acre			51.82	85.42	71.43	75.00	72.22	80.00	64.29		65.42
1998	Oats	bu/acre				88.89	76.30	71.67	75.00		50.00		53.57
1999	Oats	bu/acre			55.00	94.29	70.00	65.99	78.00		64.09		64.79
2000	Oats	bu/acre				108.89	72.96	65.19			64.51		65.45
2001	Oats	bu/acre				76.67	67.00	75.00			96.67		92.74

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	59.09
	1974	2	57.56
	1976	4	55.29
	1980	8	59.24
	1981	9	57.23
	1982	10	61.00
	1987	15	69.22
	1995	23	73.22

Derived $Y_{env(OATS)}$ polynomial equation: $y = 0.0255x^2 + 0.1397x + 56.659$ (see Figure 2.1.4.38)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.74 Area-weighted crop yields - Lower Laramie subbasin (cont)

Crop: other hay (not including alfalfa)

Units: tons per acre

Assumption: other hay production ongoing through entire 1972 - 2002 period in all counties located partially or entirely within the subbasin; estimated yield values (in shaded cells) incorporated where actual data are not available

National Agricultural Statistics Service (NASS) crop yield data			County:										Lower Laramie subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Other hay	ton/acre	1.10	1.11	1.16	1.50	1.20	1.50	1.00	1.10	1.30	1.17	1.28
1973	Other hay	ton/acre	1.00	1.13	1.20	1.70	1.20	1.30	1.60	1.00	1.10	1.45	1.10
1974	Other hay	ton/acre	1.00	1.19	1.40	1.53	1.20	1.40	0.80	1.10	1.20	1.23	1.19
1975	Other hay	ton/acre	0.84	1.10	0.90	1.46	1.50	1.04	1.30	0.90	1.10	1.05	1.09
1976	Other hay	ton/acre	1.01	1.20	1.10	1.56	1.20	0.70	1.00	1.00	0.87	1.27	0.89
1977	Other hay	ton/acre	0.90	0.98	1.00	1.24	1.13	0.70	0.80	0.90	1.00	1.00	0.99
1978	Other hay	ton/acre	1.10	1.30	0.90	1.80	1.60	0.90	1.30	1.10	1.20	1.14	1.20
1979	Other hay	ton/acre	1.20	1.40	0.90	2.24	1.20	1.37	1.20	1.20	1.10	1.32	1.12
1980	Other hay	ton/acre	0.90	1.30	1.39	1.51	1.10	1.10	0.90	0.90	1.40	1.11	1.33
1981	Other hay	ton/acre	1.00	1.40	1.40	1.63	1.50	1.20	1.20	1.40	1.47	1.18	1.42
1982	Other hay	ton/acre	1.16	1.59	1.70	1.60	1.86	1.03	2.40	1.61	1.10	1.16	1.13
1983	Other hay	ton/acre	1.31	1.62	2.20	2.20	1.50	1.40	1.85	1.10	1.55	1.28	1.52
1984	Other hay	ton/acre	1.20	1.60	1.40	2.20	1.80	1.10	1.20	1.40	1.40	1.20	1.39
1985	Other hay	ton/acre	1.06	1.66	1.27	1.91	1.47	1.38	1.24	1.00	1.37	1.03	1.35
1986	Other hay	ton/acre	1.24	1.37	0.90	1.73	2.02	1.64	1.90	1.90	1.61	1.18	1.59
1987	Other hay	ton/acre	1.44	1.57	1.36	2.30	1.48	1.99	1.67	1.90	1.15	0.84	1.21
1988	Other hay	ton/acre	1.37	1.36	0.75	0.97	1.41	1.16	1.55	1.60	1.34	0.80	1.34
1989	Other hay	ton/acre	0.68	0.87	0.70	1.29	1.36	1.31	0.78	1.90	1.11	0.78	1.09
1990	Other hay	ton/acre	1.10	1.27	1.00	1.56	1.55	1.53	1.01	1.87	1.60	0.99	1.55
1991	Other hay	ton/acre	1.90	1.34	1.60	1.79	1.83	1.70	1.70	1.40	1.70	1.09	1.72
1992	Other hay	ton/acre	1.11	1.30	1.30	1.79	1.40	1.29	0.90	0.90	1.00	0.89	1.03
1993	Other hay	ton/acre	1.30	1.80	1.90	2.10	2.10	2.10	1.80	1.30	1.20	1.10	1.27
1994	Other hay	ton/acre	1.20	1.42	1.20	1.70	1.50	1.90	0.90	1.40	1.00	0.86	1.07
1995	Other hay	ton/acre	1.10	1.66	1.70	1.80	1.80	1.71	1.26	1.40	1.70	1.23	1.65
1996	Other hay	ton/acre	1.32	1.50	1.56	1.84	1.66	1.67	1.31	0.90	1.38	1.03	1.39
1997	Other hay	ton/acre	1.21	1.54	1.81	2.17	2.00	1.58	1.60	2.00	2.11	1.10	2.01
1998	Other hay	ton/acre	1.14	1.58	1.62	1.92	2.20	1.70	1.37	2.33	1.29	1.06	1.33
1999	Other hay	ton/acre	1.50	1.54	1.90	1.89	1.67	1.50	1.29	1.13	1.90	1.18	1.84
2000	Other hay	ton/acre	1.40	1.56	1.67	1.92	1.50	1.58	1.37	1.00	1.00	1.09	1.07
2001	Other hay	ton/acre	1.03	1.13	1.71	1.91	2.25	1.31	1.39	1.00	1.31	1.01	1.32

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	1.28
	1974	2	1.19
	1978	6	1.20
	1981	9	1.42
	1984	12	1.39
	1986	14	1.59
	1990	18	1.55
	1995	23	1.65
	1999	27	1.84

Derived $Y_{env(OTHER\ HAY)}$ polynomial equation: $y = 0.0003x^2 + 0.014x + 1.1951$ (see Figure 2.1.4.39)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.74 Area-weighted crop yields - Lower Laramie subbasin (cont)

Crop: spring wheat
Units: tons per acre

Assumption: significant spring wheat oats production data for the Goshen, Laramie, and Platte Counties ends in 1997; assume no significant subbasin oats production in Albany County during the entire 1972 - 2001 period; estimate annual yields for years for which data do not exist

National Agricultural Statistics Service (NASS) crop yield data			County:									Lower Laramie subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Spring wheat	bu/acre		40.00	35.00	47.00	35.00		36.00		34.00		33.00
1973	Spring wheat	bu/acre		34.00	33.67	44.00	33.00		30.00	33.00	33.00		31.92
1974	Spring wheat	bu/acre		36.00	35.33	50.00	33.00	41.00	28.00	35.00	37.00		36.70
1975	Spring wheat	bu/acre		34.00	40.00	37.00	42.00	35.00	27.00	38.00	35.00		35.76
1976	Spring wheat	bu/acre		35.00	43.00	45.00	40.00	35.00	27.00	39.00	33.00		33.83
1977	Spring wheat	bu/acre		34.00	38.00	47.00	39.00	33.00	30.00	36.00	31.00		31.93
1978	Spring wheat	bu/acre		36.00	32.00	55.00	34.00	33.00	32.00	34.00	32.00		32.25
1979	Spring wheat	bu/acre		38.00	49.40	61.00	42.00	50.00	34.00	45.00	50.00		49.13
1980	Spring wheat	bu/acre		32.00	35.00	41.67	32.00	34.00		33.00	34.00		33.78
1981	Spring wheat	bu/acre		27.00	29.50	34.00	34.00	36.00	25.00	32.00	37.00		36.64
1982	Spring wheat	bu/acre		38.00	37.25	50.00	52.00	58.00	32.00	52.33	56.67		56.21
1983	Spring wheat	bu/acre		40.00	40.00	59.60	54.00	60.00		53.00	60.00		59.35
1984	Spring wheat	bu/acre		60.00	44.00	63.00	55.00	50.00		53.00	45.00		46.25
1985	Spring wheat	bu/acre		49.00	40.00	49.00	40.75	41.00		42.00	38.00		38.40
1986	Spring wheat	bu/acre		44.00	50.00	40.00	63.00	57.50		55.00	53.00		54.23
1987	Spring wheat	bu/acre		36.00	40.00	42.00	34.00	42.00		40.00	38.00		37.70
1988	Spring wheat	bu/acre		37.00	41.00	52.00	55.00	52.00		44.00	41.00		42.88
1989	Spring wheat	bu/acre		43.00	43.00	65.00	46.00	43.00		47.00	47.00		46.76
1990	Spring wheat	bu/acre			30.00	56.00	50.00	47.00			30.00		32.73
1991	Spring wheat	bu/acre					49.60	54.00	48.00	50.00	41.80		43.05
1992	Spring wheat	bu/acre				65.00	40.00	73.00		36.00	39.56		40.70
1993	Spring wheat	bu/acre				89.00	48.12	79.00		58.00	39.87		42.04
1994	Spring wheat	bu/acre				54.17	41.00	45.00		44.17	39.65		39.97
1995	Spring wheat	bu/acre				62.00	67.00	68.46			38.18		42.30
1996	Spring wheat	bu/acre				66.67	49.14	60.00			39.81		41.48
1997	Spring wheat	bu/acre					44.00	58.00			50.00		49.61
1998	Spring wheat	bu/acre											
1999	Spring wheat	bu/acre											
2000	Spring wheat	bu/acre											
2001	Spring wheat	bu/acre											

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	33.00
	1974	2	36.70
	1979	7	49.13
	1984	12	46.25
	1985	13	38.40
	1986	14	54.23
	1988	16	42.88
	1989	17	46.76
	1997	25	49.61

Derived $Y_{env(SPRINGWHEAT)}$ polynomial equation: $y = -0.029x^2 + 1.3057x + 33.72$ (see Figure 2.1.4.40)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.74 Area-weighted crop yields - Lower Laramie subbasin (cont)

Crop: sugar beets
Units: tons per acre

Assumption: significant sugar beet production data in Goshen, Laramie, and Platte Counties through entire 1972 - 2001 period; assume no significant subbasin oats production in Albany County during the entire 1972 - 2001 period; estimate annual yields for years for which data do not exist in Goshen, Laramie, and Platte Counties

National Agricultural Statistics Service (NASS) crop yield data			County:										Lower Laramie subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Sugar beets	ton/acre			14.70	19.90	22.93	15.30			22.80		22.57
1973	Sugar beets	ton/acre			10.29	14.60	19.31	11.50			16.40		16.56
1974	Sugar beets	ton/acre					18.46	15.86			17.76		17.77
1975	Sugar beets	ton/acre					20.20	15.64			17.66		17.87
1976	Sugar beets	ton/acre					20.90	17.81			17.85		18.18
1977	Sugar beets	ton/acre					19.40	20.20			14.80		15.48
1978	Sugar beets	ton/acre					18.61	14.60			16.70		16.84
1979	Sugar beets	ton/acre					18.64	14.60			17.90		17.87
1980	Sugar beets	ton/acre					21.80	20.20			16.98		17.61
1981	Sugar beets	ton/acre					25.31	50.00			20.60		22.07
1982	Sugar beets	ton/acre					19.40	22.00			18.30		18.54
1983	Sugar beets	ton/acre					15.78	13.50			12.60		12.98
1984	Sugar beets	ton/acre				13.70	20.87	11.20			15.60		16.03
1985	Sugar beets	ton/acre				17.40	22.80	25.10			19.60		20.13
1986	Sugar beets	ton/acre				18.90	23.41	23.60			19.90		20.40
1987	Sugar beets	ton/acre				16.30	21.50	20.40			17.80		18.29
1988	Sugar beets	ton/acre				19.20	22.00	23.25			19.57		19.95
1989	Sugar beets	ton/acre				21.97	19.07	19.75			17.09		17.39
1990	Sugar beets	ton/acre				20.19	21.00	13.53			19.34		19.33
1991	Sugar beets	ton/acre				21.05	21.47	17.17			16.72		17.25
1992	Sugar beets	ton/acre				20.88	16.97	17.53			16.53		16.61
1993	Sugar beets	ton/acre				19.86	15.63	17.08			17.84		17.58
1994	Sugar beets	ton/acre				16.93	20.56	20.25			20.49		20.49
1995	Sugar beets	ton/acre				20.72	16.34	15.75			13.87		14.20
1996	Sugar beets	ton/acre				20.02	16.88	17.81			17.95		17.83
1997	Sugar beets	ton/acre				22.78	15.69	14.67			16.63		16.46
1998	Sugar beets	ton/acre				21.07	19.37	18.70			17.80		18.00
1999	Sugar beets	ton/acre				21.25	18.40	18.17			18.39		18.38
2000	Sugar beets	ton/acre				21.54	18.70	15.41			19.49		19.27
2001	Sugar beets	ton/acre				18.56	17.71	17.11			19.06		18.85

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1974	2	17.77
	1976	4	18.18
	1982	10	18.54
	1987	15	18.29
	1988	16	19.95
	1990	18	19.33
	1994	22	20.49

Derived $Y_{env(SUGARBEETS)}$ polynomial equation: $y = 0.0056x^2 - 0.0212x + 17.956$ (see Figure 2.1.4.41)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.74 Area-weighted crop yields - Lower Laramie subbasin (cont)

Crop: winter wheat

Units: bushels per acre

Assumption: significant winter wheat production data for the Goshen, Laramie, and Platte Counties through entire 1972 - 2001 period; assume no significant subbasin winter wheat production in Albany County during the entire 1972 - 2001 period; estimate annual yields for years for which data do not exist in Goshen, Laramie, and Platte Counties

National Agricultural Statistics Service (NASS) crop yield data			County:										Lower Laramie subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Winter wheat	bu/acre		40.00	40.00	41.00	43.06	42.00		42.00	40.00		40.40
1973	Winter wheat	bu/acre		39.00	38.00	37.00	38.54	37.00		38.00	38.00		38.03
1974	Winter wheat	bu/acre		33.00	36.00	32.00	37.17	36.00		36.00	38.00		37.84
1975	Winter wheat	bu/acre		36.00	38.00	32.00	39.54	36.00		37.00	37.00		37.24
1976	Winter wheat	bu/acre		36.00	32.00	39.00	33.00	33.00		32.00	29.00		29.57
1977	Winter wheat	bu/acre		34.00	25.00	38.00	23.00	26.00		22.00	22.50		22.67
1978	Winter wheat	bu/acre		35.60	34.00		44.00	33.59		33.00	35.00		35.93
1979	Winter wheat	bu/acre		30.00	23.00		35.00	42.00		38.00	34.56		34.85
1980	Winter wheat	bu/acre		34.32	29.00		48.00	33.31		28.00	35.00		36.36
1981	Winter wheat	bu/acre		33.98	32.00		41.00	40.41		33.50	35.00		35.83
1982	Winter wheat	bu/acre		40.00	36.00		51.50	53.00		33.00	39.00		40.82
1983	Winter wheat	bu/acre		38.00	38.00		53.00	54.00		44.00	40.00		41.87
1984	Winter wheat	bu/acre		50.00	40.00	53.00	42.60	59.00		37.00	35.00		36.61
1985	Winter wheat	bu/acre		45.00	35.00	52.00	34.00	38.73		35.00	33.00		33.30
1986	Winter wheat	bu/acre		32.00	38.00	55.00	46.20	60.00		36.00	35.00		37.03
1987	Winter wheat	bu/acre		35.00	37.00	51.00	39.00	56.00		41.00	40.00		40.41
1988	Winter wheat	bu/acre		40.00	39.25	53.00	50.00	54.63		39.00	38.00		39.85
1989	Winter wheat	bu/acre		35.00	36.00	36.00	43.00	46.98		33.00	41.00		41.41
1990	Winter wheat	bu/acre		40.00	40.00	58.00	46.67	65.45		40.00	43.33		44.41
1991	Winter wheat	bu/acre	47.00	40.00	32.50	68.33	55.91	50.32		50.25	45.67		46.93
1992	Winter wheat	bu/acre		43.00	42.00	55.00	46.00	55.59		42.00	47.00		47.17
1993	Winter wheat	bu/acre		50.00	50.00	60.50	52.50	56.96		54.00	55.00		54.79
1994	Winter wheat	bu/acre		50.00		65.00	65.00	42.00		41.00	50.00		51.37
1995	Winter wheat	bu/acre					59.00	80.00		75.00	82.00		79.43
1996	Winter wheat	bu/acre					42.40	54.29			63.64		61.03
1997	Winter wheat	bu/acre					61.21	80.25			56.25		57.57
1998	Winter wheat	bu/acre					72.11	76.92			61.38		63.05
1999	Winter wheat	bu/acre					65.00	79.20			60.00		61.17
2000	Winter wheat	bu/acre					60.00	76.92			64.65		64.54
2001	Winter wheat	bu/acre					73.33	72.00			50.00		53.25

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1974	2	37.84
	1982	10	40.82
	1983	11	41.87
	1987	15	40.41
	1991	19	46.93
	1993	21	54.79
	1996	24	61.03
	1998	26	63.05
	2000	28	64.54

Derived $Y_{env(WINTERWHEAT)}$ polynomial equation: $y = 0.0497x^2 - 0.4796x + 39.013$ (see Figure 2.1.4.42)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Notes:

(1) See Table 2.1.4.51.

Figure 2.1.4.34.
Area-weighted annual barley yields and Y_{env} polynomial trend line and equation
Lower Laramie subbasin

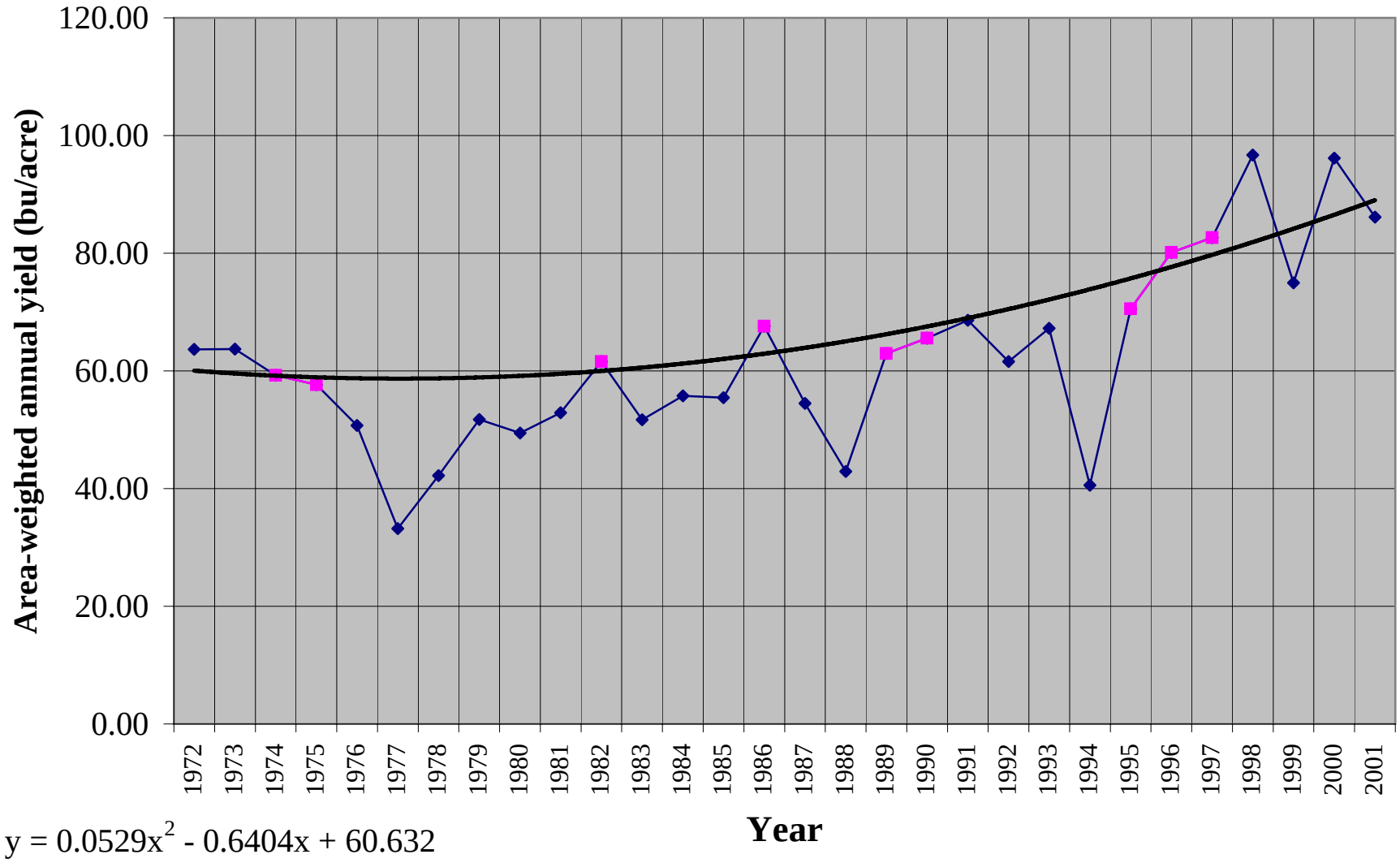


Figure 2.1.4.35.
Area-weighted annual corn yields and Y_{env} polynomial trend line and equation
Lower Laramie subbasin

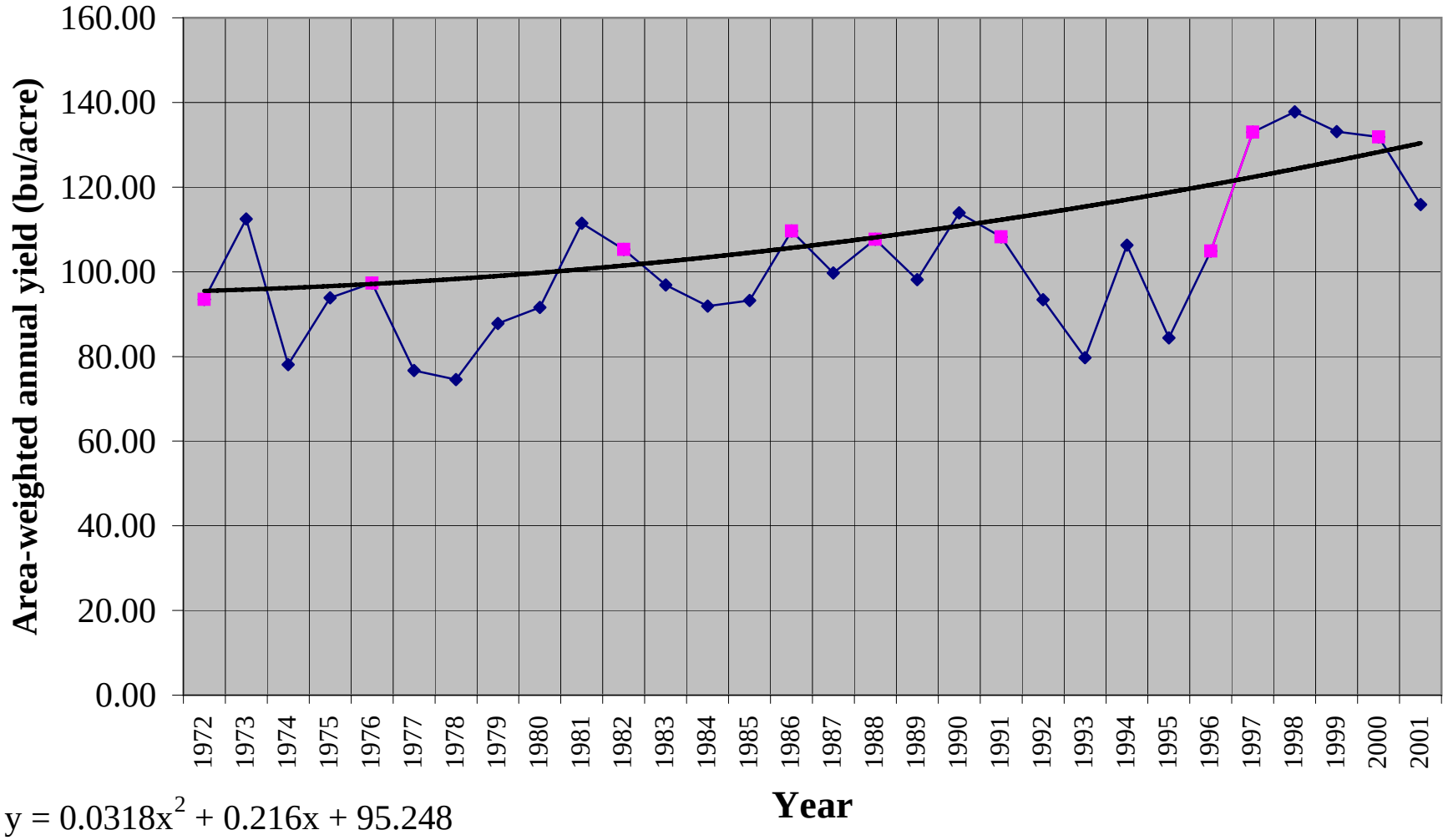


Figure 2.1.4.36.
Area-weighted annual dry beans yields and Y_{env} polynomial trend line and equation
Lower Laramie subbasin

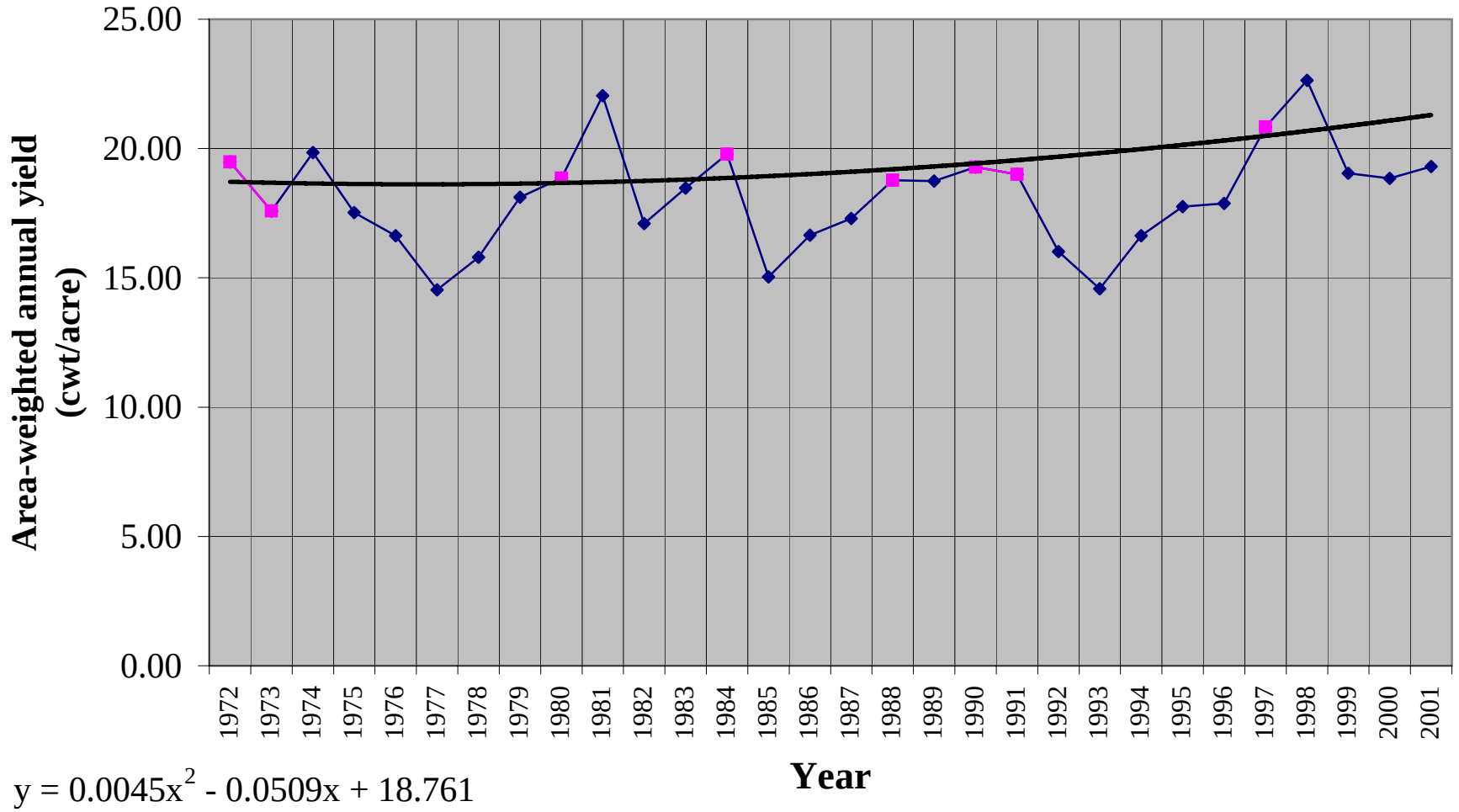
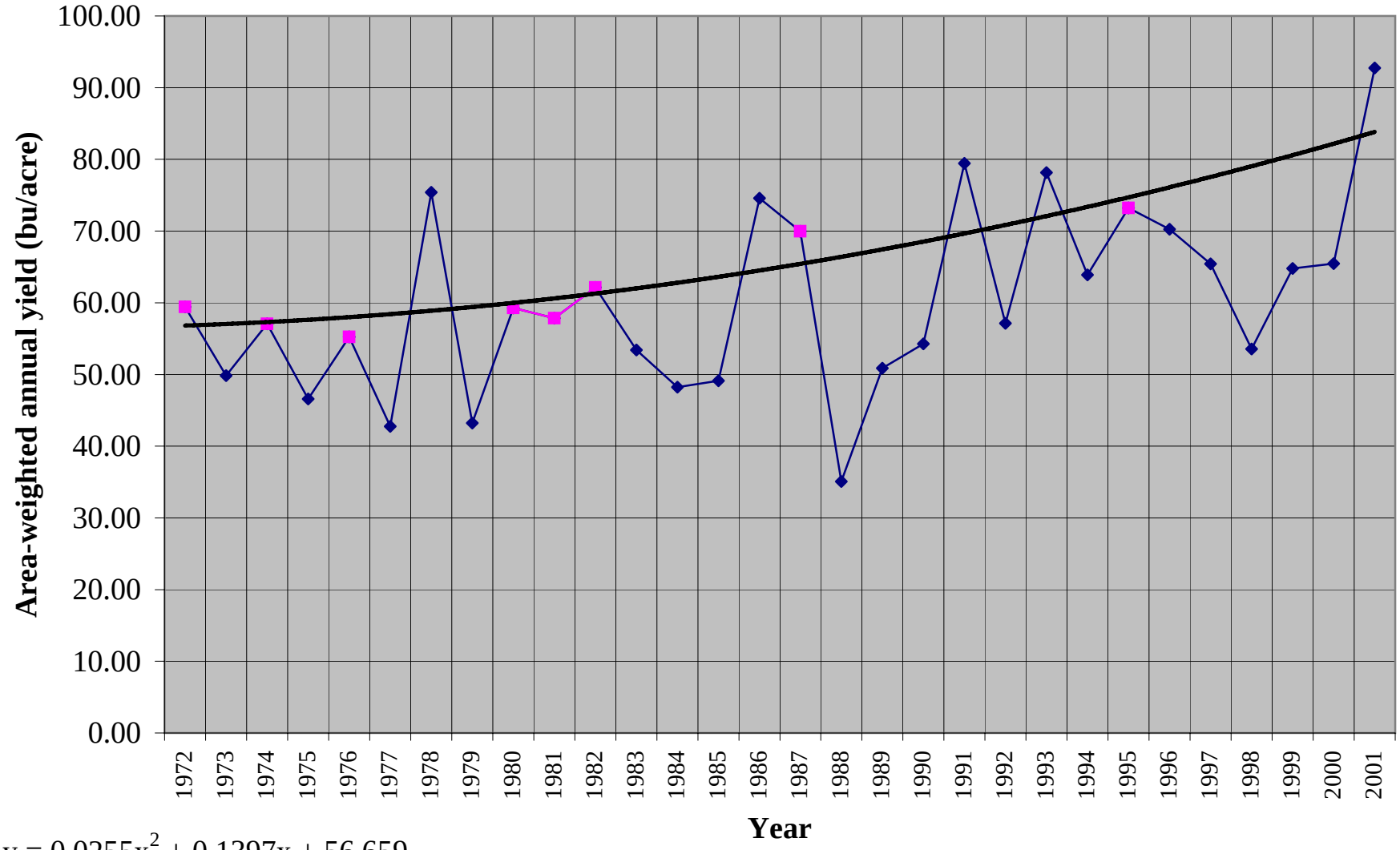


Figure 2.1.4.37.
Area-weighted annual oats yields and Y_{env} polynomial trend line and equation
Lower Laramie subbasin



$y = 0.0255x^2 + 0.1397x + 56.659$

Figure 2.1.4.38.
Area-weighted annual other hay yields and Y_{env} polynomial trendline and equation
Lower Laramie subbasin

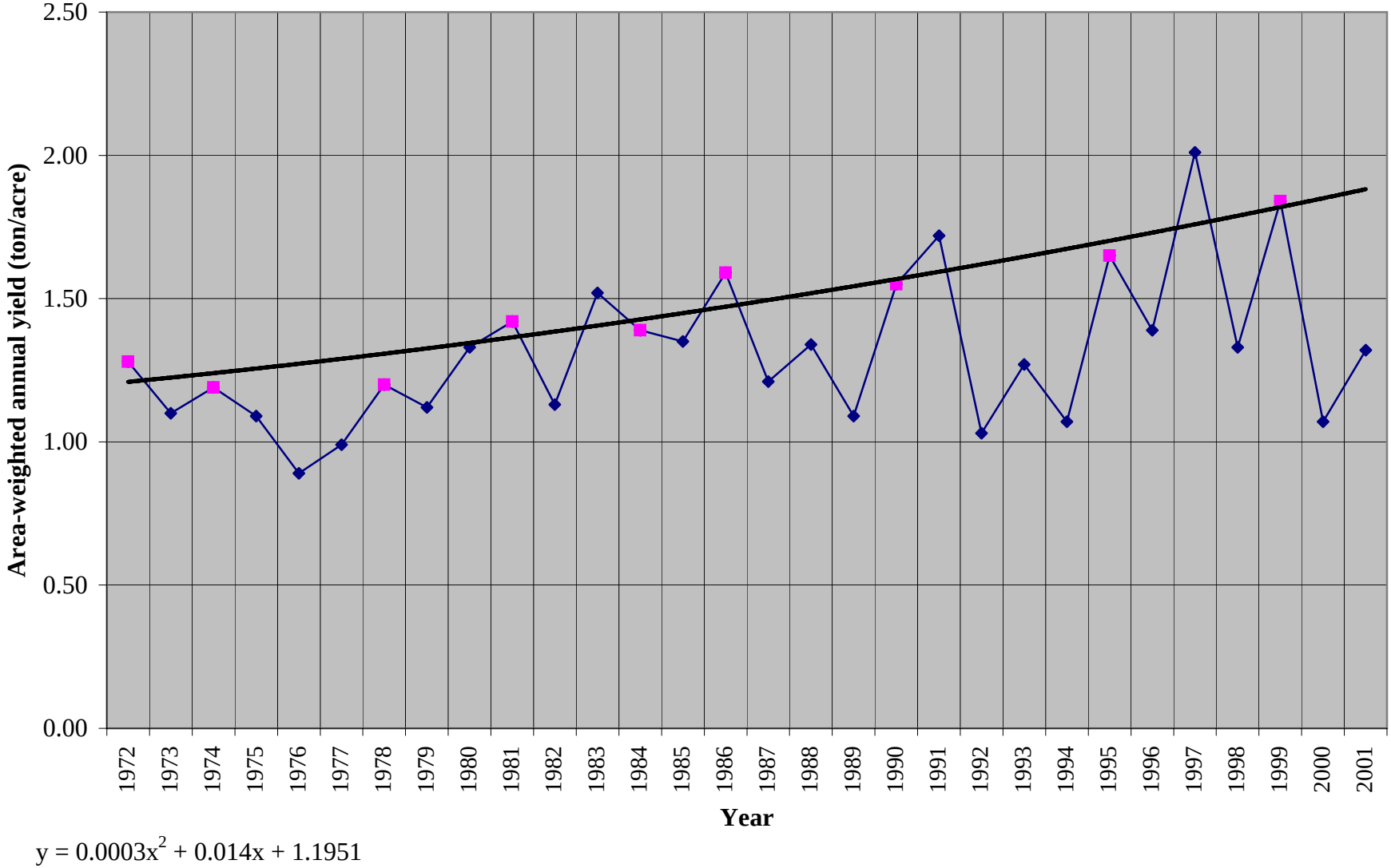
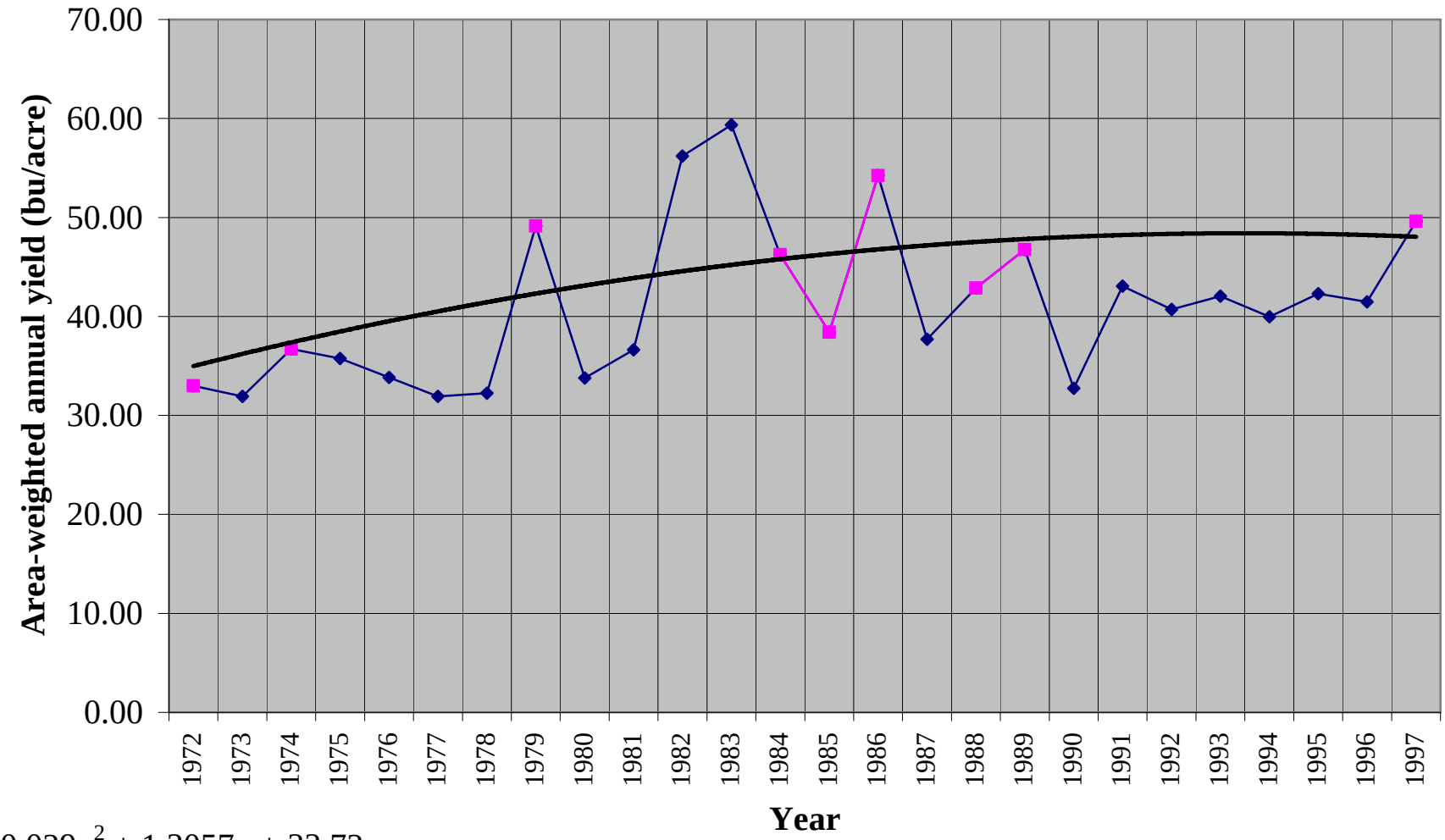
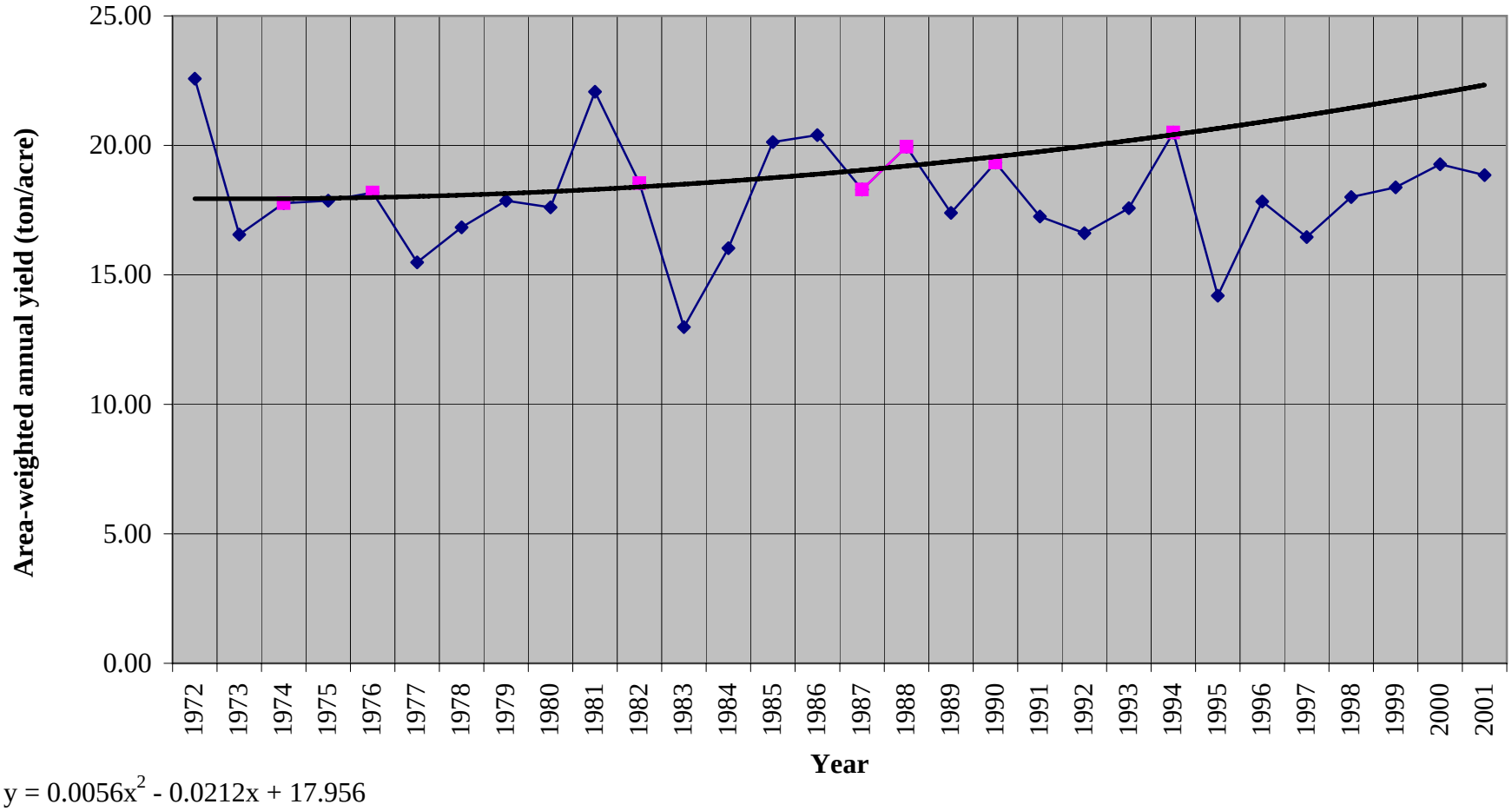


Figure 2.1.4.39.
Area-weighted annual spring wheat yields and Y_{env} polynomial trendline and equation
Lower Laramie subbasin



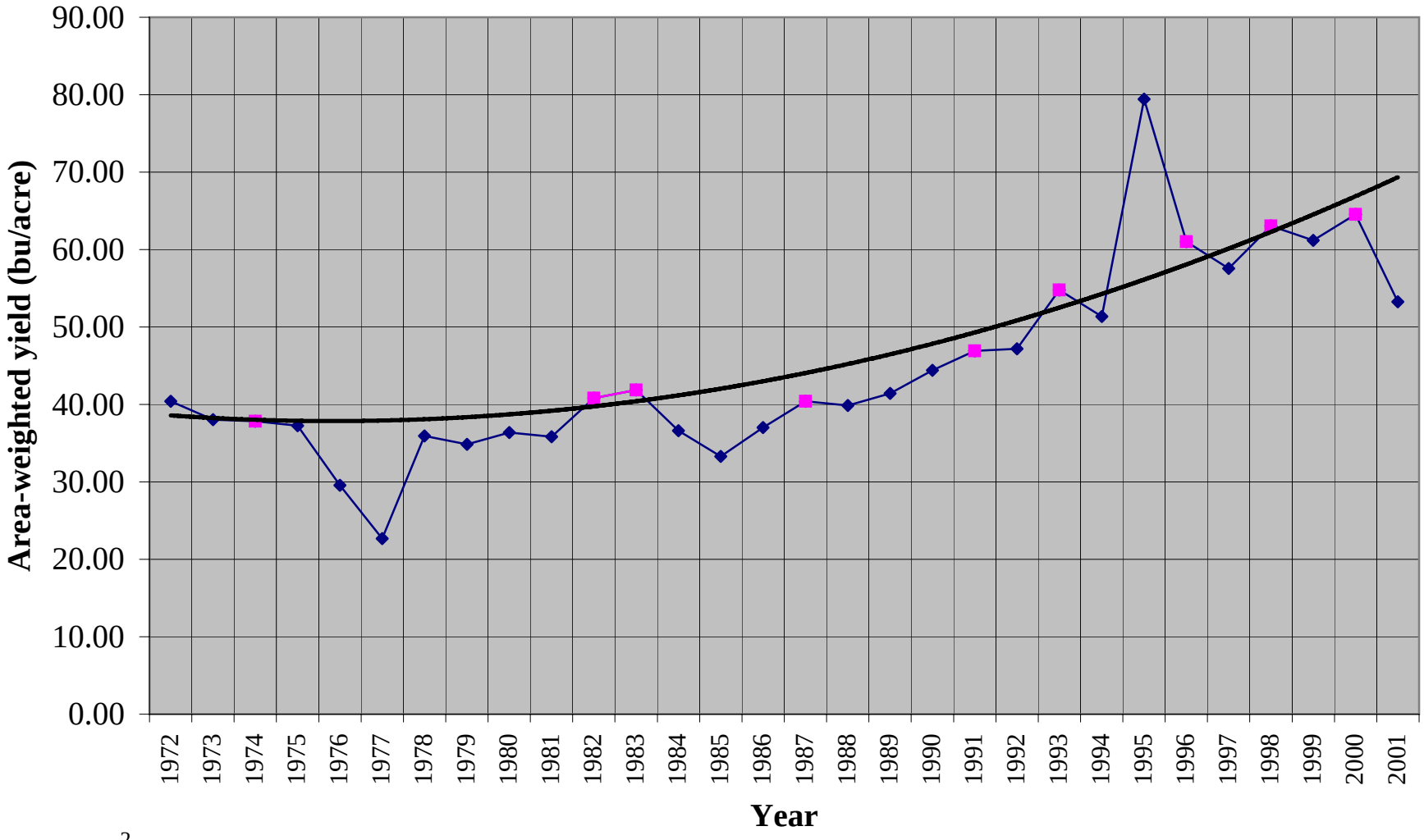
$y = -0.029x^2 + 1.3057x + 33.72$

Figure 2.1.4.40.
Area-weighted annual sugar beets yields and Y_{env} polynomial trendline and equation
Lower Laramie subbasin



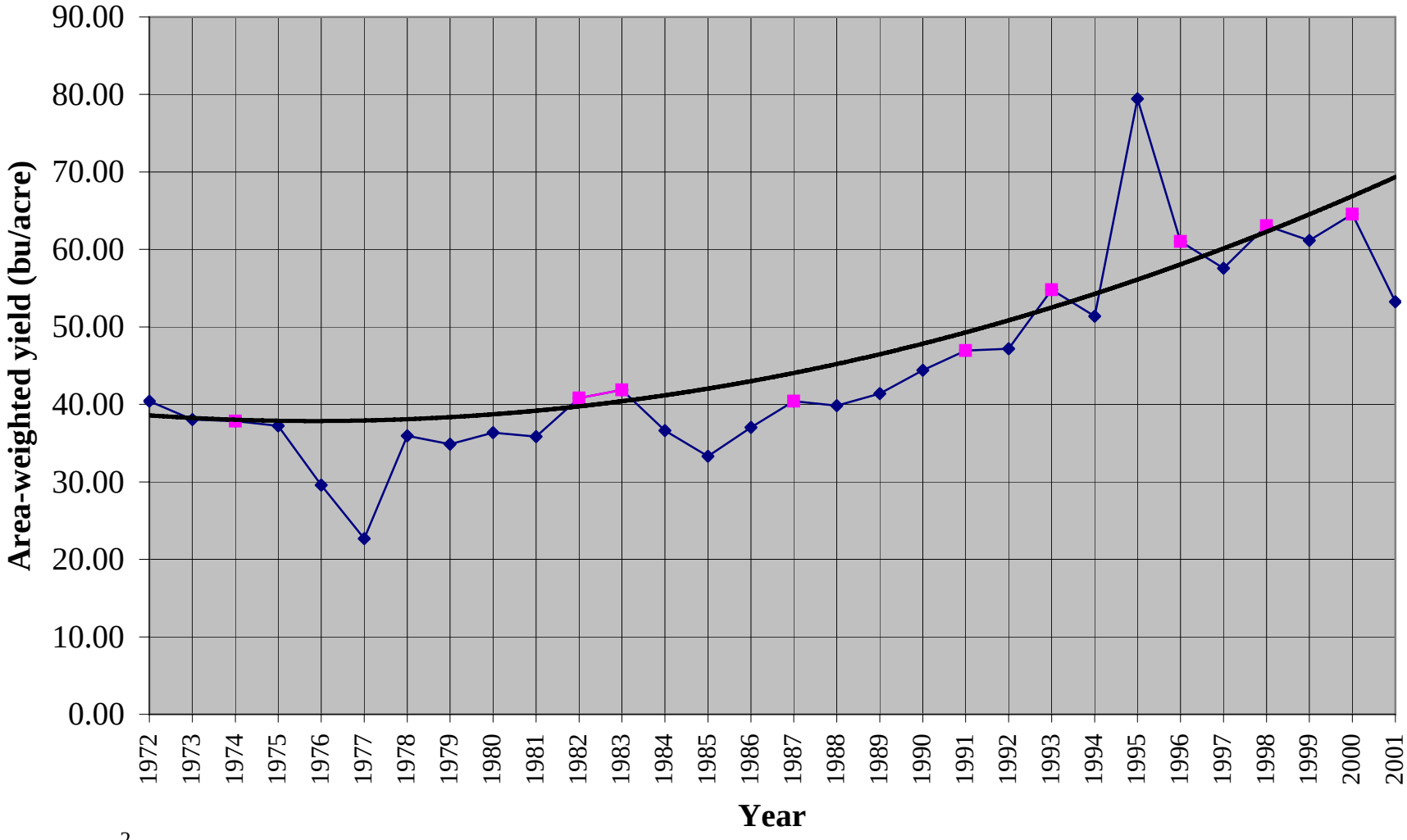
$y = 0.0056x^2 - 0.0212x + 17.956$

Figure 2.1.4.41.
Area-weighted winter wheat yields and Y_{env} polynomial trendline and equation
Lower Laramie subbasin



$y = 0.0497x^2 - 0.4796x + 39.013$

Figure 2.1.4.42
Area-weighted winter wheat yields and Y_{env} polynomial trendline and equation
Lower Laramie subbasin



$y = 0.0497x^2 - 0.4796x + 39.013$

Derivation of adjusted, yield-based crop evapotranspiration in the Lower Laramie subbasin during high stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.74 and Figures 2.1.4.34 through 2.1.4.42 is summarized in Table 2.1.4.75.

Table 2.1.4.75 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Lower Larramie subbasin

1983						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.78	5.38	7.15	5.31	--	--
Average yield, Yi (bu/acre) (2)			41.87			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			39.75			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**1.78**	**5.38**	**7.15**	**5.31**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.45	4.27	7.34	5.92	--	--
Average yield, Yi (bu/acre) (2)			59.35			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			44.57			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.45**	**4.27**	**7.34**	**5.92**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.54	4.74	7.42	6.87	2.47	1.30
Average yield, Yi (bu/acre) (2)			50.49			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.99			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.33**	**4.09**	**6.40**	**5.92**	**2.13**	**1.12**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.54	4.74	7.42	6.87	2.47	1.30
Average yield, Yi (bu/acre) (2)			53.01			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.28			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.36**	**4.18**	**6.55**	**6.06**	**2.18**	**1.15**

Table 2.1.4.75 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Lower Larramie subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.82	1.21	5.52	9.10	4.20	1.30
Average yield, Yi (cwt/acre) (2)			18.47			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.75			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.81**	**1.19**	**5.45**	**8.98**	**4.15**	**1.28**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.41	2.33	5.10	8.46	8.01	4.48
Average yield, Yi (tons/acre) (2)			12.98			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.40			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.05**	**1.73**	**3.79**	**6.29**	**5.96**	**3.33**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.82	1.93	7.17	9.64	7.35	2.17
Average yield, Yi (bu/acre) (2)			96.89			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			101.47			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.79**	**1.86**	**6.91**	**9.29**	**7.08**	**2.09**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.31	4.99	5.53	8.07	4.06	2.61
Average yield, Yi (tons/acre) (2)			2.91			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.08			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.19**	**4.73**	**5.24**	**7.65**	**3.85**	**2.47**

Table 2.1.4.75 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Lower Larramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.65	3.40	6.49	8.41	4.99	3.87
Average yield, Yi (tons/acre) (2)			1.52			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.39			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.65**	**3.40**	**6.49**	**8.41**	**4.99**	**3.87**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.99	2.24	4.55	5.94	5.62	4.02
Average yield, Yi (2)			1.52			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.39			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**0.99**	**2.24**	**4.55**	**5.94**	**5.62**	**4.02**
1984						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.84	6.83	8.28	5.49	--	--
Average yield, Yi (bu/acre) (2)			36.61			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			40.41			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.69**	**6.27**	**7.60**	**5.04**	--	--
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.50	5.41	8.50	6.12	--	--
Average yield, Yi (bu/acre) (2)			46.25			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			45.21			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.50**	**5.41**	**8.50**	**6.12**	**--**	**--**

Table 2.1.4.75 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Lower Larramie subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.59	6.01	8.59	7.10	2.27	1.10
Average yield, Yi (bu/acre) (2)			54.76			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			60.56			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.46**	**5.51**	**7.87**	**6.51**	**2.08**	**1.01**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.59	6.01	8.59	7.10	2.27	1.10
Average yield, Yi (bu/acre) (2)			47.79			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.01			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.27**	**4.81**	**6.88**	**5.68**	**1.82**	**0.88**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.85	1.54	6.39	9.40	3.87	1.10
Average yield, Yi (cwt/acre) (2)			19.78			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.80			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**0.85**	**1.54**	**6.39**	**9.40**	**3.87**	**1.10**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.46	2.95	5.90	8.75	7.37	3.77
Average yield, Yi (tons/acre) (2)			16.03			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.51			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.29**	**2.61**	**5.21**	**7.73**	**6.51**	**3.33**

Table 2.1.4.75 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Lower Larramie subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36)					
	x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.85	2.44	8.29	9.96	6.76	1.83
Average yield, Yi (bu/acre) (2)			91.90			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			102.42			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.78**	**2.24**	**7.61**	**9.14**	**6.20**	**1.68**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34)					
	x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.38	6.33	6.40	8.34	3.74	2.19
Average yield, Yi (tons/acre) (2)			3.08			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.10			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.37**	**6.29**	**6.36**	**8.29**	**3.72**	**2.18**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39)					
	x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.70	4.32	7.51	8.69	4.59	3.25
Average yield, Yi (tons/acre) (2)			1.39			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.41			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.68**	**4.26**	**7.41**	**8.57**	**4.53**	**3.21**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39)					
	x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.02	2.84	5.26	6.14	5.17	3.38
Average yield, Yi (2)			1.39			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.41			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.01**	**2.80**	**5.19**	**6.06**	**5.10**	**3.33**

Table 2.1.4.75 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Lower Larramie subbasin (cont)

Notes:

(1) See Table 2.1.4.44.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

Derivation of adjusted, yield-based crop evapotranspiration in the Lower Laramie subbasin during low stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.74 and Figures 2.1.4.34 through 2.1.4.42 is summarized in Table 2.1.4.76.

Table 2.1.4.76 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Lower Larramie subbasin

1990						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.31	6.02	8.63	4.89	--	--
Average yield, Yi (bu/acre) (2)			44.41			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			46.48			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.22**	**5.79**	**8.30**	**4.70**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.88	4.77	8.85	5.45	--	--
Average yield, Yi (bu/acre) (2)			32.73			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			47.83			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.36**	**3.46**	**6.42**	**3.95**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.99	5.30	8.95	6.32	2.19	1.24
Average yield, Yi (bu/acre) (2)			65.74			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.24			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.98**	**5.27**	**8.89**	**6.28**	**2.18**	**1.23**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.99	5.30	8.95	6.32	2.19	1.24
Average yield, Yi (bu/acre) (2)			54.16			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.44			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.65**	**4.39**	**7.42**	**5.24**	**1.82**	**1.03**

Table 2.1.4.76 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Lower Larramie subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.07	1.36	6.65	8.38	3.73	1.24
Average yield, Yi (cwt/acre) (2)			19.28			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.30			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.07**	**1.36**	**6.64**	**8.37**	**3.73**	**1.24**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.84	2.60	6.15	7.79	7.11	4.27
Average yield, Yi (tons/acre) (2)			19.33			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.39			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.84**	**2.59**	**6.13**	**7.77**	**7.09**	**4.26**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.07	2.15	8.64	8.87	6.52	2.07
Average yield, Yi (bu/acre) (2)			113.93			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			109.44			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.07**	**2.15**	**8.64**	**8.87**	**6.52**	**2.07**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.99	5.58	6.67	7.43	3.60	2.48
Average yield, Yi (tons/acre) (2)			2.94			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.30			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.68**	**5.00**	**5.98**	**6.66**	**3.23**	**2.22**

Table 2.1.4.76 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Lower Larramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.14	3.80	7.82	7.74	4.43	3.68
Average yield, Yi (tons/acre) (2)			1.55			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.54			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**2.14**	**3.80**	**7.82**	**7.74**	**4.43**	**3.68**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.28	2.50	5.48	5.47	4.99	3.83
Average yield, Yi (2)			1.55			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.54			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.28**	**2.50**	**5.48**	**5.47**	**4.99**	**3.83**
	1994					
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.44	7.00	8.71	5.02	--	--
Average yield, Yi (bu/acre) (2)			51.37			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			52.52			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.39**	**6.87**	**8.54**	**4.92**	--	--
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.99	5.55	8.93	5.61	--	--
Average yield, Yi (bu/acre) (2)			39.97			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			48.41			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.69**	**4.71**	**7.58**	**4.76**	**--**	**--**

Table 2.1.4.76 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Lower Larramie subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.11	6.16	9.03	6.50	2.37	1.25
Average yield, Yi (bu/acre) (2)			40.57			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			72.15			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.31**	**3.82**	**5.59**	**4.03**	**1.47**	**0.77**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.11	6.16	9.03	6.50	2.37	1.25
Average yield, Yi (bu/acre) (2)			63.89			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			72.07			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.90**	**5.55**	**8.14**	**5.86**	**2.14**	**1.13**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.13	1.58	6.71	8.61	4.04	1.25
Average yield, Yi (cwt/acre) (2)			16.63			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.82			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.97**	**1.36**	**5.77**	**7.40**	**3.47**	**1.08**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.94	3.03	6.21	8.01	7.70	4.29
Average yield, Yi (tons/acre) (2)			20.49			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.20			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.94**	**3.03**	**6.21**	**8.01**	**7.70**	**4.29**

Table 2.1.4.76 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Lower Larramie subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.13	2.51	8.72	9.12	7.06	2.08
Average yield, Yi (bu/acre) (2)			106.26			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			115.39			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.06**	**2.35**	**8.17**	**8.54**	**6.61**	**1.95**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.17	6.49	6.73	7.64	3.91	2.50
Average yield, Yi (tons/acre) (2)			3.42			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.49			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**3.17**	**6.49**	**6.73**	**7.64**	**3.91**	**2.50**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.26	4.43	7.90	7.96	4.80	3.70
Average yield, Yi (tons/acre) (2)			1.07			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.65			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.50**	**2.95**	**5.26**	**5.30**	**3.19**	**2.46**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1994 - 1972 = 22					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.36	2.91	5.53	5.62	5.40	3.85
Average yield, Yi (2)			1.07			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.65			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.90**	**1.94**	**3.68**	**3.74**	**3.59**	**2.56**

Table 2.1.4.76 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Lower Larramie subbasin (cont)

1992						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.67	6.68	7.64	4.64	--	--
Average yield, Yi (bu/acre) (2)			47.17			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			49.30			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.57**	**6.43**	**7.35**	**4.47**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	2.18	5.30	7.84	5.17	--	--
Average yield, Yi (bu/acre) (2)			40.70			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			48.23			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.88**	**4.58**	**6.78**	**4.47**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.31	5.88	7.92	6.00	2.14	1.28
Average yield, Yi (bu/acre) (2)			61.58			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			68.98			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**2.09**	**5.33**	**7.18**	**5.44**	**1.94**	**1.16**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.31	5.88	7.92	6.00	2.14	1.28
Average yield, Yi (bu/acre) (2)			57.14			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			69.65			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.95**	**4.96**	**6.68**	**5.06**	**1.81**	**1.08**

Table 2.1.4.76 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Lower Larramie subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.24	1.51	5.89	7.95	3.64	1.28
Average yield, Yi (cwt/acre) (2)			16.01			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.54			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.05**	**1.27**	**4.96**	**6.70**	**3.07**	**1.08**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.13	2.89	5.44	7.39	6.94	4.39
Average yield, Yi (tons/acre) (2)			16.61			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.77			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.83**	**2.49**	**4.68**	**6.36**	**5.98**	**3.78**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.24	2.39	7.65	8.42	6.37	2.13
Average yield, Yi (bu/acre) (2)			93.39			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			112.29			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.07**	**2.07**	**6.62**	**7.29**	**5.51**	**1.84**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.47	6.19	5.90	7.05	3.52	2.56
Average yield, Yi (tons/acre) (2)			2.78			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.39			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.88**	**5.13**	**4.89**	**5.84**	**2.92**	**2.12**

Table 2.1.4.76 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Lower Larramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.48	4.23	6.93	7.34	4.32	3.78
Average yield, Yi (tons/acre) (2)			1.03			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.60			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.64**	**2.79**	**4.58**	**4.85**	**2.85**	**2.50**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.49	2.78	4.85	5.19	4.87	3.94
Average yield, Yi (2)			1.03			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.60			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.98**	**1.84**	**3.20**	**3.43**	**3.22**	**2.60**
1989						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.47	6.49	7.94	5.60	6.95	4.11
Average yield, Yi (bu/acre) (2)			41.41			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			45.22			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.29**	**6.01**	**7.36**	**5.19**	--	--
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	2.01	5.15	8.14	6.25	--	--
Average yield, Yi (bu/acre) (2)			46.76			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			47.54			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.98**	**5.08**	**8.02**	**6.16**	**--**	**--**

Table 2.1.4.76 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Lower Larramie subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.13	5.72	8.23	7.25	2.28	1.17
Average yield, Yi (bu/acre) (2)			63.14			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.03			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**2.08**	**5.58**	**8.02**	**7.07**	**2.22**	**1.14**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.13	5.72	8.23	7.25	2.28	1.17
Average yield, Yi (bu/acre) (2)			51.17			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.40			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.71**	**4.58**	**6.59**	**5.80**	**1.83**	**0.94**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.14	1.46	6.12	9.61	3.88	1.17
Average yield, Yi (cwt/acre) (2)			18.74			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.20			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.12**	**1.43**	**5.99**	**9.41**	**3.80**	**1.15**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.97	2.81	5.66	8.93	7.39	4.01
Average yield, Yi (tons/acre) (2)			17.39			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.21			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.81**	**2.58**	**5.19**	**8.19**	**6.78**	**3.68**

Table 2.1.4.76 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Lower Larramie subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.14	2.32	7.95	10.17	6.78	1.94
Average yield, Yi (bu/acre) (2)			98.13			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			108.11			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.06**	**2.15**	**7.36**	**9.42**	**6.28**	**1.80**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.20	6.02	6.13	8.52	3.75	2.33
Average yield, Yi (tons/acre) (2)			2.99			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.26			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.95**	**5.55**	**5.65**	**7.85**	**3.45**	**2.15**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.29	4.11	7.20	8.88	4.60	3.46
Average yield, Yi (tons/acre) (2)			1.09			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.52			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.67**	**3.00**	**5.26**	**6.49**	**3.36**	**2.53**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.37	2.70	5.04	6.27	5.19	3.60
Average yield, Yi (2)			1.09			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.52			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.00**	**1.97**	**3.68**	**4.58**	**3.79**	**2.63**

Table 2.1.4.76 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Lower Larramie subbasin (cont)

Notes:
(1) See Table 2.1.4.44.
(2) See Table 2.1.4.54. for area-weighted annual yields
(3) See Table 2.1.4.53.
(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture
(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

Derivation of adjusted, yield-based crop evapotranspiration in the Lower Laramie subbasin during normal or average stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.74 and Figures 2.1.4.34 through 2.1.4.42 is summarized in Table 2.1.4.77.

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Lower Laramie subbasin

1995						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.08	4.56	6.95	5.05	--	--
Average yield, Yi (bu/acre) (2)			79.43			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			54.27			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.08**	**4.56**	**6.95**	**5.05**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.70	3.62	7.13	5.64	--	--
Average yield, Yi (bu/acre) (2)			42.30			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			48.41			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.51**	**3.22**	**6.35**	**5.02**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.80	4.02	7.21	6.54	2.33	1.10
Average yield, Yi (bu/acre) (2)			70.57			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			73.89			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.73**	**3.86**	**6.93**	**6.28**	**2.24**	**1.06**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.80	4.02	7.21	6.54	2.33	1.10
Average yield, Yi (bu/acre) (2)			73.22			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			73.36			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.80**	**4.01**	**7.20**	**6.53**	**2.33**	**1.10**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.97	1.03	5.36	8.66	3.97	1.10
Average yield, Yi (cwt/acre) (2)			17.75			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.97			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.88**	**0.93**	**4.84**	**7.82**	**3.59**	**0.99**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.66	1.97	4.95	8.05	7.57	3.78
Average yield, Yi (tons/acre) (2)			14.20			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.43			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.22**	**1.45**	**3.64**	**5.92**	**5.56**	**2.78**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.97	1.63	6.96	9.17	6.94	1.83
Average yield, Yi (bu/acre) (2)			84.38			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			117.04			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.75**	**1.27**	**5.41**	**7.12**	**5.39**	**1.42**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.71	4.23	5.37	7.68	3.84	2.20
Average yield, Yi (tons/acre) (2)			3.31			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.54			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.54**	**3.97**	**5.04**	**7.20**	**3.60**	**2.06**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.93	2.89	6.30	8.00	4.71	3.26
Average yield, Yi (tons/acre) (2)			1.65			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.68			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.90**	**2.84**	**6.19**	**7.86**	**4.63**	**3.20**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1995 - 1972 = 23					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.16	1.89	4.42	5.65	5.31	3.39
Average yield, Yi (2)			1.65			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.68			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.14**	**1.86**	**4.34**	**5.55**	**5.22**	**3.33**
	1986					
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.26	6.46	8.44	5.30	--	--
Average yield, Yi (bu/acre) (2)			37.03			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			42.04			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.03**	**5.79**	**7.57**	**4.75**	--	--
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.84	5.12	8.66	5.91	--	--
Average yield, Yi (bu/acre) (2)			54.23			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			46.32			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.84**	**5.12**	**8.66**	**5.91**	**--**	**--**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.96	5.69	8.76	6.86	2.33	1.01
Average yield, Yi (bu/acre) (2)			67.43			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.03			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.96**	**5.69**	**8.76**	**6.86**	**2.33**	**1.01**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.96	5.69	8.76	6.86	2.33	1.01
Average yield, Yi (bu/acre) (2)			75.30			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.61			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.96**	**5.69**	**8.76**	**6.86**	**2.33**	**1.01**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.05	1.46	6.51	9.09	3.96	1.01
Average yield, Yi (cwt/acre) (2)			16.65			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.93			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.94**	**1.31**	**5.83**	**8.14**	**3.55**	**0.90**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.80	2.79	6.02	8.45	7.55	3.48
Average yield, Yi (tons/acre) (2)			20.40			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.76			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.80**	**2.79**	**6.02**	**8.45**	**7.55**	**3.48**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36)					
	x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.05	2.31	8.46	9.62	6.92	1.69
Average yield, Yi (bu/acre) (2)			109.63			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			104.50			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.05**	**2.31**	**8.46**	**9.62**	**6.92**	**1.69**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34)					
	x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.94	5.99	6.53	8.06	3.83	2.03
Average yield, Yi (tons/acre) (2)			3.18			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.15			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.94**	**5.99**	**6.53**	**8.06**	**3.83**	**2.03**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39)					
	x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.10	4.09	7.66	8.39	4.70	3.01
Average yield, Yi (tons/acre) (2)			1.59			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.45			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**2.10**	**4.09**	**7.66**	**8.39**	**4.70**	**3.01**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39)					
	x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.26	2.68	5.37	5.93	5.30	3.13
Average yield, Yi (2)			1.59			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.45			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.26**	**2.68**	**5.37**	**5.93**	**5.30**	**3.13**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

1980						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.27	5.92	9.20	5.71	--	--
Average yield, Yi (bu/acre) (2)			36.36			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			38.36			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.17**	**5.65**	**8.78**	**5.45**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.85	4.69	9.44	6.37	--	--
Average yield, Yi (bu/acre) (2)			33.78			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			42.31			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.53**	**3.87**	**7.79**	**5.25**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.96	5.21	9.54	7.39	2.20	1.24
Average yield, Yi (bu/acre) (2)			49.16			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.89			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.68**	**4.46**	**8.17**	**6.33**	**1.88**	**1.06**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.96	5.21	9.54	7.39	2.20	1.24
Average yield, Yi (bu/acre) (2)			59.24			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.41			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.96**	**5.20**	**9.52**	**7.37**	**2.19**	**1.24**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.05	1.33	7.10	9.78	3.75	1.24
Average yield, Yi (cwt/acre) (2)			18.86			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.64			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**1.05**	**1.33**	**7.10**	**9.78**	**3.75**	**1.24**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.81	2.56	6.56	9.10	7.15	4.25
Average yield, Yi (tons/acre) (2)			17.61			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.14			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.76**	**2.49**	**6.39**	**8.87**	**6.97**	**4.14**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.05	2.12	9.22	10.36	6.56	2.06
Average yield, Yi (bu/acre) (2)			91.57			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			99.01			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.99**	**1.99**	**8.67**	**9.74**	**6.17**	**1.94**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.94	5.48	7.11	8.68	3.63	2.47
Average yield, Yi (tons/acre) (2)			2.82			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.02			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.75**	**5.13**	**6.66**	**8.13**	**3.40**	**2.31**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.10	3.74	8.34	9.04	4.45	3.67
Average yield, Yi (tons/acre) (2)			1.33			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.33			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**2.10**	**3.74**	**8.34**	**9.04**	**4.45**	**3.67**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.26	2.46	5.85	6.38	5.02	3.81
Average yield, Yi (2)			1.33			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.33			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.26**	**2.46**	**5.85**	**6.38**	**5.02**	**3.81**
	1999					
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.92	5.74	7.42	5.34	--	--
Average yield, Yi (bu/acre) (2)			61.17			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.30			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.89**	**5.65**	**7.30**	**5.26**	--	--
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)			Not culativated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)						

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.66	5.05	7.69	6.91	2.26	1.08
Average yield, Yi (bu/acre) (2)			74.98			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			81.91			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.54**	**4.68**	**7.12**	**6.40**	**2.09**	**1.00**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.66	5.05	7.69	6.91	2.26	1.08
Average yield, Yi (bu/acre) (2)			64.79			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			79.02			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.40**	**4.26**	**6.49**	**5.83**	**1.91**	**0.91**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.89	1.29	5.72	9.16	3.85	1.08
Average yield, Yi (cwt/acre) (2)			19.04			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.67			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.83**	**1.20**	**5.33**	**8.53**	**3.59**	**1.01**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.53	2.48	5.29	8.51	7.34	3.72
Average yield, Yi (tons/acre) (2)			18.38			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.47			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.34**	**2.17**	**4.63**	**7.44**	**6.42**	**3.25**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.89	2.05	7.43	9.70	6.73	1.80
Average yield, Yi (bu/acre) (2)			133.12			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			124.26			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.89**	**2.05**	**7.43**	**9.70**	**6.73**	**1.80**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.50	5.32	5.73	8.12	3.72	2.16
Average yield, Yi (tons/acre) (2)			3.70			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.79			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.44**	**5.20**	**5.60**	**7.94**	**3.64**	**2.11**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.78	3.63	6.73	8.46	4.57	3.21
Average yield, Yi (tons/acre) (2)			1.84			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.79			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.78**	**3.63**	**6.73**	**8.46**	**4.57**	**3.21**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1999 - 1972 = 27					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.07	2.38	4.71	5.98	5.15	3.34
Average yield, Yi (2)			1.84			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.79			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.07**	**2.38**	**4.71**	**5.98**	**5.15**	**3.34**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

1991						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.12	5.72	7.45	5.05	--	--
Average yield, Yi (bu/acre) (2)			46.93			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			47.84			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.08**	**5.63**	**7.33**	**4.97**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.72	4.53	7.65	5.64	--	--
Average yield, Yi (bu/acre) (2)			43.05			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			48.06			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.56**	**4.12**	**6.96**	**5.13**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.83	5.03	7.73	6.54	2.19	1.16
Average yield, Yi (bu/acre) (2)			68.48			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.56			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.83**	**5.03**	**7.73**	**6.54**	**2.19**	**1.16**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.83	5.03	7.73	6.54	2.19	1.16
Average yield, Yi (bu/acre) (2)			80.01			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			68.52			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.83**	**5.03**	**7.73**	**6.54**	**2.19**	**1.16**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.98	1.29	5.75	8.66	3.72	1.16
Average yield, Yi (cwt/acre) (2)			19.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.42			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.96**	**1.27**	**5.64**	**8.50**	**3.65**	**1.14**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.69	2.47	5.31	8.05	7.10	4.00
Average yield, Yi (tons/acre) (2)			17.25			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.57			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.52**	**2.22**	**4.76**	**7.22**	**6.37**	**3.59**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.98	2.04	7.46	9.17	6.51	1.94
Average yield, Yi (bu/acre) (2)			108.27			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			110.83			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.96**	**2.00**	**7.32**	**9.00**	**6.39**	**1.90**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.75	5.30	5.76	7.68	3.60	2.33
Average yield, Yi (tons/acre) (2)			3.70			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.34			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.75**	**5.30**	**5.76**	**7.68**	**3.60**	**2.33**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.96	3.62	6.76	8.00	4.42	3.45
Average yield, Yi (tons/acre) (2)			1.72			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.57			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.96**	**3.62**	**6.76**	**8.00**	**4.42**	**3.45**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.18	2.37	4.74	5.65	4.98	3.59
Average yield, Yi (2)			1.72			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.57			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.18**	**2.37**	**4.74**	**5.65**	**4.98**	**3.59**
2000						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.42	6.69	8.53	5.75	--	--
Average yield, Yi (bu/acre) (2)			64.54			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.55			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.42**	**6.69**	**8.53**	**5.75**	--	--
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)						

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.10	5.89	8.85	7.44	2.43	1.20
Average yield, Yi (bu/acre) (2)			96.17			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			84.17			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**2.10**	**5.89**	**8.85**	**7.44**	**2.43**	**1.20**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.10	5.89	8.85	7.44	2.43	1.20
Average yield, Yi (bu/acre) (2)			65.45			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			80.56			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.76**	**4.93**	**7.41**	**6.23**	**2.03**	**1.00**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.12	1.51	6.58	9.85	4.14	1.20
Average yield, Yi (cwt/acre) (2)			18.85			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.86			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.03**	**1.38**	**6.03**	**9.02**	**3.79**	**1.10**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.93	2.89	6.08	9.16	7.89	4.11
Average yield, Yi (tons/acre) (2)			19.27			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.75			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.74**	**2.60**	**5.48**	**8.25**	**7.11**	**3.70**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.12	2.39	8.55	10.44	7.23	1.99
Average yield, Yi (bu/acre) (2)			131.84			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			126.23			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.12**	**2.39**	**8.55**	**10.44**	**7.23**	**1.99**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.15	6.20	6.60	8.74	4.00	2.39
Average yield, Yi (tons/acre) (2)			3.23			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.85			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.67**	**5.25**	**5.59**	**7.40**	**3.39**	**2.02**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.25	4.23	7.74	9.10	4.91	3.55
Average yield, Yi (tons/acre) (2)			1.07			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.82			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.37**	**2.57**	**4.70**	**5.53**	**2.98**	**2.16**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 2000 - 1972 = 28					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.35	2.78	5.42	6.43	5.54	3.69
Average yield, Yi (2)			1.07			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.82			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.82**	**1.69**	**3.29**	**3.91**	**3.37**	**2.24**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

1993						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.19	6.24	7.06	4.95	--	--
Average yield, Yi (bu/acre) (2)			54.79			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			50.86			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.19**	**6.24**	**7.06**	**4.95**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.79	4.95	7.25	5.52	--	--
Average yield, Yi (bu/acre) (2)			42.04			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			48.35			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.59**	**4.39**	**6.43**	**4.89**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.90	5.49	7.33	6.40	2.20	1.08
Average yield, Yi (bu/acre) (2)			67.26			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			70.51			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.82**	**5.27**	**7.04**	**6.14**	**2.11**	**1.04**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.90	5.49	7.33	6.40	2.20	1.08
Average yield, Yi (bu/acre) (2)			78.17			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			70.84			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.90**	**5.49**	**7.33**	**6.40**	**2.20**	**1.08**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.02	1.41	5.45	8.48	3.74	1.08
Average yield, Yi (cwt/acre) (2)			14.58			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.68			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.79**	**1.09**	**4.22**	**6.57**	**2.90**	**0.84**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.75	2.70	5.03	7.89	7.13	3.70
Average yield, Yi (tons/acre) (2)			17.58			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.98			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.57**	**2.42**	**4.50**	**7.07**	**6.39**	**3.31**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.02	2.23	7.07	8.98	6.54	1.79
Average yield, Yi (bu/acre) (2)			79.74			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			113.81			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.78**	**1.70**	**5.38**	**6.83**	**4.97**	**1.36**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.85	5.78	5.46	7.52	3.62	2.15
Average yield, Yi (tons/acre) (2)			3.44			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.44			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.85**	**5.78**	**5.46**	**7.52**	**3.62**	**2.15**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.03	3.95	6.40	7.84	4.44	3.19
Average yield, Yi (tons/acre) (2)			1.27			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.62			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.61**	**3.14**	**5.08**	**6.23**	**3.53**	**2.53**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1993 - 1972 = 21					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.22	2.59	4.49	5.54	5.00	3.32
Average yield, Yi (2)			1.27			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.62			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.97**	**2.06**	**3.57**	**4.40**	**3.97**	**2.64**
2001						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.75	6.11	8.75	5.84	0	0
Average yield, Yi (bu/acre) (2)			53.25			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.90			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.44**	**5.03**	**7.20**	**4.80**	--	--
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)			Not culativated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)						

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35)					
	x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.51	5.37	9.08	7.56	2.57	1.27
Average yield, Yi (bu/acre) (2)			86.13			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			86.55			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.50**	**5.35**	**9.04**	**7.53**	**2.56**	**1.26**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38)					
	x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.51	5.37	9.08	7.56	2.57	1.27
Average yield, Yi (bu/acre) (2)			92.74			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			82.16			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.51**	**5.37**	**9.08**	**7.56**	**2.57**	**1.27**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37)					
	x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.81	1.38	6.75	10.02	4.37	1.27
Average yield, Yi (cwt/acre) (2)			19.30			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			21.07			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.75**	**1.28**	**6.26**	**9.29**	**4.05**	**1.18**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41)					
	x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.39	2.64	6.24	9.32	8.34	4.37
Average yield, Yi (tons/acre) (2)			18.85			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			22.05			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.21**	**2.31**	**5.45**	**8.14**	**7.29**	**3.82**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.81	2.18	8.77	10.61	7.65	2.12
Average yield, Yi (bu/acre) (2)			115.88			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			128.26			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.75**	**2.01**	**8.09**	**9.79**	**7.06**	**1.96**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.27	5.66	6.77	8.89	4.23	2.55
Average yield, Yi (tons/acre) (2)			3.30			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.93			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.92**	**4.80**	**5.74**	**7.53**	**3.58**	**2.16**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.62	3.86	7.94	9.26	5.19	3.77
Average yield, Yi (tons/acre) (2)			1.32			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.85			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.62**	**3.86**	**7.94**	**9.26**	**5.19**	**3.77**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 2001 - 1972 = 29					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.97	2.54	5.56	6.54	5.85	3.92
Average yield, Yi (2)			1.32			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.85			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**0.97**	**2.54**	**5.56**	**6.54**	**5.85**	**3.92**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

1985						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.59	6.92	8.23	5.42	--	--
Average yield, Yi (bu/acre) (2)			33.30			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			41.18			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.16**	**5.77**	**6.86**	**4.52**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	2.11	5.48	8.45	6.04	--	--
Average yield, Yi (bu/acre) (2)			38.40			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			45.79			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.81**	**4.71**	**7.26**	**5.19**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.24	6.09	8.54	7.01	2.36	1.03
Average yield, Yi (bu/acre) (2)			54.66			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.25			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**2.03**	**5.52**	**7.74**	**6.35**	**2.14**	**0.93**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.24	6.09	8.54	7.01	2.36	1.03
Average yield, Yi (bu/acre) (2)			48.42			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.78			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.79**	**4.88**	**6.84**	**5.62**	**1.89**	**0.83**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37)					
	x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.20	1.56	6.35	9.29	4.01	1.03
Average yield, Yi (cwt/acre) (2)			15.04			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.86			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.99**	**1.29**	**5.23**	**7.65**	**3.30**	**0.85**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41)					
	x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.06	2.99	5.87	8.64	7.65	3.53
Average yield, Yi (tons/acre) (2)			20.13			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.63			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**2.06**	**2.99**	**5.87**	**8.64**	**7.65**	**3.53**
Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36)					
	x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.20	2.47	8.25	9.84	7.01	1.71
Average yield, Yi (bu/acre) (2)			93.21			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			103.43			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.11**	**2.27**	**7.60**	**9.06**	**6.46**	**1.57**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34)					
	x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.36	6.41	6.37	8.23	3.88	2.06
Average yield, Yi (tons/acre) (2)			2.68			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.13			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.90**	**5.53**	**5.50**	**7.10**	**3.35**	**1.78**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.40	4.37	7.47	8.58	4.76	3.05
Average yield, Yi (tons/acre) (2)			1.35			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.43			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**2.40**	**4.37**	**7.47**	**8.58**	**4.76**	**3.05**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.44	2.87	5.23	6.06	5.37	3.17
Average yield, Yi (2)			1.35			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.43			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.44**	**2.87**	**5.23**	**6.06**	**5.37**	**3.17**
1988						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.58	6.73	8.91	5.24	--	--
Average yield, Yi (bu/acre) (2)			39.85			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			44.06			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.37**	**6.17**	**8.17**	**4.80**	--	--
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	2.10	5.33	9.15	5.85	**--**	**--**
Average yield, Yi (bu/acre) (2)			42.88			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			47.19			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.93**	**4.91**	**8.42**	**5.39**	**--**	**--**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35)					
	x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.23	5.92	9.25	6.79	2.38	1.18
Average yield, Yi (bu/acre) (2)			42.88			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.93			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.59**	**4.22**	**6.60**	**4.85**	**1.70**	**0.84**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38)					
	x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.23	5.92	9.25	6.79	2.38	1.18
Average yield, Yi (bu/acre) (2)			34.49			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.42			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.31**	**3.49**	**5.45**	**4.00**	**1.40**	**0.69**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37)					
	x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.20	1.52	6.87	8.99	4.05	1.18
Average yield, Yi (cwt/acre) (2)			18.77			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.10			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.18**	**1.50**	**6.77**	**8.85**	**3.99**	**1.16**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41)					
	x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.06	2.91	6.36	8.36	7.72	4.06
Average yield, Yi (tons/acre) (2)			19.95			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.05			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**2.06**	**2.91**	**6.36**	**8.36**	**7.72**	**4.06**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.20	2.41	8.93	9.52	7.08	1.97
Average yield, Yi (bu/acre) (2)			107.66			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			106.84			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.20**	**2.41**	**8.93**	**9.52**	**7.08**	**1.97**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.35	6.24	6.89	7.97	3.92	2.36
Average yield, Yi (tons/acre) (2)			2.70			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.22			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.83**	**5.28**	**5.83**	**6.74**	**3.32**	**2.00**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.39	4.25	8.08	8.31	4.81	3.50
Average yield, Yi (tons/acre) (2)			1.34			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.50			
Adjusted maximum evapotranspiration, $ET_{OHAY(HIGH)}$ (inches per month) (5)	**2.39**	**4.25**	**8.08**	**8.31**	**4.81**	**3.50**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.43	2.79	5.67	5.87	5.42	3.64
Average yield, Yi (2)			1.34			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.50			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.43**	**2.79**	**5.67**	**5.87**	**5.42**	**3.64**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

1997						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.93	6.38	7.80	5.21	--	--
Average yield, Yi (bu/acre) (2)			57.57			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.09			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.91**	**6.33**	**7.74**	**5.17**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.58	5.06	8.00	5.81	--	--
Average yield, Yi (bu/acre) (2)			49.61			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			48.24			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.58**	**5.06**	**8.00**	**5.81**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.67	5.62	8.09	6.74	2.16	1.14
Average yield, Yi (bu/acre) (2)			82.66			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			77.68			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.67**	**5.62**	**8.09**	**6.74**	**2.16**	**1.14**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.67	5.62	8.09	6.74	2.16	1.14
Average yield, Yi (bu/acre) (2)			65.42			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			76.09			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.47**	**4.93**	**7.10**	**5.92**	**1.90**	**1.00**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.90	1.44	6.01	8.93	3.67	1.14
Average yield, Yi (cwt/acre) (2)			20.83			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.30			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**0.90**	**1.44**	**6.01**	**8.93**	**3.67**	**1.14**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.54	2.76	5.56	8.31	7.00	3.91
Average yield, Yi (tons/acre) (2)			16.46			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.93			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.25**	**2.25**	**4.53**	**6.77**	**5.70**	**3.18**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.90	2.28	7.81	9.46	6.42	1.90
Average yield, Yi (bu/acre) (2)			132.97			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			120.52			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.90**	**2.28**	**7.81**	**9.46**	**6.42**	**1.90**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.51	5.92	6.03	7.92	3.55	2.28
Average yield, Yi (tons/acre) (2)			3.94			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.66			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.51**	**5.92**	**6.03**	**7.92**	**3.55**	**2.28**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.79	4.04	7.07	8.25	4.36	3.38
Average yield, Yi (tons/acre) (2)			2.01			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.73			
Adjusted maximum evapotranspiration, $ET_{OHAY(HIGH)}$ (inches per month) (5)	**1.79**	**4.04**	**7.07**	**8.25**	**4.36**	**3.38**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1997 - 1972 = 25					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.07	2.65	4.96	5.83	4.91	3.51
Average yield, Yi (2)			2.01			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.73			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.07**	**2.65**	**4.96**	**5.83**	**4.91**	**3.51**
1996						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.46	5.75	8.46	5.18	--	--
Average yield, Yi (bu/acre) (2)			61.03			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			56.13			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.46**	**5.75**	**8.46**	**5.18**	--	--
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	2.00	4.56	8.68	5.78	--	--
Average yield, Yi (bu/acre) (2)			41.48			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			48.35			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.75**	**4.00**	**7.61**	**5.07**	**--**	**--**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35)					
	x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.12	5.06	8.78	6.70	2.33	1.18
Average yield, Yi (bu/acre) (2)			80.14			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			75.73			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**2.12**	**5.06**	**8.78**	**6.70**	**2.33**	**1.18**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38)					
	x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.12	5.06	8.78	6.70	2.33	1.18
Average yield, Yi (bu/acre) (2)			70.26			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			74.70			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**2.01**	**4.80**	**8.33**	**6.35**	**2.21**	**1.12**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37)					
	x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.14	1.30	6.53	8.87	3.97	1.18
Average yield, Yi (cwt/acre) (2)			17.88			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.13			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.03**	**1.17**	**5.90**	**8.01**	**3.58**	**1.07**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41)					
	x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.96	2.49	6.04	8.25	7.57	4.06
Average yield, Yi (tons/acre) (2)			17.83			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.67			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.73**	**2.19**	**5.32**	**7.26**	**6.67**	**3.57**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.14	2.06	8.48	9.40	6.94	1.97
Average yield, Yi (bu/acre) (2)			104.93			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			118.75			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.03**	**1.87**	**7.69**	**8.52**	**6.29**	**1.79**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.19	5.33	6.54	7.87	3.84	2.36
Average yield, Yi (tons/acre) (2)			3.38			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.60			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**3.00**	**5.02**	**6.16**	**7.41**	**3.62**	**2.22**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.28	3.64	7.68	8.20	4.71	3.50
Average yield, Yi (tons/acre) (2)			1.39			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.70			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.88**	**3.01**	**6.35**	**6.78**	**3.89**	**2.89**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1996 - 1972 = 24					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.37	2.39	5.38	5.79	5.31	3.64
Average yield, Yi (2)			1.39			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.70			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.13**	**1.97**	**4.45**	**4.78**	**4.39**	**3.01**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

1987						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.77	6.27	8.44	5.33	--	--
Average yield, Yi (bu/acre) (2)			40.41			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			43.00			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.62**	**5.94**	**8.00**	**5.05**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	2.26	4.97	8.66	5.95	--	--
Average yield, Yi (bu/acre) (2)			37.70			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			46.78			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.88**	**4.13**	**7.20**	**4.95**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.40	5.52	8.76	6.90	2.17	1.24
Average yield, Yi (bu/acre) (2)			54.90			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.93			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**2.13**	**4.91**	**7.79**	**6.13**	**1.93**	**1.10**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.40	5.52	8.76	6.90	2.17	1.24
Average yield, Yi (bu/acre) (2)			69.22			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.49			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**2.40**	**5.52**	**8.76**	**6.90**	**2.17**	**1.24**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.28	1.41	6.51	9.14	3.70	1.24
Average yield, Yi (cwt/acre) (2)			17.29			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.01			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.18**	**1.30**	**6.00**	**8.42**	**3.41**	**1.14**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.21	2.71	6.02	8.50	7.05	4.26
Average yield, Yi (tons/acre) (2)			18.29			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.90			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**2.15**	**2.63**	**5.85**	**8.26**	**6.85**	**4.14**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.28	2.24	8.46	9.69	6.47	2.06
Average yield, Yi (bu/acre) (2)			99.75			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			105.64			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.22**	**2.14**	**8.08**	**9.26**	**6.18**	**1.97**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.60	5.81	6.53	8.11	3.58	2.48
Average yield, Yi (tons/acre) (2)			2.77			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.19			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**3.15**	**5.08**	**5.71**	**7.09**	**3.13**	**2.17**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.57	3.97	7.66	8.45	4.39	3.67
Average yield, Yi (tons/acre) (2)			1.21			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.47			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**2.14**	**3.30**	**6.37**	**7.03**	**3.65**	**3.05**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.54	2.60	5.37	5.97	4.95	3.82
Average yield, Yi (2)			1.21			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.47			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.28**	**2.16**	**4.47**	**4.96**	**4.12**	**3.18**
1982						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.32	5.63	7.26	5.51	--	--
Average yield, Yi (bu/acre) (2)			40.82			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			39.19			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.32**	**5.63**	**7.26**	**5.51**	--	--
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.89	4.46	7.45	6.15	--	--
Average yield, Yi (bu/acre) (2)			56.21			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			43.88			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.89**	**4.46**	**7.45**	**6.15**	**--**	**--**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.01	4.95	7.53	7.14	2.33	1.06
Average yield, Yi (bu/acre) (2)			61.90			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.52			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**2.01**	**4.95**	**7.53**	**7.14**	**2.33**	**1.06**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.01	4.95	7.53	7.14	2.33	1.06
Average yield, Yi (bu/acre) (2)			61.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			60.61			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**2.01**	**4.95**	**7.53**	**7.14**	**2.33**	**1.06**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.08	1.27	5.60	9.45	3.96	1.06
Average yield, Yi (cwt/acre) (2)			17.10			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.70			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.00**	**1.18**	**5.18**	**8.75**	**3.67**	**0.98**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.85	2.43	5.17	8.79	7.56	3.66
Average yield, Yi (tons/acre) (2)			18.54			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.30			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.85**	**2.43**	**5.17**	**8.79**	**7.56**	**3.66**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.08	2.01	7.27	10.01	6.93	1.77
Average yield, Yi (bu/acre) (2)			105.27			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			100.59			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.08**	**2.01**	**7.27**	**10.01**	**6.93**	**1.77**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.01	5.22	5.61	8.38	3.83	2.13
Average yield, Yi (tons/acre) (2)			2.58			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.06			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.56**	**4.44**	**4.77**	**7.13**	**3.26**	**1.81**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.15	3.56	6.58	8.73	4.71	3.15
Average yield, Yi (tons/acre) (2)			1.13			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.37			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.79**	**2.97**	**5.48**	**7.27**	**3.92**	**2.62**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.29	2.34	4.61	6.17	5.30	3.28
Average yield, Yi (2)			1.13			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.37			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.07**	**1.95**	**3.84**	**5.14**	**4.42**	**2.73**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

1998						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.27	6.35	7.04	5.26	--	--
Average yield, Yi (bu/acre) (2)			63.05			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			60.14			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.27**	**6.35**	**7.04**	**5.26**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)			Not cultivated			
Average yield, Yi (bu/acre) (2)						
Crop response function, ky (no units) (3)						
"Fully watered" yield, Y_{env} (bu/acre) (2)						
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)						
Barley	Derived Yenv(BARLEY) polynomial equation: y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.97	5.59	7.30	6.80	2.24	1.30
Average yield, Yi (bu/acre) (2)			96.70			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			79.74			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.97**	**5.59**	**7.30**	**6.80**	**2.24**	**1.30**
Oats	Derived Yenv(OATS) polynomial equation: y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.97	5.59	7.30	6.80	2.24	1.30
Average yield, Yi (bu/acre) (2)			53.57			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			77.53			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.44**	**4.09**	**5.34**	**4.97**	**1.64**	**0.95**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.05	1.43	5.43	9.01	3.81	1.30
Average yield, Yi (cwt/acre) (2)			22.64			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.48			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**1.05**	**1.43**	**5.43**	**9.01**	**3.81**	**1.30**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.81	2.75	5.02	8.38	7.27	4.48
Average yield, Yi (tons/acre) (2)			18.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.19			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.57**	**2.39**	**4.36**	**7.28**	**6.32**	**3.89**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.05	2.27	7.05	9.55	6.67	2.17
Average yield, Yi (bu/acre) (2)			137.79			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			122.36			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.05**	**2.27**	**7.05**	**9.55**	**6.67**	**2.17**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.95	5.89	5.44	7.99	3.69	2.61
Average yield, Yi (tons/acre) (2)			3.85			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.72			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.95**	**5.89**	**5.44**	**7.99**	**3.69**	**2.61**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.11	4.02	6.38	8.33	4.53	3.87
Average yield, Yi (tons/acre) (2)			1.33			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.76			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.62**	**3.08**	**4.90**	**6.39**	**3.48**	**2.97**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1998 - 1972 = 26					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.26	2.64	4.47	5.88	5.10	4.02
Average yield, Yi (2)			1.33			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.76			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.97**	**2.03**	**3.43**	**4.51**	**3.91**	**3.08**
1981						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0497x2 - 0.4796x + 39.013 (see Figure 2.1.4.42) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.67	5.35	8.79	5.40	--	--
Average yield, Yi (bu/acre) (2)			35.83			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			38.72			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.50**	**5.00**	**8.22**	**5.05**	--	--
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.029x2 + 1.3057x + 33.72 (see Figure 2.1.4.40) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	2.17	4.24	9.02	6.03	--	--
Average yield, Yi (bu/acre) (2)			36.64			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			43.12			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.89**	**3.69**	**7.84**	**5.24**	**--**	**--**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = 0.0529x2 - 0.6404x + 60.632 (see Figure 2.1.4.35)					
	x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.31	4.71	9.11	6.99	2.25	1.30
Average yield, Yi (bu/acre) (2)			53.36			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.15			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**2.11**	**4.31**	**8.33**	**6.40**	**2.06**	**1.19**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = 0.0255x2 + 0.1397x + 56.659 (see Figure 2.1.4.38)					
	x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.31	4.71	9.11	6.99	2.25	1.30
Average yield, Yi (bu/acre) (2)			57.23			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.98			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**2.22**	**4.52**	**8.75**	**6.71**	**2.16**	**1.25**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0045x2 - 0.0509x + 18.761 (see Figure 2.1.4.37)					
	x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.24	1.21	6.78	9.26	3.83	1.30
Average yield, Yi (cwt/acre) (2)			22.04			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.67			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**1.24**	**1.21**	**6.78**	**9.26**	**3.83**	**1.30**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = 0.0056x2 - 0.0212x + 17.956 (see Figure 2.1.4.41)					
	x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.12	2.31	6.26	8.61	7.30	4.47
Average yield, Yi (tons/acre) (2)			22.07			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			18.22			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**2.12**	**2.31**	**6.26**	**8.61**	**7.30**	**4.47**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0318x2 + 0.216x + 95.248 (see Figure 2.1.4.36) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.24	1.91	8.80	9.81	6.70	2.17
Average yield, Yi (bu/acre) (2)			111.45			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			99.77			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.24**	**1.91**	**8.80**	**9.81**	**6.70**	**2.17**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = 0.0014x2 - 0.0088x + 3.0034 (see Figure 2.1.4.34) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.46	4.96	6.79	8.21	3.71	2.61
Average yield, Yi (tons/acre) (2)			2.93			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.04			
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**3.34**	**4.79**	**6.56**	**7.93**	**3.58**	**2.52**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.47	3.38	7.97	8.56	4.55	3.86
Average yield, Yi (tons/acre) (2)			1.42			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.35			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**2.47**	**3.38**	**7.97**	**8.56**	**4.55**	**3.86**

Table 2.1.4.77 Summary – adjusted maximum crop evapotranspiration, ETC - normal or average stream flow years - Lower Laramie subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = 0.0003x2 + 0.014x + 1.1951 (see Figure 2.1.4.39) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.48	2.22	5.58	6.04	5.13	4.01
Average yield, Yi (2)			1.42			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.35			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.48**	**2.22**	**5.58**	**6.04**	**5.13**	**4.01**

Notes:

(1) See Table 2.1.4.44.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

A summary of adjusted, yield-based crop evapotranspiration values during high, low, and normal or average stream flow years–derivation of which is shown in Table 2.1.4.75, 2.1.4.76, and 2.1.4.77–is included in Table 2.1.4.78.

Table 2.1.4.78 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Lower Laramie subbasin

High stream flow years		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
1983	winter wheat	1.78	5.38	7.15	5.31	--	--	**19.62**
	spring wheat	1.45	4.27	7.34	5.92	--	--	**18.98**
	barley	1.33	4.09	6.40	5.92	2.13	1.12	**20.99**
	oats	1.36	4.18	6.55	6.06	2.18	1.15	**21.48**
	dry beans	0.81	1.19	5.45	8.98	4.15	1.28	**21.86**
	sugar beets	1.05	1.73	3.79	6.29	5.96	3.33	**22.15**
	corn	0.79	1.86	6.91	9.29	7.08	2.09	**28.02**
	alfalfa	2.19	4.73	5.24	7.65	3.85	2.47	**26.13**
	other hay	1.65	3.40	6.49	8.41	4.99	3.87	**28.81**
	irrigated pasture	0.99	2.24	4.55	5.94	5.62	4.02	**23.36**
1984	winter wheat	1.69	6.27	7.60	5.04	--	--	**20.60**
	spring wheat	1.50	5.41	8.50	6.12	--	--	**21.53**
	barley	1.46	5.51	7.87	6.51	2.08	1.01	**24.44**
	oats	1.27	4.81	6.88	5.68	1.82	0.88	**21.34**
	dry beans	0.85	1.54	6.39	9.40	3.87	1.10	**23.15**
	sugar beets	1.29	2.61	5.21	7.73	6.51	3.33	**26.68**
	corn	0.78	2.24	7.61	9.14	6.20	1.68	**27.65**
	alfalfa	2.37	6.29	6.36	8.29	3.72	2.18	**29.21**
	other hay	1.68	4.26	7.41	8.57	4.53	3.21	**29.66**
	irrigated pasture	1.01	2.80	5.19	6.06	5.10	3.33	**23.49**
Low stream flow years		**"Yield adjusted" evapotranspiration, ET_C (inches, 1)**						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
1990	winter wheat	2.22	5.79	8.30	4.70	--	--	**21.01**
	spring wheat	1.36	3.46	6.42	3.95	--	--	**15.19**
	barley	1.98	5.27	8.89	6.28	2.18	1.23	**25.83**
	oats	1.65	4.39	7.42	5.24	1.82	1.03	**21.55**
	dry beans	1.07	1.36	6.64	8.37	3.73	1.24	**22.41**
	sugar beets	1.84	2.59	6.13	7.77	7.09	4.26	**29.68**
	corn	1.07	2.15	8.64	8.87	6.52	2.07	**29.32**
	alfalfa	2.68	5.00	5.98	6.66	3.23	2.22	**25.77**
	other hay	2.14	3.80	7.82	7.74	4.43	3.68	**29.61**
	irrigated pasture	1.28	2.50	5.48	5.47	4.99	3.83	**23.55**
1994	winter wheat	2.39	6.87	8.54	4.92	--	--	**22.72**
	spring wheat	1.69	4.71	7.58	4.76	--	--	**18.74**
	barley	1.31	3.82	5.59	4.03	1.47	0.77	**16.99**
	oats	1.90	5.55	8.14	5.86	2.14	1.13	**24.72**
	dry beans	0.97	1.36	5.77	7.40	3.47	1.08	**20.05**
	sugar beets	1.94	3.03	6.21	8.01	7.70	4.29	**31.18**
	corn	1.06	2.35	8.17	8.54	6.61	1.95	**28.68**
	alfalfa	3.17	6.49	6.73	7.64	3.91	2.50	**30.44**
	other hay	1.50	2.95	5.26	5.30	3.19	2.46	**20.66**
	irrigated pasture	0.90	1.94	3.68	3.74	3.59	2.56	**16.41**

Table 2.1.4.78 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Lower Laramie subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
1992	winter wheat	2.57	6.43	7.35	4.47	--	--	**20.82**
	spring wheat	1.88	4.58	6.78	4.47	--	--	**17.71**
	barley	2.09	5.33	7.18	5.44	1.94	1.16	**23.14**
	oats	1.95	4.96	6.68	5.06	1.81	1.08	**21.54**
	dry beans	1.05	1.27	4.96	6.70	3.07	1.08	**18.13**
	sugar beets	1.83	2.49	4.68	6.36	5.98	3.78	**25.12**
	corn	1.07	2.07	6.62	7.29	5.51	1.84	**24.40**
	alfalfa	2.88	5.13	4.89	5.84	2.92	2.12	**23.78**
	other hay	1.64	2.79	4.58	4.85	2.85	2.50	**19.21**
	irrigated pasture	0.98	1.84	3.20	3.43	3.22	2.60	**15.27**
1989	winter wheat	2.29	6.01	7.36	5.19	--	--	**20.85**
	spring wheat	1.98	5.08	8.02	6.16	--	--	**21.24**
	barley	2.08	5.58	8.02	7.07	2.22	1.14	**26.11**
	oats	1.71	4.58	6.59	5.80	1.83	0.94	**21.45**
	dry beans	1.12	1.43	5.99	9.41	3.80	1.15	**22.90**
	sugar beets	1.81	2.58	5.19	8.19	6.78	3.68	**28.23**
	corn	1.06	2.15	7.36	9.42	6.28	1.80	**28.07**
	alfalfa	2.95	5.55	5.65	7.85	3.45	2.15	**27.60**
	other hay	1.67	3.00	5.26	6.49	3.36	2.53	**22.31**
	irrigated pasture	1.00	1.97	3.68	4.58	3.79	2.63	**17.65**
Normal or average stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
1995	winter wheat	2.08	4.56	6.95	5.05	--	--	**18.64**
	spring wheat	1.51	3.22	6.35	5.02	--	--	**16.10**
	barley	1.73	3.86	6.93	6.28	2.24	1.06	**22.10**
	oats	1.80	4.01	7.20	6.53	2.33	1.10	**22.97**
	dry beans	0.88	0.93	4.84	7.82	3.59	0.99	**19.05**
	sugar beets	1.22	1.45	3.64	5.92	5.56	2.78	**20.57**
	corn	0.75	1.27	5.41	7.12	5.39	1.42	**21.36**
	alfalfa	2.54	3.97	5.04	7.20	3.60	2.06	**24.41**
	other hay	1.90	2.84	6.19	7.86	4.63	3.20	**26.62**
	irrigated pasture	1.14	1.86	4.34	5.55	5.22	3.33	**21.44**
1986	winter wheat	2.03	5.79	7.57	4.75	--	--	**20.14**
	spring wheat	1.84	5.12	8.66	5.91	--	--	**21.53**
	barley	1.96	5.69	8.76	6.86	2.33	1.01	**26.61**
	oats	1.96	5.69	8.76	6.86	2.33	1.01	**26.61**
	dry beans	0.94	1.31	5.83	8.14	3.55	0.90	**20.67**
	sugar beets	1.80	2.79	6.02	8.45	7.55	3.48	**30.09**
	corn	1.05	2.31	8.46	9.62	6.92	1.69	**30.05**
	alfalfa	2.94	5.99	6.53	8.06	3.83	2.03	**29.38**
	other hay	2.10	4.09	7.66	8.39	4.70	3.01	**29.95**
	irrigated pasture	1.26	2.68	5.37	5.93	5.30	3.13	**23.67**

Table 2.1.4.78 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Lower Laramie subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
1980	winter wheat	2.17	5.65	8.78	5.45	--	--	**22.05**
	spring wheat	1.53	3.87	7.79	5.25	--	--	**18.44**
	barley	1.68	4.46	8.17	6.33	1.88	1.06	**23.58**
	oats	1.96	5.20	9.52	7.37	2.19	1.24	**27.48**
	dry beans	1.05	1.33	7.10	9.78	3.75	1.24	**24.25**
	sugar beets	1.76	2.49	6.39	8.87	6.97	4.14	**30.62**
	corn	0.99	1.99	8.67	9.74	6.17	1.94	**29.50**
	alfalfa	2.75	5.13	6.66	8.13	3.40	2.31	**28.38**
	other hay	2.10	3.74	8.34	9.04	4.45	3.67	**31.34**
	irrigated pasture	1.26	2.46	5.85	6.38	5.02	3.81	**24.78**
1999	winter wheat	1.89	5.65	7.30	5.26	--	--	**20.10**
	spring wheat	Not cultivated						
	barley	1.54	4.68	7.12	6.40	2.09	1.00	**22.83**
	oats	1.40	4.26	6.49	5.83	1.91	0.91	**20.80**
	dry beans	0.83	1.20	5.33	8.53	3.59	1.01	**20.49**
	sugar beets	1.34	2.17	4.63	7.44	6.42	3.25	**25.25**
	corn	0.89	2.05	7.43	9.70	6.73	1.80	**28.60**
	alfalfa	2.44	5.20	5.60	7.94	3.64	2.11	**26.93**
	other hay	1.78	3.63	6.73	8.46	4.57	3.21	**28.38**
	irrigated pasture	1.07	2.38	4.71	5.98	5.15	3.34	**22.63**
1991	winter wheat	2.08	5.63	7.33	4.97	--	--	**20.01**
	spring wheat	1.56	4.12	6.96	5.13	--	--	**17.77**
	barley	1.83	5.03	7.73	6.54	2.19	1.16	**24.48**
	oats	1.83	5.03	7.73	6.54	2.19	1.16	**24.48**
	dry beans	0.96	1.27	5.64	8.50	3.65	1.14	**21.16**
	sugar beets	1.52	2.22	4.76	7.22	6.37	3.59	**25.68**
	corn	0.96	2.00	7.32	9.00	6.39	1.90	**27.57**
	alfalfa	2.75	5.30	5.76	7.68	3.60	2.33	**27.42**
	other hay	1.96	3.62	6.76	8.00	4.42	3.45	**28.21**
	irrigated pasture	1.18	2.37	4.74	5.65	4.98	3.59	**22.51**
2000	winter wheat	2.42	6.69	8.53	5.75	--	--	**23.39**
	spring wheat	Not cultivated						
	barley	2.10	5.89	8.85	7.44	2.43	1.20	**27.91**
	oats	1.76	4.93	7.41	6.23	2.03	1.00	**23.36**
	dry beans	1.03	1.38	6.03	9.02	3.79	1.10	**22.35**
	sugar beets	1.74	2.60	5.48	8.25	7.11	3.70	**28.88**
	corn	1.12	2.39	8.55	10.44	7.23	1.99	**31.72**
	alfalfa	2.67	5.25	5.59	7.40	3.39	2.02	**26.32**
	other hay	1.37	2.57	4.70	5.53	2.98	2.16	**19.31**
	irrigated pasture	0.82	1.69	3.29	3.91	3.37	2.24	**15.32**

Table 2.1.4.78 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Lower Laramie subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
1993	winter wheat	2.19	6.24	7.06	4.95	--	--	**20.44**
	spring wheat	1.59	4.39	6.43	4.89	--	--	**17.30**
	barley	1.82	5.27	7.04	6.14	2.11	1.04	**23.42**
	oats	1.90	5.49	7.33	6.40	2.20	1.08	**24.40**
	dry beans	0.79	1.09	4.22	6.57	2.90	0.84	**16.41**
	sugar beets	1.57	2.42	4.50	7.07	6.39	3.31	**25.26**
	corn	0.78	1.70	5.38	6.83	4.97	1.36	**21.02**
	alfalfa	2.85	5.78	5.46	7.52	3.62	2.15	**27.38**
	other hay	1.61	3.14	5.08	6.23	3.53	2.53	**22.12**
	irrigated pasture	0.97	2.06	3.57	4.40	3.97	2.64	**17.61**
2001	winter wheat	1.44	5.03	7.20	4.80	--	--	**18.47**
	spring wheat			Not cultivated				
	barley	1.50	5.35	9.04	7.53	2.56	1.26	**27.24**
	oats	1.51	5.37	9.08	7.56	2.57	1.27	**27.36**
	dry beans	0.75	1.28	6.26	9.29	4.05	1.18	**22.81**
	sugar beets	1.21	2.31	5.45	8.14	7.29	3.82	**28.22**
	corn	0.75	2.01	8.09	9.79	7.06	1.96	**29.66**
	alfalfa	1.92	4.80	5.74	7.53	3.58	2.16	**25.73**
	other hay	1.62	3.86	7.94	9.26	5.19	3.77	**31.64**
	irrigated pasture	0.97	2.54	5.56	6.54	5.85	3.92	**25.38**
1985	winter wheat	2.16	5.77	6.86	4.52	--	--	**19.31**
	spring wheat	1.81	4.71	7.26	5.19	--	--	**18.97**
	barley	2.03	5.52	7.74	6.35	2.14	0.93	**24.71**
	oats	1.79	4.88	6.84	5.62	1.89	0.83	**21.85**
	dry beans	0.99	1.29	5.23	7.65	3.30	0.85	**19.31**
	sugar beets	2.06	2.99	5.87	8.64	7.65	3.53	**30.74**
	corn	1.11	2.27	7.60	9.06	6.46	1.57	**28.07**
	alfalfa	2.90	5.53	5.50	7.10	3.35	1.78	**26.16**
	other hay	2.40	4.37	7.47	8.58	4.76	3.05	**30.63**
	irrigated pasture	1.44	2.87	5.23	6.06	5.37	3.17	**24.14**
1988	winter wheat	2.37	6.17	8.17	4.80	--	--	**21.51**
	spring wheat	1.93	4.91	8.42	5.39	--	--	**20.65**
	barley	1.59	4.22	6.60	4.85	1.70	0.84	**19.80**
	oats	1.31	3.49	5.45	4.00	1.40	0.69	**16.34**
	dry beans	1.18	1.50	6.77	8.85	3.99	1.16	**23.45**
	sugar beets	2.06	2.91	6.36	8.36	7.72	4.06	**31.47**
	corn	1.20	2.41	8.93	9.52	7.08	1.97	**31.11**
	alfalfa	2.83	5.28	5.83	6.74	3.32	2.00	**26.00**
	other hay	2.39	4.25	8.08	8.31	4.81	3.50	**31.34**
	irrigated pasture	1.43	2.79	5.67	5.87	5.42	3.64	**24.82**

Table 2.1.4.78 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Lower Laramie subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
1997	winter wheat	1.91	6.33	7.74	5.17	--	--	**21.15**
	spring wheat	1.58	5.06	8.00	5.81	--	--	**20.45**
	barley	1.67	5.62	8.09	6.74	2.16	1.14	**25.42**
	oats	1.47	4.93	7.10	5.92	1.90	1.00	**22.32**
	dry beans	0.90	1.44	6.01	8.93	3.67	1.14	**22.09**
	sugar beets	1.25	2.25	4.53	6.77	5.70	3.18	**23.68**
	corn	0.90	2.28	7.81	9.46	6.42	1.90	**28.77**
	alfalfa	2.51	5.92	6.03	7.92	3.55	2.28	**28.21**
	other hay	1.79	4.04	7.07	8.25	4.36	3.38	**28.89**
	irrigated pasture	1.07	2.65	4.96	5.83	4.91	3.51	**22.93**
1996	winter wheat	2.46	5.75	8.46	5.18	--	--	**21.85**
	spring wheat	1.75	4.00	7.61	5.07	--	--	**18.43**
	barley	2.12	5.06	8.78	6.70	2.33	1.18	**26.17**
	oats	2.01	4.80	8.33	6.35	2.21	1.12	**24.82**
	dry beans	1.03	1.17	5.90	8.01	3.58	1.07	**20.76**
	sugar beets	1.73	2.19	5.32	7.26	6.67	3.57	**26.74**
	corn	1.03	1.87	7.69	8.52	6.29	1.79	**27.19**
	alfalfa	3.00	5.02	6.16	7.41	3.62	2.22	**27.43**
	other hay	1.88	3.01	6.35	6.78	3.89	2.89	**24.80**
	irrigated pasture	1.13	1.97	4.45	4.78	4.39	3.01	**19.73**
1987	winter wheat	2.62	5.94	8.00	5.05	--	--	**21.61**
	spring wheat	1.88	4.13	7.20	4.95	--	--	**18.16**
	barley	2.13	4.91	7.79	6.13	1.93	1.10	**23.99**
	oats	2.40	5.52	8.76	6.90	2.17	1.24	**26.99**
	dry beans	1.18	1.30	6.00	8.42	3.41	1.14	**21.45**
	sugar beets	2.15	2.63	5.85	8.26	6.85	4.14	**29.88**
	corn	1.22	2.14	8.08	9.26	6.18	1.97	**28.85**
	alfalfa	3.15	5.08	5.71	7.09	3.13	2.17	**26.33**
	other hay	2.14	3.30	6.37	7.03	3.65	3.05	**25.54**
	irrigated pasture	1.28	2.16	4.47	4.96	4.12	3.18	**20.17**
1982	winter wheat	2.32	5.63	7.26	5.51	--	--	**20.72**
	spring wheat	1.89	4.46	7.45	6.15	--	--	**19.95**
	barley	2.01	4.95	7.53	7.14	2.33	1.06	**25.02**
	oats	2.01	4.95	7.53	7.14	2.33	1.06	**25.02**
	dry beans	1.00	1.18	5.18	8.75	3.67	0.98	**20.76**
	sugar beets	1.85	2.43	5.17	8.79	7.56	3.66	**29.46**
	corn	1.08	2.01	7.27	10.01	6.93	1.77	**29.07**
	alfalfa	2.56	4.44	4.77	7.13	3.26	1.81	**23.97**
	other hay	1.79	2.97	5.48	7.27	3.92	2.62	**24.05**
	irrigated pasture	1.07	1.95	3.84	5.14	4.42	2.73	**19.15**

Table 2.1.4.78 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Lower Laramie subbasin (cont)

Year	Crop	"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
		Apr	May	Jun	Jul	Aug	Sep	Total
1998	winter wheat	2.27	6.35	7.04	5.26	--	--	**20.92**
	spring wheat			Not cultivated				
	barley	1.97	5.59	7.30	6.80	2.24	1.30	**25.20**
	oats	1.44	4.09	5.34	4.97	1.64	0.95	**18.43**
	dry beans	1.05	1.43	5.43	9.01	3.81	1.30	**22.03**
	sugar beets	1.57	2.39	4.36	7.28	6.32	3.89	**25.81**
	corn	1.05	2.27	7.05	9.55	6.67	2.17	**28.76**
	alfalfa	2.95	5.89	5.44	7.99	3.69	2.61	**28.57**
	other hay	1.62	3.08	4.90	6.39	3.48	2.97	**22.44**
	irrigated pasture	0.97	2.03	3.43	4.51	3.91	3.08	**17.93**
1981	winter wheat	2.50	5.00	8.22	5.05	--	--	**20.77**
	spring wheat	1.89	3.69	7.84	5.24	--	--	**18.66**
	barley	2.11	4.31	8.33	6.40	2.06	1.19	**24.40**
	oats	2.22	4.52	8.75	6.71	2.16	1.25	**25.61**
	dry beans	1.24	1.21	6.78	9.26	3.83	1.30	**23.62**
	sugar beets	2.12	2.31	6.26	8.61	7.30	4.47	**31.07**
	corn	1.24	1.91	8.80	9.81	6.70	2.17	**30.63**
	alfalfa	3.34	4.79	6.56	7.93	3.58	2.52	**28.72**
	other hay	2.47	3.38	7.97	8.56	4.55	3.86	**30.79**
	irrigated pasture	1.48	2.22	5.58	6.04	5.13	4.01	**24.46**

Notes:
(1) See Tables 2.1.4.75, 2.1.4.76., and 2.1.4.77.

2.1.4.7.9 Adjusted Crop Evapotranspiration, ET_c – Horse Creek Subbasin

Annual crop yields and derived area-weighted annual crop yields for each crop during the 1972 through 2001 study period in the Horse Creek subbasin are shown in Table 2.1.4.79. As shown on this table, almost 80 percent of the Horse Creek subbasin lies within Goshen County, with the remainder of the subbasin lying within Laramie County. These two counties and the portions of the Lower Laramie subbasin that they comprise are shown at the top of Table 2.1.4.79. The assumptions, based on tabulated NASS yield data, underlying derivation of the area-weighted yield for each crop are included near the top of each tabulation of individual crop yields. All crops except winter wheat, cultivation of which in this subbasin is assumed to have ended after 1997, are assumed to have been irrigated and harvested in the Horse Creek subbasin during the entire 1972 through 2001 period of record. This table also shows years and yields that were graphed to derive polynomial equations for determining $Y_{env(C)}$ values for each crop in the subbasin. Area-weighted annual yield values during the study period for each crop, the Y_{env} polynomial trend lines, and the resultant Y_{env} polynomial equations are graphed in Figures 2.1.4.43 through 2.1.4.51.

Table 2.1.4.79 Area-weighted crop yields - Horse Creek subbasin

	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette
Portion of total Horse Creek subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)	0.0000	0.0000	0.0000	0.0000	0.7900	0.2100	0.0000	0.0000	0.0000	0.0000

Crop: alfalfa
Units: tons per acre

Assumption: alfalfa production ongoing through entire 1972 - 2001 period in both counties located partially or entirely within the subbasin; estimated yield values (in shaded cells) not required for those two counties

National Agricultural Statistics Service (NASS) crop yield data			County:									Horse Creek subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Alfalfa	ton/acre	2.20	1.90	2.03	2.66	3.30	3.00	2.42	2.80	3.30	1.80	3.24
1973	Alfalfa	ton/acre	2.27	1.90	2.30	2.80	3.50	3.10	2.46	2.80	3.17	1.90	3.42
1974	Alfalfa	ton/acre	2.20	1.90	2.20	2.91	3.65	3.60	2.21	2.71	2.80	1.70	3.64
1975	Alfalfa	ton/acre	2.00	2.06	2.30	3.11	3.53	2.80	2.50	2.31	2.85	1.70	3.38
1976	Alfalfa	ton/acre	2.11	1.50	2.40	3.50	3.70	2.51	2.57	2.12	2.60	1.60	3.45
1977	Alfalfa	ton/acre	1.90	1.60	1.90	2.89	3.50	2.80	2.10	1.80	2.30	1.30	3.35
1978	Alfalfa	ton/acre	2.60	1.60	2.10	3.32	3.94	2.50	2.19	2.40	2.40	1.60	3.64
1979	Alfalfa	ton/acre	2.50	2.00	2.20	3.80	3.80	2.90	2.24	2.60	3.30	1.70	3.61
1980	Alfalfa	ton/acre	2.30	2.10	2.00	3.00	3.60	2.90	2.60	2.30	2.84	1.20	3.45
1981	Alfalfa	ton/acre	2.60	2.20	2.20	3.40	4.40	2.80	2.60	2.90	2.90	1.50	4.06
1982	Alfalfa	ton/acre	2.54	2.47	2.03	2.90	3.73	3.35	3.54	2.55	2.50	1.44	3.65
1983	Alfalfa	ton/acre	2.32	2.67	2.24	3.20	4.70	3.50	2.90	2.85	2.87	1.20	4.45
1984	Alfalfa	ton/acre	2.40	2.20	2.00	3.20	4.03	3.40	2.30	3.00	3.10	1.80	3.90
1985	Alfalfa	ton/acre	1.13	2.29	1.64	2.90	3.10	3.23	1.21	2.60	2.81	1.55	3.13
1986	Alfalfa	ton/acre	2.10	1.71	2.24	3.51	4.29	3.90	2.27	3.46	3.22	1.54	4.21
1987	Alfalfa	ton/acre	2.00	1.64	2.00	3.45	4.00	3.13	2.04	2.15	2.78	1.29	3.82
1988	Alfalfa	ton/acre	2.20	2.12	1.65	3.24	4.54	3.67	1.93	2.53	2.63	1.33	4.36
1989	Alfalfa	ton/acre	1.93	2.24	1.83	3.14	4.14	4.44	2.18	1.96	3.00	1.38	4.20
1990	Alfalfa	ton/acre	1.94	1.65	2.36	3.40	4.25	3.50	2.25	2.00	2.97	1.62	4.09
1991	Alfalfa	ton/acre	1.71	2.10	2.40	3.49	4.09	3.50	2.30	2.60	3.90	1.40	3.97
1992	Alfalfa	ton/acre	1.80	2.10	2.00	3.10	3.81	3.70	2.50	2.30	2.80	1.30	3.79
1993	Alfalfa	ton/acre	2.30	2.10	2.70	3.42	4.50	3.60	2.80	3.40	3.50	1.40	4.31
1994	Alfalfa	ton/acre	2.10	2.00	2.10	3.13	4.20	4.09	2.36	3.40	3.50	1.70	4.18
1995	Alfalfa	ton/acre	1.44	2.44	2.85	3.43	4.89	3.88	2.44	3.33	3.42	1.50	4.68
1996	Alfalfa	ton/acre	1.87	2.15	2.39	3.31	4.46	3.61	2.48	2.40	3.48	1.46	4.28
1997	Alfalfa	ton/acre	1.90	2.16	2.60	4.00	4.52	4.11	3.10	2.83	4.12	1.93	4.43
1998	Alfalfa	ton/acre	2.02	2.17	2.20	3.46	4.40	4.00	2.64	3.33	4.01	1.60	4.32
1999	Alfalfa	ton/acre	2.10	2.18	2.64	3.47	4.52	3.86	2.60	3.80	3.83	1.64	4.38
2000	Alfalfa	ton/acre	1.87	2.00	1.97	3.53	4.31	4.06	2.65	3.33	3.30	1.63	4.26
2001	Alfalfa	ton/acre	1.74	2.00	2.40	3.55	4.40	3.58	2.63	3.75	3.40	1.65	4.23

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1974	2	3.64
	1981	9	4.06
	1984	12	3.90
	1986	14	4.21
	1988	16	4.36
	1993	21	4.31
	1997	25	4.43

Derived $Y_{env(ALFALFA)}$ polynomial equation: $y = -0.0009x^2 + 0.0609x + 3.466$ (see Figure 2.1.4.43)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.79 Area-weighted crop yields - Horse Creek subbasin (cont)

Crop: barley

Units: bushels per acre

Assumption: significant subbasin barley production in both counties during entire 1972 - 2001 study period; estimate annual yields for years for which data do not exist

National Agricultural Statistics Service (NASS) crop yield data			County:										Horse Creek subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Barley	bu/acre	49.00	50.00	51.00	73.00	56.00	67.00	50.00	51.00	66.00	46.00	58.31
1973	Barley	bu/acre	51.00	47.00	46.93	48.00	56.00	63.00	46.20	58.00	66.00	45.00	57.47
1974	Barley	bu/acre	48.00	52.00	39.00	62.00	60.53	53.09	58.00	42.47	60.43		58.97
1975	Barley	bu/acre	47.00	40.00	40.00	79.89	63.00	58.73	50.00	65.00	58.00		62.10
1976	Barley	bu/acre	48.00	60.00	50.00	79.00	56.00	58.94	70.00	50.00	50.00		56.62
1977	Barley	bu/acre	49.00	55.00	26.00	68.00	44.00	39.00	49.00	32.00	30.00		42.95
1978	Barley	bu/acre	62.00	70.00	32.00	77.00	62.00	61.00	60.00	42.00	37.00		61.79
1979	Barley	bu/acre	32.00	38.00	31.00	70.00	50.00	51.00		51.00	54.00		50.21
1980	Barley	bu/acre	43.60	60.00	53.11	79.79	53.47	49.76	34.00	42.55	49.53		52.69
1981	Barley	bu/acre	53.63	53.50	44.63	79.54	45.93	48.89		50.00	53.85		46.55
1982	Barley	bu/acre	65.00	65.00	55.00	63.40	57.06	56.28		55.00	62.00		56.90
1983	Barley	bu/acre	50.00	60.00	66.50	77.35	69.58	71.45	65.00	50.00	48.88		69.97
1984	Barley	bu/acre	50.00	70.00	66.00	65.00	70.00	70.00	64.00	51.00	54.00		70.00
1985	Barley	bu/acre	48.00	60.60	68.10	68.00	66.00	78.00	55.00	51.00	54.00		68.52
1986	Barley	bu/acre	50.00	73.29	66.33	77.49	68.46	74.29	57.00	65.00	69.00		69.68
1987	Barley	bu/acre	50.00	65.00	44.82	76.47	47.00	77.24	52.00	70.00	55.00		53.35
1988	Barley	bu/acre	60.00	70.00	33.00	51.88	45.00	41.48	46.00	42.00	41.00		44.26
1989	Barley	bu/acre	55.00	65.00	53.33	73.00	59.82	63.80	50.00	57.50	64.15		60.66
1990	Barley	bu/acre	60.00	70.00	55.00	73.03	62.50	67.76	45.00	60.50	66.44		63.60
1991	Barley	bu/acre	70.00	65.00	62.00	82.40	70.47	74.59	65.00	69.00	68.00		71.34
1992	Barley	bu/acre			66.00	83.20	70.00	75.00	81.00	61.00	60.00		71.05
1993	Barley	bu/acre			65.00	101.80	65.00	68.33	55.00	70.00	67.50		65.70
1994	Barley	bu/acre			55.00	70.00	69.00	66.00	75.00	76.00	36.00		68.37
1995	Barley	bu/acre			86.00	103.00	83.00	70.34			69.00		80.34
1996	Barley	bu/acre				93.36	75.91	70.85			81.03		74.85
1997	Barley	bu/acre				87.00	57.00	80.09	70.00		86.00		61.85
1998	Barley	bu/acre				85.33	69.98	71.12	82.86		101.05		70.22
1999	Barley	bu/acre				96.51	78.80	71.68			74.62		77.30
2000	Barley	bu/acre				75.00	72.94	72.82			100.00		72.91
2001	Barley	bu/acre				76.00	70.93	73.31			88.54		71.43

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	58.31
	1975	3	62.10
	1978	6	61.79
	1983	11	69.97
	1985	13	68.52
	1991	19	71.34
	1992	20	71.05
	1996	24	74.85
	1999	27	77.30

Derived $Y_{env(BARLEY)}$ polynomial equation: $y = -0.0066x^2 + 0.841x + 57.961$ (see Figure 2.1.4.44)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.79 Area-weighted crop yields - Horse Creek subbasin (cont)

Crop: corn

Units: bushels per acre

Assumption: corn production in Goshen and Laramie Counties during the 1972 - 2001 period; estimate annual yields for years for which data do not exist in Goshen and Laramie Counties

National Agricultural Statistics Service (NASS) crop yield data			County:									Horse Creek subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Corn	bu/acre		70.00	57.00	80.00	94.00	78.00	70.00		94.00		90.64
1973	Corn	bu/acre	71.00	74.00		84.78	89.22	97.00	73.00		116.00		90.85
1974	Corn	bu/acre		78.00		50.50	79.50	101.25	50.00		77.00		84.07
1975	Corn	bu/acre		63.00		59.00	85.07	66.00	55.00		96.00		81.07
1976	Corn	bu/acre		55.00		85.00	93.08	94.00	55.00		98.00		93.27
1977	Corn	bu/acre		55.00		86.00	94.00	95.00	55.00		73.80		94.21
1978	Corn	bu/acre		61.00	91.00	85.40	89.50	66.00	61.00	88.00	73.00		84.57
1979	Corn	bu/acre			80.00	86.00	89.83	75.00	75.00	70.00	88.00		86.72
1980	Corn	bu/acre			90.00	90.00	102.90	95.00	85.00	93.00	90.00		101.24
1981	Corn	bu/acre			84.00	84.00	113.53	90.00	74.00	92.00	112.00		108.59
1982	Corn	bu/acre			84.00	98.00	111.00	95.00	87.00	88.00	104.94		107.64
1983	Corn	bu/acre			85.00	94.00	110.55	101.00	78.00	100.00	95.00		108.54
1984	Corn	bu/acre				90.00	105.39	97.00	65.00	99.00	90.00		103.63
1985	Corn	bu/acre				91.00	100.00	94.00	60.00	90.00	92.32		98.74
1986	Corn	bu/acre				104.00	119.70	119.00	76.00	102.00	108.00		119.55
1987	Corn	bu/acre			92.00	91.00	117.75	112.11	80.00	95.00	97.00		116.57
1988	Corn	bu/acre			126.00	95.00	130.78	127.00	90.00	108.00	104.00		129.99
1989	Corn	bu/acre			91.00	92.08	96.91	102.00	85.00	90.00	98.14		97.98
1990	Corn	bu/acre			120.00	92.00	127.99	123.00	90.00	113.33	111.80		126.94
1991	Corn	bu/acre			99.00	95.00	125.99	109.04	94.00	66.00	106.00		122.43
1992	Corn	bu/acre			97.00	78.00	101.81	102.00	38.00		92.00		101.85
1993	Corn	bu/acre			80.00	88.50	82.00	65.50			80.00		78.54
1994	Corn	bu/acre				111.00	130.39	111.72			103.00		126.47
1995	Corn	bu/acre				108.00	113.64	102.25			80.00		111.25
1996	Corn	bu/acre				105.00	130.87	98.10	103.33		101.90		123.99
1997	Corn	bu/acre				126.07	140.00	135.00			132.00		138.95
1998	Corn	bu/acre					136.99	127.94			138.26		135.09
1999	Corn	bu/acre				101.43	122.17	120.00			135.00		121.71
2000	Corn	bu/acre				112.86	136.63	142.86			130.81		137.94
2001	Corn	bu/acre					133.33	135.00			112.94		133.68

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	90.64
	1976	4	93.27
	1980	8	101.24
	1982	10	107.64
	1987	15	116.57
	1991	19	122.43
	1994	22	126.47
	1998	26	135.09
	2000	28	137.94

Derived $Y_{env(CORN)}$ polynomial equation: $y = 0.0015x^2 + 1.7179x + 87.174$ (see Figure 2.1.4.45)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.79 Area-weighted crop yields - Horse Creek subbasin (cont)

Crop: dry beans
Units: hundred pounds per acre (cwt/acre)

Assumption: dry beans production in Goshen and Laramie Counties during the 1972 - 2001 period

National Agricultural Statistics Service (NASS) crop yield data			County:										Horse Creek subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Dry beans	cwt/acre			17.75	18.80	19.70	18.30			19.50		19.41
1973	Dry beans	cwt/acre			17.50	17.50	18.20	18.00			17.50		18.16
1974	Dry beans	cwt/acre			17.20	17.80	19.48	19.90			19.90		19.57
1975	Dry beans	cwt/acre			15.40	18.30	16.84	17.60			17.60		17.00
1976	Dry beans	cwt/acre			16.00	19.30	17.80	16.00			16.50		17.42
1977	Dry beans	cwt/acre			14.23	19.50	17.90	17.60			14.00		17.84
1978	Dry beans	cwt/acre			15.80	16.60	16.29	14.30			15.80		15.87
1979	Dry beans	cwt/acre			19.00	21.00	19.11	18.00			18.00		18.88
1980	Dry beans	cwt/acre			18.80	19.00	21.70	20.70			18.43		21.49
1981	Dry beans	cwt/acre			17.00	21.30	22.04	20.60			22.10		21.74
1982	Dry beans	cwt/acre			15.00	19.70	18.07	16.60			17.00		17.76
1983	Dry beans	cwt/acre			14.60	19.60	18.80	16.70			18.50		18.36
1984	Dry beans	cwt/acre			19.00	19.80	22.20	20.00			19.46		21.74
1985	Dry beans	cwt/acre			18.00	15.10	19.00	18.80			14.40		18.96
1986	Dry beans	cwt/acre			18.00	19.50	18.65	17.80			16.35		18.47
1987	Dry beans	cwt/acre			19.00	21.40	19.20	18.56			17.00		19.07
1988	Dry beans	cwt/acre			20.00	17.42	21.30	17.53			18.50		20.51
1989	Dry beans	cwt/acre			17.00	19.00	19.18	20.70			18.61		19.50
1990	Dry beans	cwt/acre			17.50	17.00	21.03	20.79			19.00		20.98
1991	Dry beans	cwt/acre			17.00	20.00	19.85	17.87			18.93		19.43
1992	Dry beans	cwt/acre				20.00	18.83	15.56			15.67		18.14
1993	Dry beans	cwt/acre				13.40	14.58	14.79			14.57		14.62
1994	Dry beans	cwt/acre				18.17	20.45	20.60			16.00		20.48
1995	Dry beans	cwt/acre				17.78	17.96	18.24			17.70		18.02
1996	Dry beans	cwt/acre				26.34	23.99	22.20			16.94		23.61
1997	Dry beans	cwt/acre				23.52	21.91	23.64			20.59		22.27
1998	Dry beans	cwt/acre				22.41	22.63	24.25			22.58		22.97
1999	Dry beans	cwt/acre				19.14	21.02	23.24			18.63		21.49
2000	Dry beans	cwt/acre				21.05	22.86	24.68			18.12		23.24
2001	Dry beans	cwt/acre				18.56	20.81	26.26			18.85		21.95

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1973	1	18.16
	1974	2	19.57
	1979	7	18.88
	1983	11	18.36
	1985	13	18.96
	1988	16	20.51
	1990	18	20.98
	1994	22	20.48
	1998	26	22.97
	2000	28	23.24

Derived $Y_{env(DRYBEANS)}$ polynomial equation: $y = 0.0082x^2 - 0.0861x + 18.926$ (see Figure 2.1.4.46)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.79 Area-weighted crop yields - Horse Creek subbasin (cont)

Crop: oats

Units: bushels per acre

Assumption: significant oats production data for Goshen and Laramie Counties during the 1972 - 2001 period; estimate annual yields for years for which data do not exist

National Agricultural Statistics Service (NASS) crop yield data			County:										Horse Creek subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Oats	bu/acre	50.00	61.00	66.00	65.67	64.00	54.33	57.00	66.00	60.00	55.00	61.97
1973	Oats	bu/acre	50.00	50.00	52.20	53.21	53.00	61.00	50.00	59.00	49.00	50.00	54.68
1974	Oats	bu/acre	39.00	50.00	33.00	50.00	48.00	63.00	43.23	43.00	59.81	60.00	51.15
1975	Oats	bu/acre	52.00	52.00	45.82	60.00	46.00	49.00	50.40	40.00	46.00	44.00	46.63
1976	Oats	bu/acre	56.00	59.00	56.79	58.00	54.00	63.00	58.00	60.00	55.00	53.00	55.89
1977	Oats	bu/acre	52.00	53.00	30.00	63.62	44.00	34.00	51.85	51.00	42.00	52.00	41.90
1978	Oats	bu/acre	58.50	62.00	75.35	76.00	76.00	76.00	62.00	79.00	77.00	79.00	76.00
1979	Oats	bu/acre	67.00	62.00	43.00	62.00	56.00	48.00	66.18	46.00	39.00	77.50	54.32
1980	Oats	bu/acre	58.00	72.00	48.00	60.00	59.70	69.00	64.00	55.00	59.00	65.00	61.65
1981	Oats	bu/acre	43.00	46.73	49.00	59.03	65.63	67.00	50.00	54.00	58.00	64.00	65.92
1982	Oats	bu/acre	65.50	62.00	70.00	64.60	79.00	79.42	68.00	74.00	59.00	74.00	79.09
1983	Oats	bu/acre	65.00	60.00	58.17	66.23	60.00	64.00	61.00	60.00	51.00	64.00	60.84
1984	Oats	bu/acre	53.00	54.00	52.00	73.00	55.00	64.46	54.00	58.00	46.29	54.00	56.99
1985	Oats	bu/acre	53.00	51.00	59.00	65.65	60.00	59.00	50.44	58.00	47.00	63.00	59.79
1986	Oats	bu/acre	65.00	71.00	60.00	74.00	63.00	75.00	53.00	63.00	77.00	60.00	65.52
1987	Oats	bu/acre	61.00	68.00	48.36	63.33	80.21	85.27	51.00	71.00	69.00	56.00	81.27
1988	Oats	bu/acre	44.00	46.00	37.50	62.00	44.44	34.50	34.00	39.00	33.00	52.00	42.35
1989	Oats	bu/acre	60.00	62.00	42.50	62.00	47.00	63.00	52.00	50.00	50.00	61.00	50.36
1990	Oats	bu/acre	45.00	50.00	56.60	63.00	55.50	56.31	47.00	50.00	55.00	50.00	55.67
1991	Oats	bu/acre	45.00	56.00	72.00	71.00	69.00	60.00	53.00	50.00	85.00	56.00	67.11
1992	Oats	bu/acre		55.00	55.00	74.40	72.00	64.00	58.00	40.00	55.00	72.00	70.32
1993	Oats	bu/acre		65.00	59.00	86.00	86.00	82.75	72.50	66.00	77.00	65.00	85.32
1994	Oats	bu/acre		45.00	46.00	84.00	77.00	70.00	50.00	62.00	62.00	55.00	75.53
1995	Oats	bu/acre				94.12	71.90	66.61	91.67		73.64		70.79
1996	Oats	bu/acre				80.69	75.18	46.67	44.23	70.00	70.53		69.19
1997	Oats	bu/acre			51.82	85.42	71.43	75.00	72.22	80.00	64.29		72.18
1998	Oats	bu/acre				88.89	76.30	71.67	75.00		50.00		75.33
1999	Oats	bu/acre			55.00	94.29	70.00	65.99	78.00		64.09		69.16
2000	Oats	bu/acre				108.89	72.96	65.19			64.51		71.33
2001	Oats	bu/acre				76.67	67.00	75.00			96.67		68.68

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1973	1	54.68
	1976	4	55.89
	1981	9	65.92
	1986	14	65.52
	1992	20	70.32
	1994	22	75.53
	1998	26	75.33
	2000	28	71.33

Derived $Y_{env(OATS)}$ polynomial equation: $y = -0.0031x^2 + 0.6666x + 57.919$ (see Figure 2.1.4.47)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.79 Area-weighted crop yields - Horse Creek subbasin (cont)

Crop: other hay (not including alfalfa)

Units: tons per acre

Assumption: other hay production ongoing through entire 1972 - 2002 period in both counties located partially or entirely within the subbasin

National Agricultural Statistics Service (NASS) crop yield data			County:										Horse Creek subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Other hay	ton/acre	1.10	1.11	1.16	1.50	1.20	1.50	1.00	1.10	1.30	1.17	1.26
1973	Other hay	ton/acre	1.00	1.13	1.20	1.70	1.20	1.30	1.60	1.00	1.10	1.45	1.22
1974	Other hay	ton/acre	1.00	1.19	1.40	1.53	1.20	1.40	0.80	1.10	1.20	1.23	1.24
1975	Other hay	ton/acre	0.84	1.10	0.90	1.46	1.50	1.04	1.30	0.90	1.10	1.05	1.40
1976	Other hay	ton/acre	1.01	1.20	1.10	1.56	1.20	0.70	1.00	1.00	0.87	1.27	1.10
1977	Other hay	ton/acre	0.90	0.98	1.00	1.24	1.13	0.70	0.80	0.90	1.00	1.00	1.04
1978	Other hay	ton/acre	1.10	1.30	0.90	1.80	1.60	0.90	1.30	1.10	1.20	1.14	1.45
1979	Other hay	ton/acre	1.20	1.40	0.90	2.24	1.20	1.37	1.20	1.20	1.10	1.32	1.24
1980	Other hay	ton/acre	0.90	1.30	1.39	1.51	1.10	1.10	0.90	0.90	1.40	1.11	1.10
1981	Other hay	ton/acre	1.00	1.40	1.40	1.63	1.50	1.20	1.20	1.40	1.47	1.18	1.44
1982	Other hay	ton/acre	1.16	1.59	1.70	1.60	1.86	1.03	2.40	1.61	1.10	1.16	1.69
1983	Other hay	ton/acre	1.31	1.62	2.20	2.20	1.50	1.40	1.85	1.10	1.55	1.28	1.48
1984	Other hay	ton/acre	1.20	1.60	1.40	2.20	1.80	1.10	1.20	1.40	1.40	1.20	1.65
1985	Other hay	ton/acre	1.06	1.66	1.27	1.91	1.47	1.38	1.24	1.00	1.37	1.03	1.45
1986	Other hay	ton/acre	1.24	1.37	0.90	1.73	2.02	1.64	1.90	1.90	1.61	1.18	1.94
1987	Other hay	ton/acre	1.44	1.57	1.36	2.30	1.48	1.99	1.67	1.90	1.15	0.84	1.59
1988	Other hay	ton/acre	1.37	1.36	0.75	0.97	1.41	1.16	1.55	1.60	1.34	0.80	1.36
1989	Other hay	ton/acre	0.68	0.87	0.70	1.29	1.36	1.31	0.78	1.90	1.11	0.78	1.35
1990	Other hay	ton/acre	1.10	1.27	1.00	1.56	1.55	1.53	1.01	1.87	1.60	0.99	1.55
1991	Other hay	ton/acre	1.90	1.34	1.60	1.79	1.83	1.70	1.70	1.40	1.70	1.09	1.80
1992	Other hay	ton/acre	1.11	1.30	1.30	1.79	1.40	1.29	0.90	0.90	1.00	0.89	1.38
1993	Other hay	ton/acre	1.30	1.80	1.90	2.10	2.10	2.10	1.80	1.30	1.20	1.10	2.10
1994	Other hay	ton/acre	1.20	1.42	1.20	1.70	1.50	1.90	0.90	1.40	1.00	0.86	1.58
1995	Other hay	ton/acre	1.10	1.66	1.70	1.80	1.80	1.71	1.26	1.40	1.70	1.23	1.78
1996	Other hay	ton/acre	1.32	1.50	1.56	1.84	1.66	1.67	1.31	0.90	1.38	1.03	1.66
1997	Other hay	ton/acre	1.21	1.54	1.81	2.17	2.00	1.58	1.60	2.00	2.11	1.10	1.91
1998	Other hay	ton/acre	1.14	1.58	1.62	1.92	2.20	1.70	1.37	2.33	1.29	1.06	2.10
1999	Other hay	ton/acre	1.50	1.54	1.90	1.89	1.67	1.50	1.29	1.13	1.90	1.18	1.63
2000	Other hay	ton/acre	1.40	1.56	1.67	1.92	1.50	1.58	1.37	1.00	1.00	1.09	1.52
2001	Other hay	ton/acre	1.03	1.13	1.71	1.91	2.25	1.31	1.39	1.00	1.31	1.01	2.05

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	1.26
	1975	3	1.40
	1978	6	1.45
	1982	10	1.69
	1984	12	1.65
	1987	15	1.59
	1991	19	1.80
	1995	23	1.78
	1997	25	1.91
	2001	29	2.05

Derived $Y_{env(OTHER\ HAY)}$ polynomial equation: $y = -0.0001x^2 + 0.0279x + 1.2754$ (see Figure 2.1.4.48)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.79 Area-weighted crop yields - Horse Creek subbasin (cont)

Crop: spring wheat
Units: tons per acre

Assumption: spring wheat production data for the Goshen and Laramie Counties ends in 1997; assume no significant subbasin spring wheat production after 1997; estimate annual pre-1997 yields for years for which data do not exist

National Agricultural Statistics Service (NASS) crop yield data			County:									Horse Creek subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Spring wheat	bu/acre		40.00	35.00	47.00	35.00	35.88	36.00		34.00		35.18
1973	Spring wheat	bu/acre		34.00	33.67	44.00	33.00	35.40	30.00	33.00	33.00		33.50
1974	Spring wheat	bu/acre		36.00	35.33	50.00	33.00	41.00	28.00	35.00	37.00		34.68
1975	Spring wheat	bu/acre		34.00	40.00	37.00	42.00	35.00	27.00	38.00	35.00		40.53
1976	Spring wheat	bu/acre		35.00	43.00	45.00	40.00	35.00	27.00	39.00	33.00		38.95
1977	Spring wheat	bu/acre		34.00	38.00	47.00	39.00	33.00	30.00	36.00	31.00		37.74
1978	Spring wheat	bu/acre		36.00	32.00	55.00	34.00	33.00	32.00	34.00	32.00		33.79
1979	Spring wheat	bu/acre		38.00	49.40	61.00	42.00	50.00	34.00	45.00	50.00		43.68
1980	Spring wheat	bu/acre		32.00	35.00	41.67	32.00	34.00		33.00	34.00		32.42
1981	Spring wheat	bu/acre		27.00	29.50	34.00	34.00	36.00	25.00	32.00	37.00		34.42
1982	Spring wheat	bu/acre		38.00	37.25	50.00	52.00	58.00	32.00	52.33	56.67		53.26
1983	Spring wheat	bu/acre		40.00	40.00	59.60	54.00	60.00		53.00	60.00		55.26
1984	Spring wheat	bu/acre		60.00	44.00	63.00	55.00	50.00		53.00	45.00		53.95
1985	Spring wheat	bu/acre		49.00	40.00	49.00	40.75	41.00		42.00	38.00		40.80
1986	Spring wheat	bu/acre		44.00	50.00	40.00	63.00	57.50		55.00	53.00		61.85
1987	Spring wheat	bu/acre		36.00	40.00	42.00	34.00	42.00		40.00	38.00		35.68
1988	Spring wheat	bu/acre		37.00	41.00	52.00	55.00	52.00		44.00	41.00		54.37
1989	Spring wheat	bu/acre		43.00	43.00	65.00	46.00	43.00		47.00	47.00		45.37
1990	Spring wheat	bu/acre			30.00	56.00	50.00	47.00			30.00		49.37
1991	Spring wheat	bu/acre					49.60	54.00	48.00	50.00	41.80		50.52
1992	Spring wheat	bu/acre				65.00	40.00	73.00		36.00	39.56		46.93
1993	Spring wheat	bu/acre				89.00	48.12	79.00		58.00	39.87		54.60
1994	Spring wheat	bu/acre				54.17	41.00	45.00		44.17	39.65		41.84
1995	Spring wheat	bu/acre				62.00	67.00	68.46			38.18		67.31
1996	Spring wheat	bu/acre				66.67	49.14	60.00			39.81		51.42
1997	Spring wheat	bu/acre					44.00	58.00			50.00		46.94
1998	Spring wheat	bu/acre											
1999	Spring wheat	bu/acre											
2000	Spring wheat	bu/acre											
2001	Spring wheat	bu/acre											

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	35.18
	1975	3	40.53
	1979	7	43.68
	1982	10	53.26
	1983	11	55.26
	1984	12	53.95
	1988	16	54.37
	1991	19	50.52
	1993	21	54.60
	1995	23	67.31

Derived $Y_{env(SPRINGWHEAT)}$ polynomial equation: $y = -0.0285x^2 + 1.7522x + 34.187$ (see Figure 2.1.4.49)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.79 Area-weighted crop yields - Horse Creek subbasin (cont)

Crop: sugar beets

Units: tons per acre

Assumption: sugar beet production data for Goshen and Laramie Counties is continuous through entire 1972 - 2001 period

National Agricultural Statistics Service (NASS) crop yield data			County:										Horse Creek subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Sugar beets	ton/acre			14.70	19.90	22.93	15.30			22.80		21.33
1973	Sugar beets	ton/acre			10.29	14.60	19.31	11.50			16.40		17.67
1974	Sugar beets	ton/acre					18.46	15.86			17.76		17.91
1975	Sugar beets	ton/acre					20.20	15.64			17.66		19.24
1976	Sugar beets	ton/acre					20.90	17.81			17.85		20.25
1977	Sugar beets	ton/acre					19.40	20.20			14.80		19.57
1978	Sugar beets	ton/acre					18.61	14.60			16.70		17.77
1979	Sugar beets	ton/acre					18.64	14.60			17.90		17.79
1980	Sugar beets	ton/acre					21.80	20.20			16.98		21.46
1981	Sugar beets	ton/acre					25.31	50.00			20.60		30.49
1982	Sugar beets	ton/acre					19.40	22.00			18.30		19.95
1983	Sugar beets	ton/acre					15.78	13.50			12.60		15.30
1984	Sugar beets	ton/acre				13.70	20.87	11.20			15.60		18.84
1985	Sugar beets	ton/acre				17.40	22.80	25.10			19.60		23.28
1986	Sugar beets	ton/acre				18.90	23.41	23.60			19.90		23.45
1987	Sugar beets	ton/acre				16.30	21.50	20.40			17.80		21.27
1988	Sugar beets	ton/acre				19.20	22.00	23.25			19.57		22.26
1989	Sugar beets	ton/acre				21.97	19.07	19.75			17.09		19.21
1990	Sugar beets	ton/acre				20.19	21.00	13.53			19.34		19.43
1991	Sugar beets	ton/acre				21.05	21.47	17.17			16.72		20.57
1992	Sugar beets	ton/acre				20.88	16.97	17.53			16.53		17.09
1993	Sugar beets	ton/acre				19.86	15.63	17.08			17.84		15.93
1994	Sugar beets	ton/acre				16.93	20.56	20.25			20.49		20.49
1995	Sugar beets	ton/acre				20.72	16.34	15.75			13.87		16.22
1996	Sugar beets	ton/acre				20.02	16.88	17.81			17.95		17.08
1997	Sugar beets	ton/acre				22.78	15.69	14.67			16.63		15.48
1998	Sugar beets	ton/acre				21.07	19.37	18.70			17.80		19.23
1999	Sugar beets	ton/acre				21.25	18.40	18.17			18.39		18.35
2000	Sugar beets	ton/acre				21.54	18.70	15.41			19.49		18.01
2001	Sugar beets	ton/acre				18.56	17.71	17.11			19.06		17.58

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1975	3	19.24
	1976	4	20.25
	1980	8	21.46
	1982	10	19.95
	1987	15	21.27
	1988	16	22.26

Derived $Y_{env(SUGARBEETS)}$ polynomial equation: $y = 0.0002x^2 + 0.1579x + 19.086$ (see Figure 2.1.4.50)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.79 Area-weighted crop yields - Horse Creek subbasin (cont)

Crop: winter wheat

Units: bushels per acre

Assumption: winter wheat production data for Goshen and Laramie Counties through entire 1972 - 2001 period

National Agricultural Statistics Service (NASS) crop yield data			County:										Horse Creek subbasin - area-weighted
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	yield
1972	Winter wheat	bu/acre		40.00	40.00	41.00	43.06	42.00		42.00	40.00		42.84
1973	Winter wheat	bu/acre		39.00	38.00	37.00	38.54	37.00		38.00	38.00		38.22
1974	Winter wheat	bu/acre		33.00	36.00	32.00	37.17	36.00		36.00	38.00		36.92
1975	Winter wheat	bu/acre		36.00	38.00	32.00	39.54	36.00		37.00	37.00		38.80
1976	Winter wheat	bu/acre		36.00	32.00	39.00	33.00	33.00		32.00	29.00		33.00
1977	Winter wheat	bu/acre		34.00	25.00	38.00	23.00	26.00		22.00	22.50		23.63
1978	Winter wheat	bu/acre		35.60	34.00		44.00	33.59		33.00	35.00		41.81
1979	Winter wheat	bu/acre		30.00	23.00		35.00	42.00		38.00	34.56		36.47
1980	Winter wheat	bu/acre		34.32	29.00		48.00	33.31		28.00	35.00		44.92
1981	Winter wheat	bu/acre		33.98	32.00		41.00	40.41		33.50	35.00		40.88
1982	Winter wheat	bu/acre		40.00	36.00		51.50	53.00		33.00	39.00		51.82
1983	Winter wheat	bu/acre		38.00	38.00		53.00	54.00		44.00	40.00		53.21
1984	Winter wheat	bu/acre		50.00	40.00	53.00	42.60	59.00		37.00	35.00		46.04
1985	Winter wheat	bu/acre		45.00	35.00	52.00	34.00	38.73		35.00	33.00		34.99
1986	Winter wheat	bu/acre		32.00	38.00	55.00	46.20	60.00		36.00	35.00		49.10
1987	Winter wheat	bu/acre		35.00	37.00	51.00	39.00	56.00		41.00	40.00		42.57
1988	Winter wheat	bu/acre		40.00	39.25	53.00	50.00	54.63		39.00	38.00		50.97
1989	Winter wheat	bu/acre		35.00	36.00	36.00	43.00	46.98		33.00	41.00		43.84
1990	Winter wheat	bu/acre		40.00	40.00	58.00	46.67	65.45		40.00	43.33		50.61
1991	Winter wheat	bu/acre	47.00	40.00	32.50	68.33	55.91	50.32		50.25	45.67		54.74
1992	Winter wheat	bu/acre		43.00	42.00	55.00	46.00	55.59		42.00	47.00		48.01
1993	Winter wheat	bu/acre		50.00	50.00	60.50	52.50	56.96		54.00	55.00		53.44
1994	Winter wheat	bu/acre		50.00		65.00	65.00	42.00		41.00	50.00		60.17
1995	Winter wheat	bu/acre					59.00	80.00		75.00	82.00		63.41
1996	Winter wheat	bu/acre					42.40	54.29			63.64		44.90
1997	Winter wheat	bu/acre					61.21	80.25			56.25		65.21
1998	Winter wheat	bu/acre					72.11	76.92			61.38		73.12
1999	Winter wheat	bu/acre					65.00	79.20			60.00		67.98
2000	Winter wheat	bu/acre					60.00	76.92			64.65		63.55
2001	Winter wheat	bu/acre					73.33	72.00			50.00		73.05

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1973	1	38.22
	1975	3	38.80
	1978	6	41.81
	1980	8	44.92
	1984	12	46.04
	1986	14	49.10
	1988	16	50.97
	1991	19	54.74
	1994	22	60.17
	1997	25	65.21
	1999	27	67.98

Derived $Y_{env(WINTERWHEAT)}$ polynomial equation: $y = 0.0251x^2 + 0.3929x + 37.523$ (see Figure 2.1.4.51)

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Notes:

(1) See Table 2.1.4.51.

Figure 2.1.4.43.
Area-weighted annual barley yields and Y_{env} polynomial trend line and equation
Horse Creek subbasin

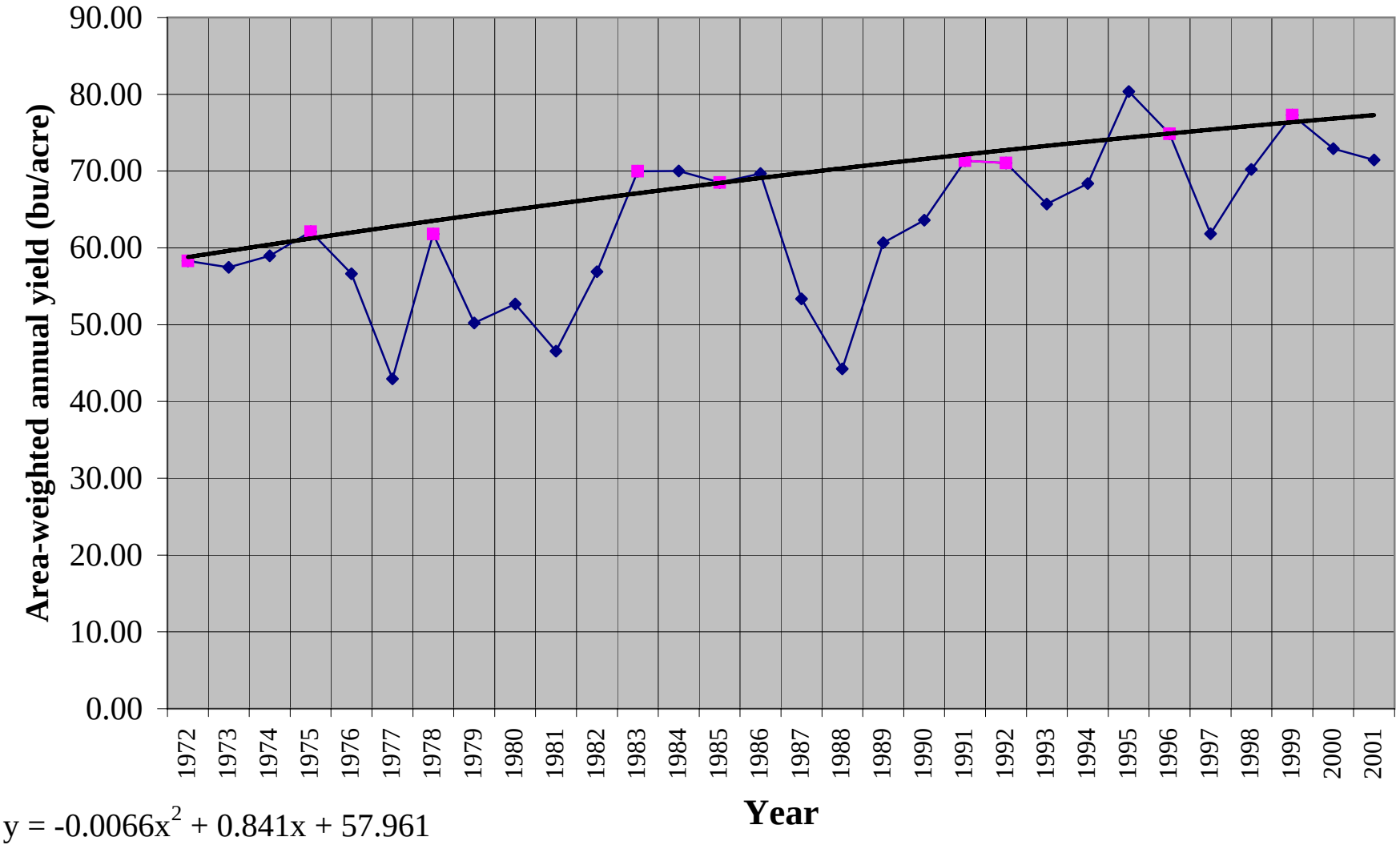
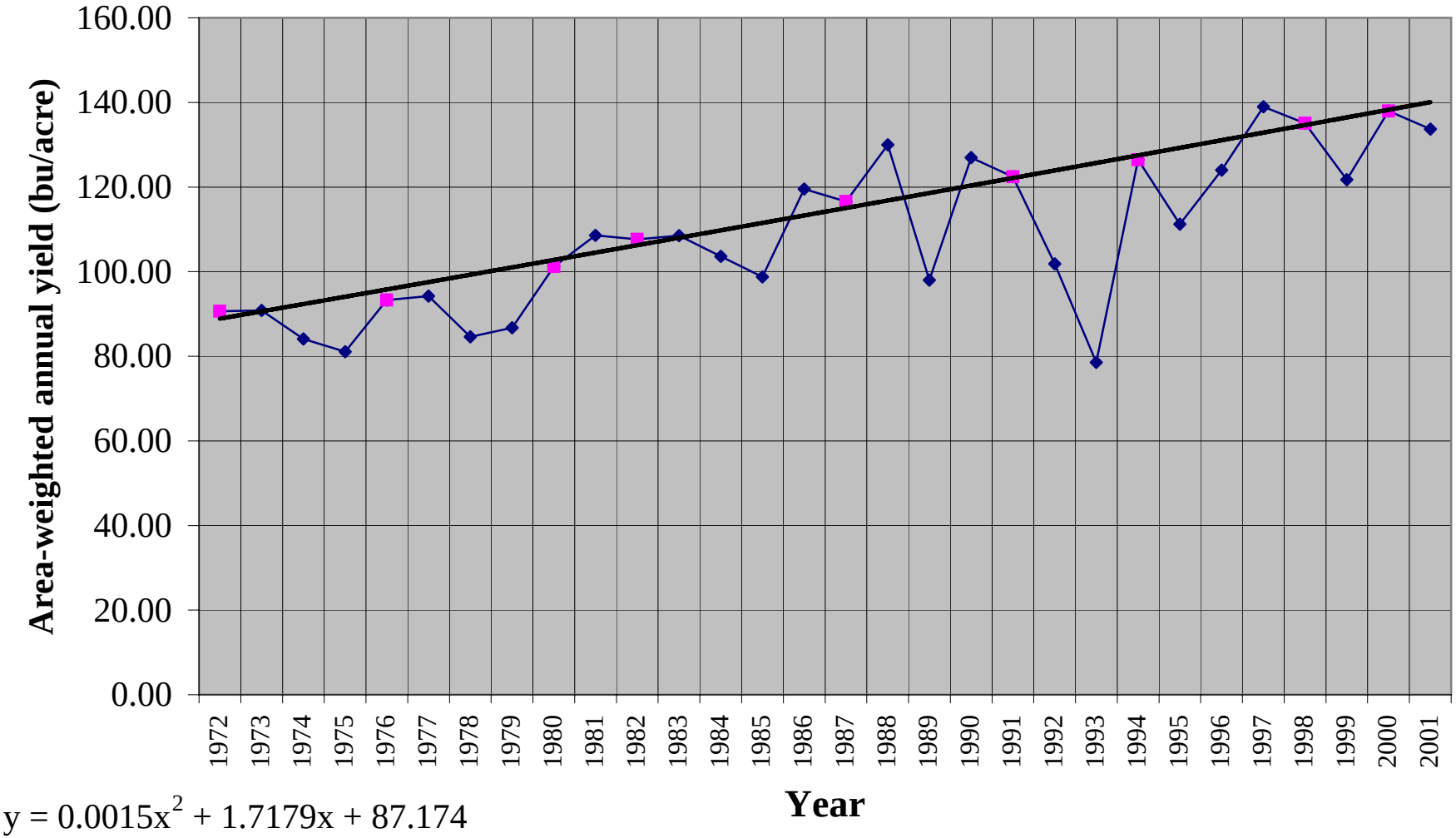


Figure 2.1.4.44.
Area-weighted annual corn yields and Y_{env} polynomial trend line and equation
Horse Creek subbasin



$y = 0.0015x^2 + 1.7179x + 87.174$

Figure 2.1.4.45.
Area-weighted annual dry beans yields and Y_{env} polynomial trend line and equation
Horse Creek subbasin

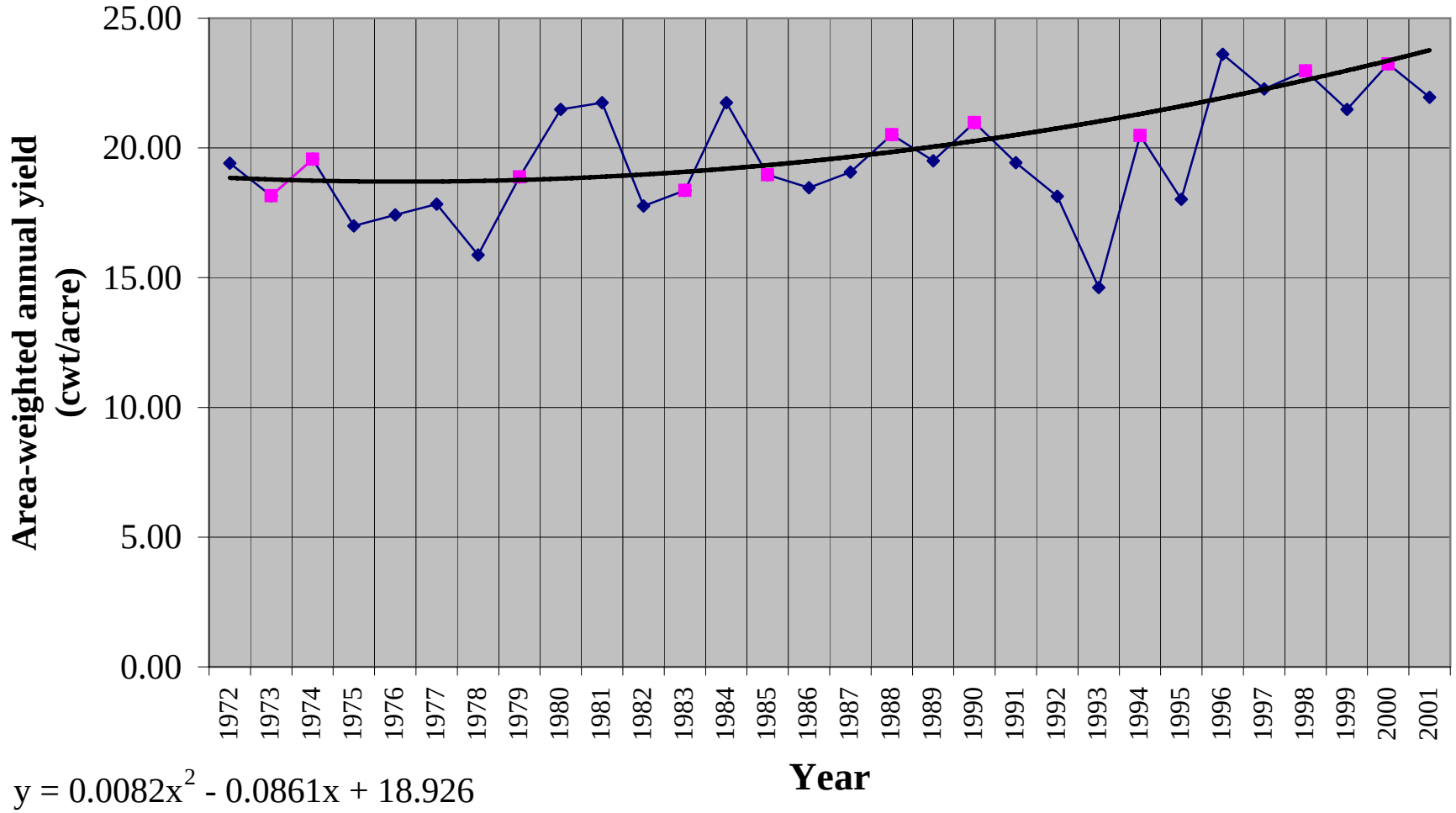
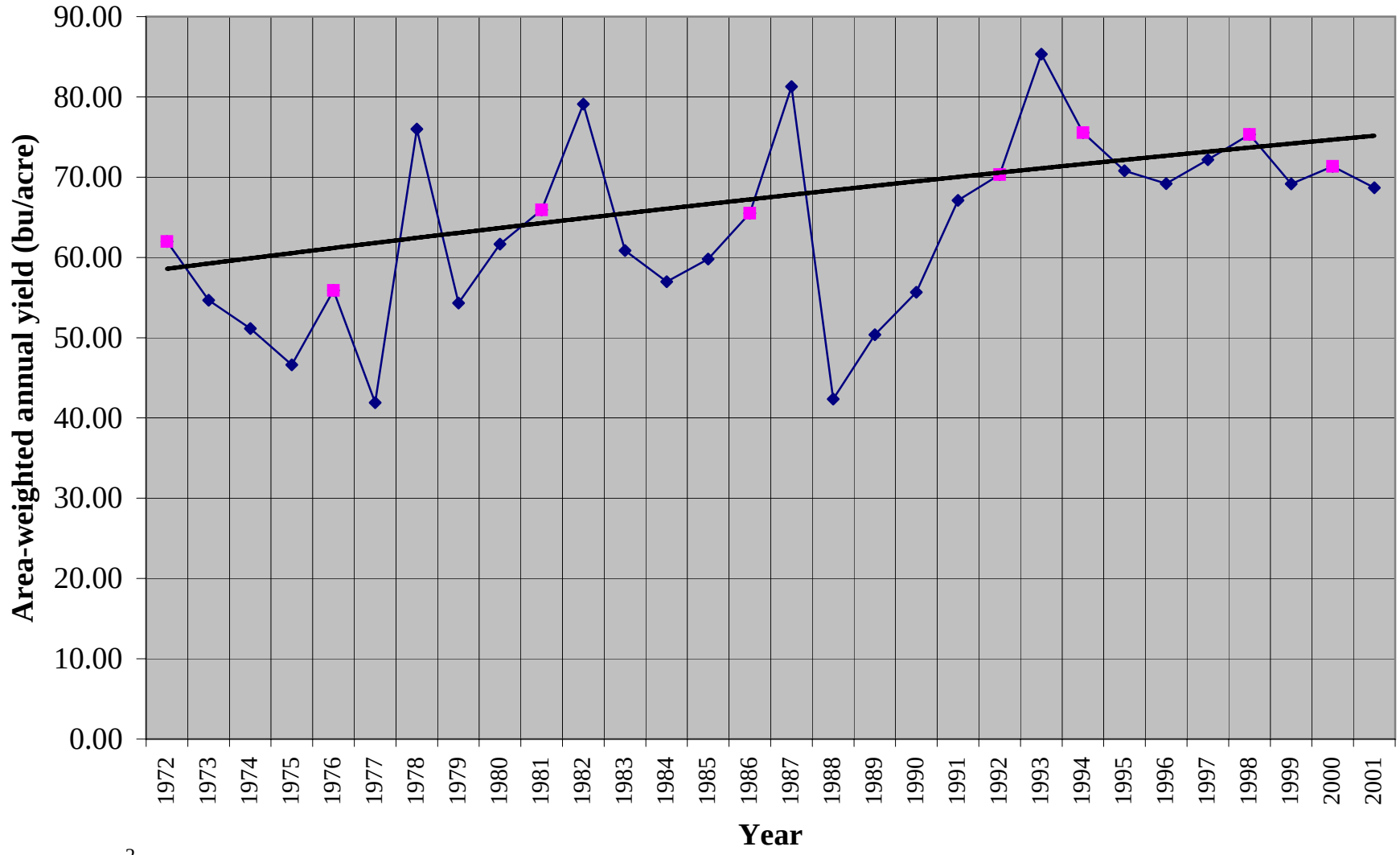


Figure 2.1.4.46.
Area-weighted annual oats yields and Y_{env} polynomial trend line and equation
Horse Creek subbasin



$y = -0.0031x^2 + 0.6666x + 57.919$

Figure 2.1.4.47.
Area-weighted annual other hay yields and Y_{env} polynomial trendline and equation
Horse Creek subbasin

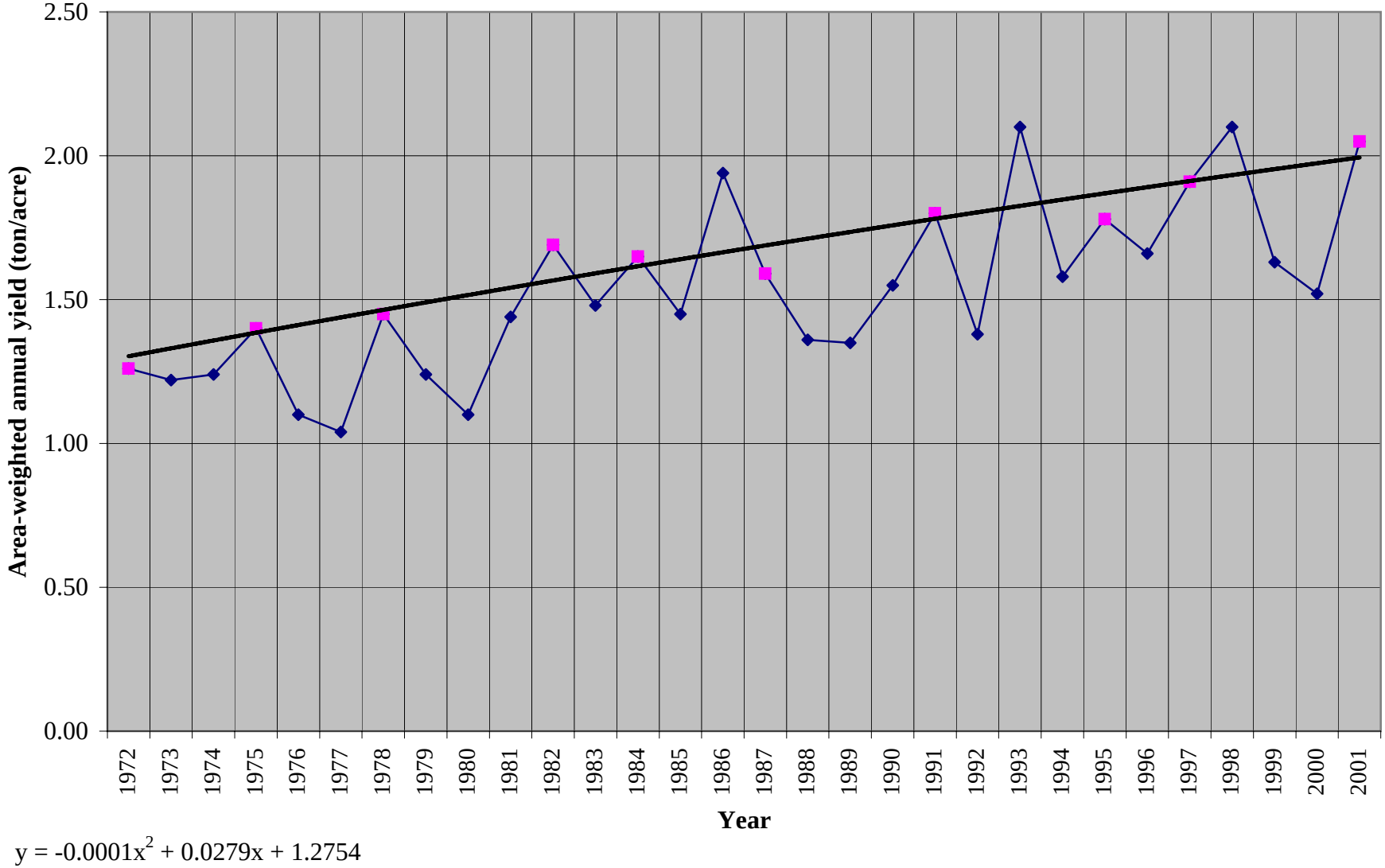
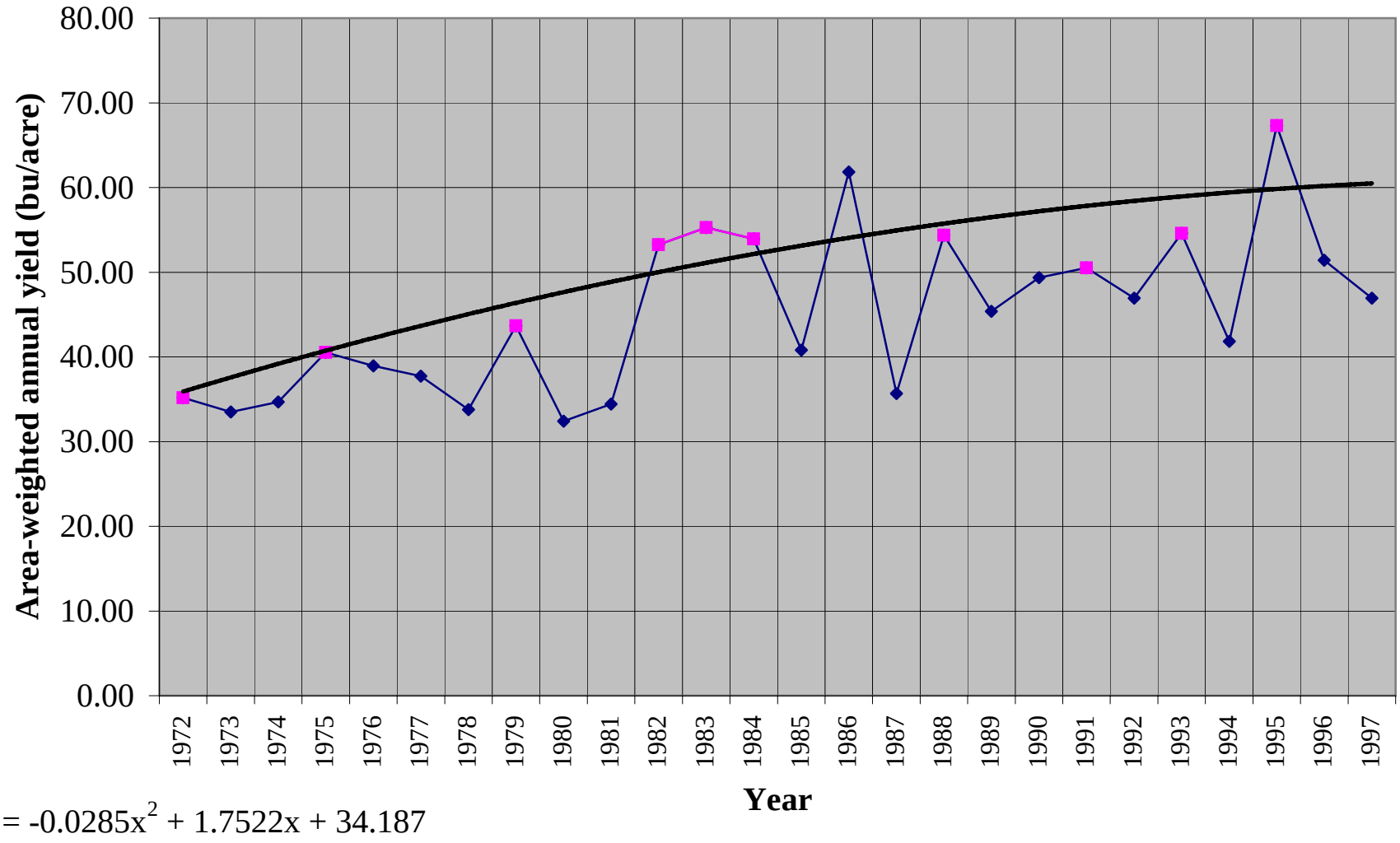
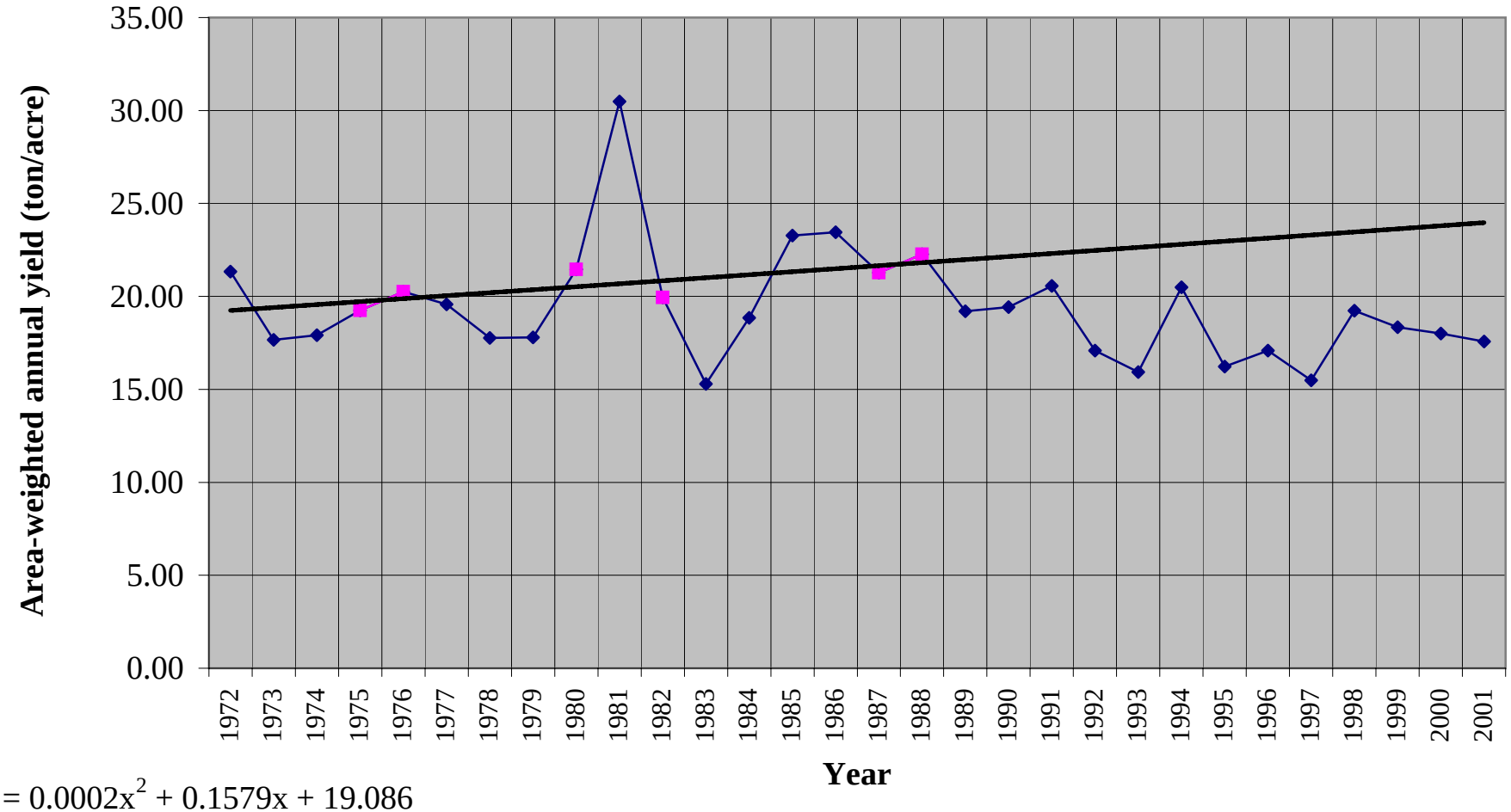


Figure 2.1.4.48.
Area-weighted annual spring wheat yields and Y_{env} polynomial trendline and equation
Horse Creek subbasin



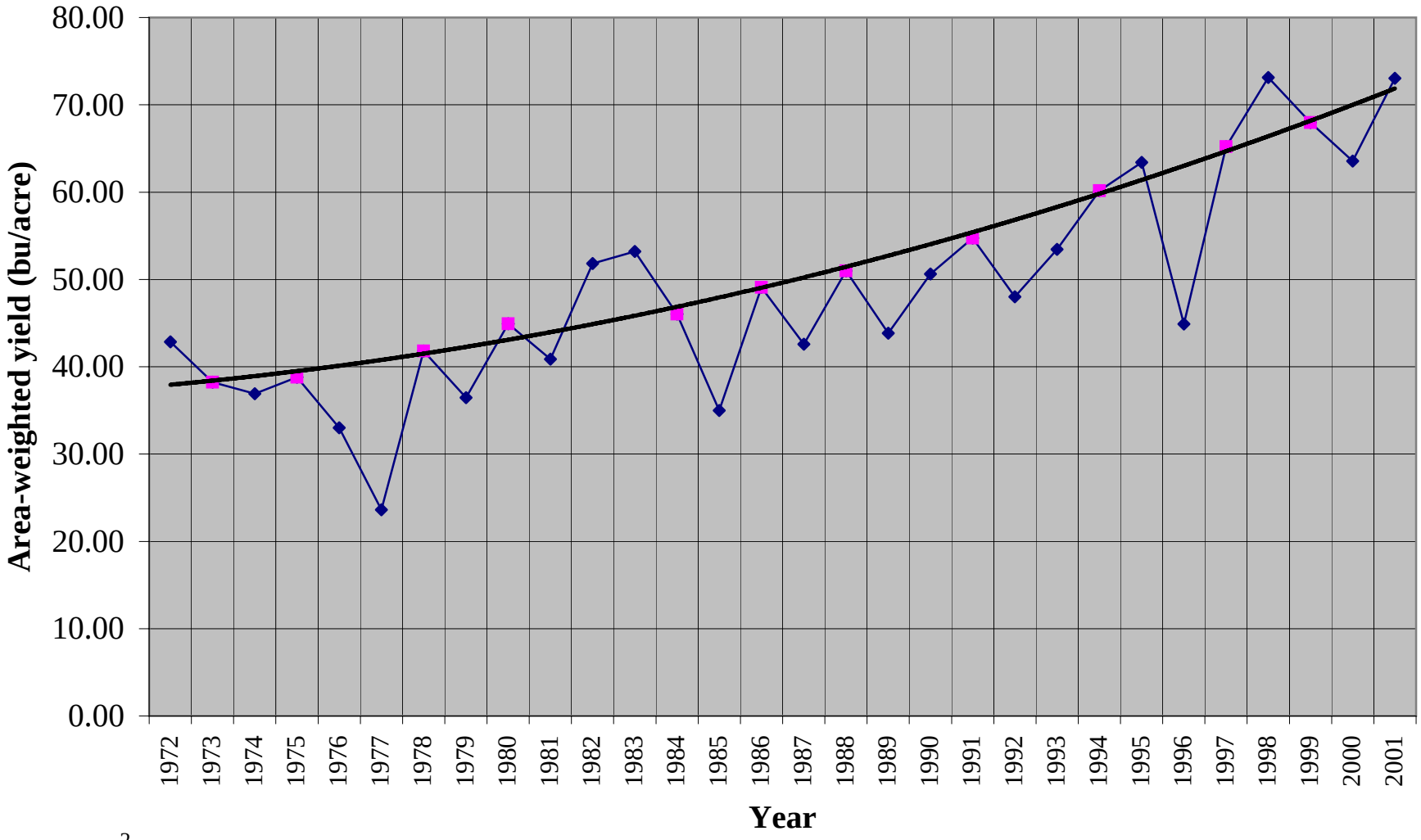
$y = -0.0285x^2 + 1.7522x + 34.187$

Figure 2.1.4.49.
Area-weighted annual sugar beets yields and Y_{env} polynomial trendline and equation
Horse Creek subbasin



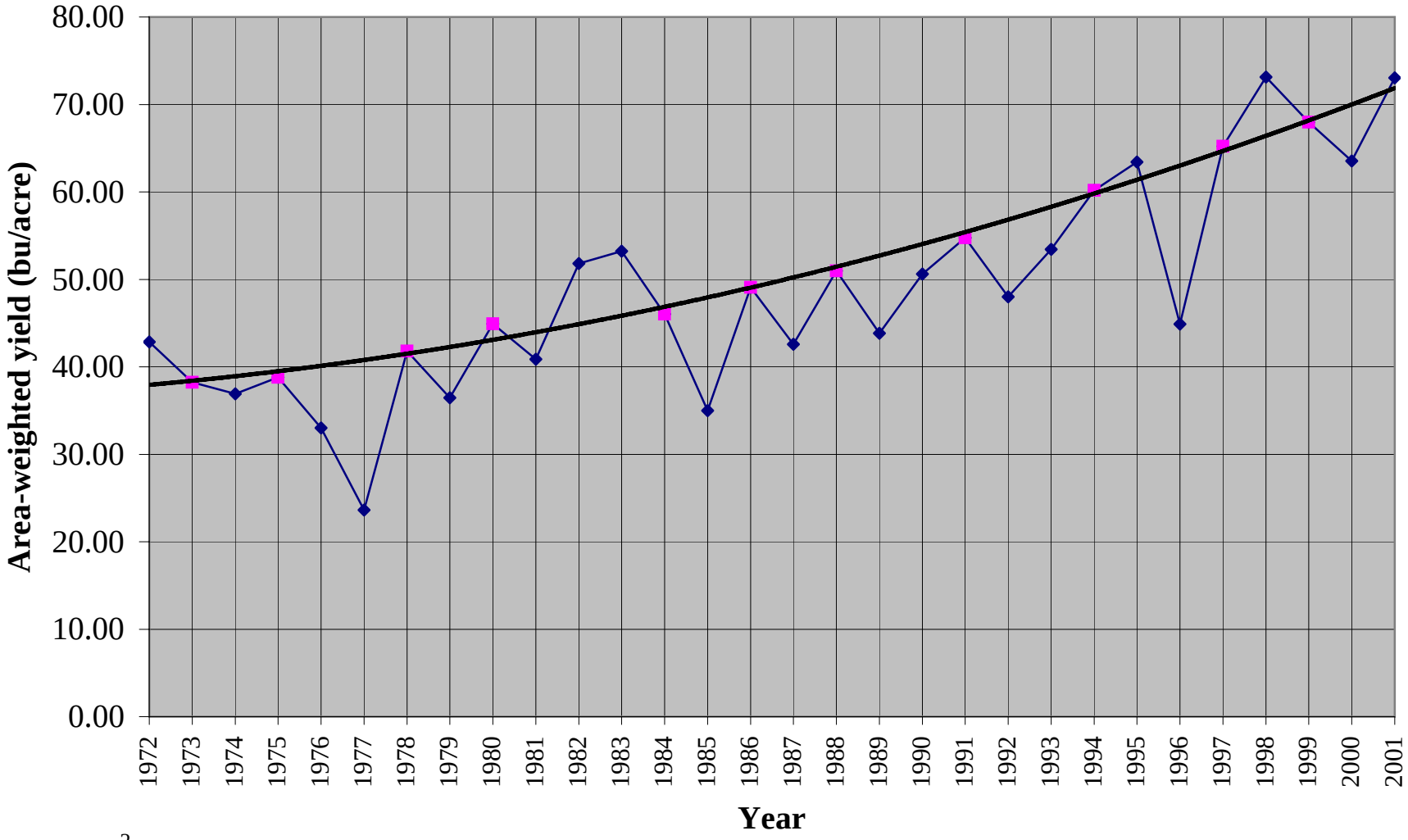
$y = 0.0002x^2 + 0.1579x + 19.086$

Figure 2.1.4.50.
Area-weighted winter wheat yields and Y_{env} polynomial trendline and equation
Horse Creek subbasin



$y = 0.0251x^2 + 0.3929x + 37.523$

Figure 2.1.4.51
Area-weighted winter wheat yields and Y_{env} polynomial trendline and equation
Horse Creek subbasin



$y = 0.0251x^2 + 0.3929x + 37.523$

Derivation of adjusted, yield-based crop evapotranspiration in the Horse Creek subbasin during high stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.79 and Figures 2.1.4.43 through 2.1.4.51 is summarized in Table 2.1.4.80.

Table 2.1.4.80 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Horse Creek subbasin

1986						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.20	6.06	8.56	5.36	--	--
Average yield, Yi (bu/acre) (2)			49.10			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			47.94			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.20**	**6.06**	**8.56**	**5.36**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.80	4.80	8.78	5.98	--	--
Average yield, Yi (bu/acre) (2)			61.85			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			53.13			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.80**	**4.80**	**8.78**	**5.98**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.91	5.33	8.88	6.94	2.28	1.02
Average yield, Yi (bu/acre) (2)			69.68			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			68.44			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.91**	**5.33**	**8.88**	**6.94**	**2.28**	**1.02**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.91	5.33	8.88	6.94	2.28	1.02
Average yield, Yi (bu/acre) (2)			65.52			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.64			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.88**	**5.25**	**8.75**	**6.84**	**2.25**	**1.01**

Table 2.1.4.80 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Horse Creek subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.02	1.37	6.60	9.19	3.88	1.02
Average yield, Yi (cwt/acre) (2)			18.47			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.33			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.98**	**1.32**	**6.34**	**8.83**	**3.73**	**0.98**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.75	2.62	6.10	8.55	7.40	3.52
Average yield, Yi (tons/acre) (2)			23.45			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.34			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.75**	**2.62**	**6.10**	**8.55**	**7.40**	**3.52**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.02	2.17	8.57	9.74	6.79	1.71
Average yield, Yi (bu/acre) (2)			119.55			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			111.52			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.02**	**2.17**	**8.57**	**9.74**	**6.79**	**1.71**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.86	5.62	6.61	8.15	3.76	2.05
Average yield, Yi (tons/acre) (2)			4.21			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.14			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month) (5)	**2.86**	**5.62**	**6.61**	**8.15**	**3.76**	**2.05**

Table 2.1.4.80 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Horse Creek subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.04	3.83	7.76	8.49	4.61	3.03
Average yield, Yi (tons/acre) (2)			1.94			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.65			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**2.04**	**3.83**	**7.76**	**8.49**	**4.61**	**3.03**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1986 - 1972 = 14					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.22	2.52	5.44	6.00	5.20	3.16
Average yield, Yi (2)			1.94			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.65			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.22**	**2.52**	**5.44**	**6.00**	**5.20**	**3.16**
1984						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.76	6.64	7.91	5.24	--	--
Average yield, Yi (bu/acre) (2)			46.04			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			45.85			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**1.76**	**6.64**	**7.91**	**5.24**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.43	5.26	8.12	5.85	--	--
Average yield, Yi (bu/acre) (2)			53.95			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			51.11			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.43**	**5.26**	**8.12**	**5.85**	**--**	**--**

Table 2.1.4.80 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Horse Creek subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.52	5.84	8.21	6.79	2.28	1.06
Average yield, Yi (bu/acre) (2)			70.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.10			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.52**	**5.84**	**8.21**	**6.79**	**2.28**	**1.06**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.52	5.84	8.21	6.79	2.28	1.06
Average yield, Yi (bu/acre) (2)			56.99			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.47			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.35**	**5.18**	**7.29**	**6.03**	**2.02**	**0.94**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.82	1.50	6.10	8.99	3.89	1.06
Average yield, Yi (cwt/acre) (2)			21.74			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.07			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**0.82**	**1.50**	**6.10**	**8.99**	**3.89**	**1.06**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.40	2.87	5.64	8.36	7.41	3.65
Average yield, Yi (tons/acre) (2)			18.84			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.01			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.27**	**2.61**	**5.13**	**7.61**	**6.74**	**3.32**

Table 2.1.4.80 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Horse Creek subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.82	2.37	7.93	9.52	6.80	1.77
Average yield, Yi (bu/acre) (2)			103.63			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			108.00			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.79**	**2.29**	**7.67**	**9.21**	**6.58**	**1.71**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.29	6.15	6.12	7.97	3.76	2.12
Average yield, Yi (tons/acre) (2)			3.90			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.07			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.20**	**5.91**	**5.88**	**7.65**	**3.61**	**2.04**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.63	4.20	7.18	8.31	4.62	3.15
Average yield, Yi (tons/acre) (2)			1.65			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.60			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.63**	**4.20**	**7.18**	**8.31**	**4.62**	**3.15**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1984 - 1972 = 12					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.98	2.76	5.03	5.87	5.20	3.27
Average yield, Yi (2)			1.65			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.60			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**0.98**	**2.76**	**5.03**	**5.87**	**5.20**	**3.27**

Table 2.1.4.80 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Horse Creek subbasin (cont)

1985						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.54	6.83	8.11	5.35	--	--
Average yield, Yi (bu/acre) (2)			34.99			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			46.87			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.98**	**5.32**	**6.32**	**4.17**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	2.07	5.41	8.32	5.98	--	--
Average yield, Yi (bu/acre) (2)			40.80			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			52.15			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.68**	**4.39**	**6.75**	**4.85**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.20	6.01	8.41	6.93	2.34	1.05
Average yield, Yi (bu/acre) (2)			68.52			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.78			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**2.20**	**6.01**	**8.41**	**6.93**	**2.34**	**1.05**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.20	6.01	8.41	6.93	2.34	1.05
Average yield, Yi (bu/acre) (2)			59.79			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.06			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**2.02**	**5.51**	**7.72**	**6.36**	**2.15**	**0.96**

Table 2.1.4.80 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Horse Creek subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.18	1.54	6.25	9.18	3.99	1.05
Average yield, Yi (cwt/acre) (2)			18.96			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.19			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.17**	**1.52**	**6.18**	**9.08**	**3.95**	**1.04**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.03	2.95	5.78	8.54	7.60	3.59
Average yield, Yi (tons/acre) (2)			23.28			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.17			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**2.03**	**2.95**	**5.78**	**8.54**	**7.60**	**3.59**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.18	2.44	8.12	9.72	6.97	1.74
Average yield, Yi (bu/acre) (2)			98.74			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			109.76			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.09**	**2.24**	**7.47**	**8.94**	**6.41**	**1.60**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.30	6.33	6.27	8.14	3.86	2.09
Average yield, Yi (tons/acre) (2)			3.13			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.11			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.55**	**4.89**	**4.85**	**6.29**	**2.98**	**1.62**

Table 2.1.4.80 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Horse Creek subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.36	4.32	7.35	8.48	4.73	3.10
Average yield, Yi (tons/acre) (2)			1.45			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.62			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**2.12**	**3.89**	**6.62**	**7.63**	**4.26**	**2.79**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1985 - 1972 = 13					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.41	2.84	5.15	5.99	5.33	3.23
Average yield, Yi (2)			1.45			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.62			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.27**	**2.56**	**4.64**	**5.39**	**4.80**	**2.91**
1973						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.78	5.92	8.17	4.96	--	--
Average yield, Yi (bu/acre) (2)			38.22			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			37.94			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**1.78**	**5.92**	**8.17**	**4.96**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.45	4.69	8.38	5.54	--	--
Average yield, Yi (bu/acre) (2)			33.50			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			35.91			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.37**	**4.42**	**7.89**	**5.22**	**--**	**--**

Table 2.1.4.80 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Horse Creek subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.54	5.21	8.47	6.42	2.39	0.97
Average yield, Yi (bu/acre) (2)			57.47			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.80			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.51**	**5.11**	**8.30**	**6.29**	**2.34**	**0.95**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.54	5.21	8.47	6.42	2.39	0.97
Average yield, Yi (bu/acre) (2)			54.68			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			58.58			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.54**	**5.21**	**8.47**	**6.42**	**2.39**	**0.97**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.82	1.33	6.30	8.51	4.07	0.97
Average yield, Yi (cwt/acre) (2)			18.16			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.85			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.79**	**1.29**	**6.10**	**8.24**	**3.94**	**0.94**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.41	2.56	5.82	7.91	7.76	3.35
Average yield, Yi (tons/acre) (2)			17.67			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.24			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.31**	**2.38**	**5.41**	**7.35**	**7.21**	**3.11**

Table 2.1.4.80 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Horse Creek subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.82	2.12	8.18	9.01	7.11	1.62
Average yield, Yi (bu/acre) (2)			90.85			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			88.89			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.82**	**2.12**	**8.18**	**9.01**	**7.11**	**1.62**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.31	5.48	6.31	7.54	3.93	1.95
Average yield, Yi (tons/acre) (2)			3.42			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.53			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.24**	**5.32**	**6.12**	**7.32**	**3.81**	**1.89**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.65	3.74	7.41	7.86	4.83	2.89
Average yield, Yi (tons/acre) (2)			1.22			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.30			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.55**	**3.52**	**6.98**	**7.40**	**4.55**	**2.72**

Table 2.1.4.80 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - Horse Creek subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1973 - 1972 = 1					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.99	2.46	5.19	5.55	5.44	3.00
Average yield, Yi (2)			1.22			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.30			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.93**	**2.32**	**4.89**	**5.22**	**5.12**	**2.82**

Notes:

(1) See Table 2.1.4.45.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

Derivation of adjusted, yield-based crop evapotranspiration in the Horse Creek subbasin during low stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.79 and Figures 2.1.4.43 through 2.1.4.51 is summarized in Table 2.1.4.81.

Table 2.1.4.81 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Horse Creek subbasin

1972						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.10	5.97	7.92	4.97	--	--
Average yield, Yi (bu/acre) (2)			42.84			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			37.52			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.10**	**5.97**	**7.92**	**4.97**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.71	4.73	8.13	5.55	--	--
Average yield, Yi (bu/acre) (2)			35.18			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			34.19			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.71**	**4.73**	**8.13**	**5.55**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.82	5.26	8.22	6.44	2.17	1.17
Average yield, Yi (bu/acre) (2)			58.31			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			57.96			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.82**	**5.26**	**8.22**	**6.44**	**2.17**	**1.17**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.82	5.26	8.22	6.44	2.17	1.17
Average yield, Yi (bu/acre) (2)			61.97			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			57.92			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.82**	**5.26**	**8.22**	**6.44**	**2.17**	**1.17**

Table 2.1.4.81 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Horse Creek subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.97	1.35	6.11	8.53	3.69	1.17
Average yield, Yi (cwt/acre) (2)			19.41			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.93			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**0.97**	**1.35**	**6.11**	**8.53**	**3.69**	**1.17**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.67	2.58	5.65	7.93	7.03	4.02
Average yield, Yi (tons/acre) (2)			21.33			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.09			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.67**	**2.58**	**5.65**	**7.93**	**7.03**	**4.02**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.97	2.14	7.94	9.03	6.45	1.95
Average yield, Yi (bu/acre) (2)			90.64			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			87.17			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.97**	**2.14**	**7.94**	**9.03**	**6.45**	**1.95**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.73	5.54	6.13	7.56	3.57	2.34
Average yield, Yi (tons/acre) (2)			3.24			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.47			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.56**	**5.19**	**5.74**	**7.08**	**3.34**	**2.19**

Table 2.1.4.81 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Horse Creek subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.95	3.78	7.19	7.88	4.38	3.47
Average yield, Yi (tons/acre) (2)			1.26			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.28			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.92**	**3.72**	**7.08**	**7.76**	**4.31**	**3.42**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1972 - 1972 = 0					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.17	2.48	5.04	5.57	4.93	3.61
Average yield, Yi (2)			1.26			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.28			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.15**	**2.44**	**4.97**	**5.49**	**4.86**	**3.56**
	1989					
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.46	6.60	7.77	5.51	--	--
Average yield, Yi (bu/acre) (2)			43.84			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			51.46			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.14**	**5.75**	**6.77**	**4.80**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	2.01	5.24	7.98	6.15	--	--
Average yield, Yi (bu/acre) (2)			45.37			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			55.74			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.68**	**4.39**	**6.69**	**5.16**	**--**	**--**

Table 2.1.4.81 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Horse Creek subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.13	5.81	8.06	7.14	2.17	1.16
Average yield, Yi (bu/acre) (2)			60.66			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			70.35			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.87**	**5.11**	**7.09**	**6.28**	**1.91**	**1.02**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.13	5.81	8.06	7.14	2.17	1.16
Average yield, Yi (bu/acre) (2)			50.36			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			68.36			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.64**	**4.48**	**6.21**	**5.51**	**1.67**	**0.89**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.14	1.49	6.00	9.45	3.70	1.16
Average yield, Yi (cwt/acre) (2)			19.50			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.83			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.12**	**1.47**	**5.91**	**9.31**	**3.65**	**1.14**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.96	2.86	5.54	8.79	7.05	3.98
Average yield, Yi (tons/acre) (2)			19.21			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.83			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.76**	**2.56**	**4.96**	**7.87**	**6.31**	**3.56**

Table 2.1.4.81 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Horse Creek subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.14	2.36	7.79	10.01	6.47	1.93
Average yield, Yi (bu/acre) (2)			97.98			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			116.81			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.99**	**2.06**	**6.79**	**8.72**	**5.64**	**1.68**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.20	6.12	6.01	8.38	3.58	2.32
Average yield, Yi (tons/acre) (2)			4.20			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.24			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**3.17**	**6.07**	**5.96**	**8.30**	**3.55**	**2.30**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.28	4.18	7.05	8.73	4.39	3.44
Average yield, Yi (tons/acre) (2)			1.35			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.72			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.81**	**3.32**	**5.61**	**6.94**	**3.49**	**2.74**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1989 - 1972 = 17					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.37	2.74	4.94	6.17	4.95	3.57
Average yield, Yi (2)			1.35			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.72			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.09**	**2.18**	**3.93**	**4.91**	**3.94**	**2.84**

Table 2.1.4.81 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Horse Creek subbasin (cont)

1990						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.29	5.75	8.48	4.77	--	--
Average yield, Yi (bu/acre) (2)			50.61			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			52.73			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.21**	**5.55**	**8.18**	**4.60**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.87	4.56	8.70	5.33	--	--
Average yield, Yi (bu/acre) (2)			49.37			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			56.49			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.67**	**4.06**	**7.75**	**4.75**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.98	5.06	8.79	6.18	2.24	1.24
Average yield, Yi (bu/acre) (2)			63.60			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			70.96			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.80**	**4.60**	**8.00**	**5.62**	**2.04**	**1.13**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.98	5.06	8.79	6.18	2.24	1.24
Average yield, Yi (bu/acre) (2)			55.67			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			68.91			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.65**	**4.21**	**7.32**	**5.15**	**1.87**	**1.03**

Table 2.1.4.81 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Horse Creek subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.06	1.30	6.54	8.19	3.82	1.24
Average yield, Yi (cwt/acre) (2)			20.98			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.03			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**1.06**	**1.30**	**6.54**	**8.19**	**3.82**	**1.24**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.82	2.49	6.04	7.61	7.28	4.25
Average yield, Yi (tons/acre) (2)			19.43			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.99			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.64**	**2.24**	**5.43**	**6.84**	**6.54**	**3.82**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.06	2.06	8.49	8.67	6.68	2.06
Average yield, Yi (bu/acre) (2)			126.94			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			118.58			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.06**	**2.06**	**8.49**	**8.67**	**6.68**	**2.06**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.97	5.33	6.55	7.26	3.69	2.47
Average yield, Yi (tons/acre) (2)			4.09			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.27			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.85**	**5.12**	**6.29**	**6.97**	**3.54**	**2.37**

Table 2.1.4.81 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Horse Creek subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.12	3.64	7.69	7.56	4.53	3.67
Average yield, Yi (tons/acre) (2)			1.55			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.75			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.89**	**3.24**	**6.85**	**6.74**	**4.04**	**3.27**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1990 - 1972 = 18					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.27	2.39	5.39	5.34	5.11	3.81
Average yield, Yi (2)			1.55			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.75			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.13**	**2.13**	**4.80**	**4.76**	**4.55**	**3.40**
1992						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.68	6.99	7.77	4.89	--	--
Average yield, Yi (bu/acre) (2)			48.01			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			55.42			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.37**	**6.18**	**6.87**	**4.32**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	2.19	5.54	7.98	5.45	--	--
Average yield, Yi (bu/acre) (2)			46.93			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			57.83			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.83**	**4.63**	**6.67**	**4.56**	**--**	**--**

Table 2.1.4.81 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Horse Creek subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.32	6.16	8.06	6.32	2.10	1.26
Average yield, Yi (bu/acre) (2)			71.05			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			72.14			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**2.29**	**6.08**	**7.95**	**6.24**	**2.07**	**1.24**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.32	6.16	8.06	6.32	2.10	1.26
Average yield, Yi (bu/acre) (2)			70.32			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			70.01			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**2.32**	**6.16**	**8.06**	**6.32**	**2.10**	**1.26**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.24	1.58	6.00	8.38	3.57	1.26
Average yield, Yi (cwt/acre) (2)			18.14			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.48			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.12**	**1.42**	**5.40**	**7.55**	**3.22**	**1.13**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.14	3.02	5.54	7.79	6.81	4.34
Average yield, Yi (tons/acre) (2)			17.09			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			22.32			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.70**	**2.40**	**4.41**	**6.20**	**5.42**	**3.46**

Table 2.1.4.81 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Horse Creek subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.24	2.50	7.79	8.87	6.25	2.11
Average yield, Yi (bu/acre) (2)			101.85			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			122.13			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.08**	**2.17**	**6.76**	**7.69**	**5.42**	**1.83**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.48	6.48	6.01	7.43	3.45	2.53
Average yield, Yi (tons/acre) (2)			3.79			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.32			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**3.07**	**5.72**	**5.31**	**6.56**	**3.05**	**2.23**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.49	4.42	7.05	7.74	4.24	3.75
Average yield, Yi (tons/acre) (2)			1.38			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.79			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.95**	**3.46**	**5.51**	**6.05**	**3.32**	**2.93**

Table 2.1.4.81 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - Horse Creek subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1992 - 1972 = 20					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.49	2.90	4.94	5.47	4.78	3.90
Average yield, Yi (2)			1.38			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.79			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.16**	**2.27**	**3.86**	**4.28**	**3.74**	**3.05**

Notes:

(1) See Table 2.1.4.45.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

Derivation of adjusted, yield-based crop evapotranspiration in the Horse Creek subbasin during normal or average stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.79 and Figures 2.1.4.43 through 2.1.4.51 is summarized in Table 2.1.4.82.

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin

1974						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.10	6.60	8.52	5.65	--	--
Average yield, Yi (bu/acre) (2)			36.92			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			38.41			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.03**	**6.38**	**8.23**	**5.46**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.71	5.24	8.74	6.31	--	--
Average yield, Yi (bu/acre) (2)			34.68			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			37.58			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.60**	**4.89**	**8.15**	**5.89**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.81	5.81	8.84	7.31	2.20	1.09
Average yield, Yi (bu/acre) (2)			58.97			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.62			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.79**	**5.75**	**8.76**	**7.24**	**2.18**	**1.08**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.81	5.81	8.84	7.31	2.20	1.09
Average yield, Yi (bu/acre) (2)			51.15			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.24			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.60**	**5.12**	**7.79**	**6.44**	**1.94**	**0.96**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.97	1.49	6.57	9.69	3.74	1.09
Average yield, Yi (cwt/acre) (2)			19.57			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.79			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**0.97**	**1.49**	**6.57**	**9.69**	**3.74**	**1.09**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.67	2.86	6.08	9.01	7.14	3.75
Average yield, Yi (tons/acre) (2)			17.91			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.40			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.56**	**2.67**	**5.67**	**8.41**	**6.66**	**3.50**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.97	2.36	8.54	10.26	6.55	1.82
Average yield, Yi (bu/acre) (2)			84.07			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			90.62			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.91**	**2.22**	**8.05**	**9.67**	**6.17**	**1.71**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.72	6.12	6.59	8.59	3.62	2.18
Average yield, Yi (tons/acre) (2)			3.64			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.58			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month) (5)	**2.72**	**6.12**	**6.59**	**8.59**	**3.62**	**2.18**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.94	4.18	7.73	8.95	4.45	3.24
Average yield, Yi (tons/acre) (2)			1.24			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.33			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.81**	**3.91**	**7.23**	**8.37**	**4.16**	**3.03**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1974 - 1972 = 2					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.16	2.74	5.42	6.32	5.01	3.37
Average yield, Yi (2)			1.24			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.33			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.09**	**2.56**	**5.07**	**5.91**	**4.69**	**3.15**
	1983					
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.84	5.65	7.00	5.40	--	--
Average yield, Yi (bu/acre) (2)			53.21			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			44.88			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**1.84**	**5.65**	**7.00**	**5.40**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.50	4.48	7.19	6.02	--	--
Average yield, Yi (bu/acre) (2)			55.26			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			50.01			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.50**	**4.48**	**7.19**	**6.02**	**--**	**--**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.59	4.97	7.27	6.98	2.36	1.25
Average yield, Yi (bu/acre) (2)			69.97			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			66.41			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.59**	**4.97**	**7.27**	**6.98**	**2.36**	**1.25**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.59	4.97	7.27	6.98	2.36	1.25
Average yield, Yi (bu/acre) (2)			60.84			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.88			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.50**	**4.70**	**6.88**	**6.60**	**2.23**	**1.18**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.85	1.27	5.40	9.25	4.02	1.25
Average yield, Yi (cwt/acre) (2)			18.36			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.97			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.83**	**1.23**	**5.25**	**8.99**	**3.91**	**1.22**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.47	2.44	4.99	8.60	7.67	4.28
Average yield, Yi (tons/acre) (2)			15.30			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.85			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.13**	**1.88**	**3.83**	**6.61**	**5.89**	**3.29**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.85	2.02	7.02	9.80	7.03	2.08
Average yield, Yi (bu/acre) (2)			108.54			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			106.25			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.85**	**2.02**	**7.02**	**9.80**	**7.03**	**2.08**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.39	5.24	5.41	8.20	3.89	2.49
Average yield, Yi (tons/acre) (2)			4.45			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.03			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month) (5)	**2.39**	**5.24**	**5.41**	**8.20**	**3.89**	**2.49**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.71	3.57	6.35	8.55	4.77	3.70
Average yield, Yi (tons/acre) (2)			1.48			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.57			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.62**	**3.38**	**6.00**	**8.08**	**4.51**	**3.50**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1983 - 1972 = 11					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.02	2.35	4.45	6.04	5.38	3.84
Average yield, Yi (2)			1.48			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.57			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.96**	**2.22**	**4.21**	**5.71**	**5.09**	**3.63**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

1988						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.62	6.33	9.38	5.33	--	--
Average yield, Yi (bu/acre) (2)			50.97			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			50.24			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.62**	**6.33**	**9.38**	**5.33**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	2.13	5.02	9.63	5.95	--	--
Average yield, Yi (bu/acre) (2)			54.37			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			54.93			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**2.11**	**4.98**	**9.54**	**5.90**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.26	5.57	9.73	6.90	2.38	1.19
Average yield, Yi (bu/acre) (2)			44.26			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			69.73			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.54**	**3.80**	**6.64**	**4.71**	**1.62**	**0.81**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.26	5.57	9.73	6.90	2.38	1.19
Average yield, Yi (bu/acre) (2)			42.35			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.79			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.52**	**3.75**	**6.55**	**4.65**	**1.60**	**0.80**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.21	1.43	7.24	9.14	4.05	1.19
Average yield, Yi (cwt/acre) (2)			20.51			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.65			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**1.21**	**1.43**	**7.24**	**9.14**	**4.05**	**1.19**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.09	2.74	6.69	8.50	7.72	4.09
Average yield, Yi (tons/acre) (2)			22.26			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.66			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**2.09**	**2.74**	**6.69**	**8.50**	**7.72**	**4.09**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.21	2.26	9.40	9.69	7.08	1.98
Average yield, Yi (bu/acre) (2)			129.99			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			115.04			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.21**	**2.26**	**9.40**	**9.69**	**7.08**	**1.98**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.40	5.87	7.25	8.11	3.92	2.38
Average yield, Yi (tons/acre) (2)			4.36			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.21			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month) (5)	**3.40**	**5.87**	**7.25**	**8.11**	**3.92**	**2.38**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.43	4.00	8.51	8.45	4.81	3.52
Average yield, Yi (tons/acre) (2)			1.36			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.70			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.97**	**3.24**	**6.89**	**6.84**	**3.89**	**2.85**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1988 - 1972 = 16					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.46	2.63	5.96	5.97	5.42	3.67
Average yield, Yi (2)			1.36			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.70			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.18**	**2.13**	**4.82**	**4.83**	**4.39**	**2.97**
1982						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.29	5.94	7.03	5.35	--	--
Average yield, Yi (bu/acre) (2)			51.82			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			43.96			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.29**	**5.94**	**7.03**	**5.35**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.87	4.71	7.21	5.97	--	--
Average yield, Yi (bu/acre) (2)			53.26			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			48.86			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.87**	**4.71**	**7.21**	**5.97**	**--**	**--**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.98	5.23	7.29	6.92	2.25	1.08
Average yield, Yi (bu/acre) (2)			56.90			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.71			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.75**	**4.62**	**6.44**	**6.11**	**1.99**	**0.95**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.98	5.23	7.29	6.92	2.25	1.08
Average yield, Yi (bu/acre) (2)			79.09			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.28			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.98**	**5.23**	**7.29**	**6.92**	**2.25**	**1.08**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.06	1.34	5.42	9.17	3.84	1.08
Average yield, Yi (cwt/acre) (2)			17.76			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.89			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.00**	**1.27**	**5.14**	**8.69**	**3.64**	**1.02**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.82	2.57	5.01	8.53	7.32	3.72
Average yield, Yi (tons/acre) (2)			19.95			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.69			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.76**	**2.49**	**4.85**	**8.26**	**7.09**	**3.60**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.06	2.12	7.04	9.71	6.71	1.80
Average yield, Yi (bu/acre) (2)			107.64			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			104.50			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.06**	**2.12**	**7.04**	**9.71**	**6.71**	**1.80**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.97	5.51	5.43	8.13	3.71	2.16
Average yield, Yi (tons/acre) (2)			3.65			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.99			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.73**	**5.06**	**4.99**	**7.47**	**3.41**	**1.98**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.12	3.76	6.37	8.47	4.56	3.21
Average yield, Yi (tons/acre) (2)			1.69			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.54			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**2.12**	**3.76**	**6.37**	**8.47**	**4.56**	**3.21**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1982 - 1972 = 10					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.27	2.47	4.47	5.98	5.13	3.34
Average yield, Yi (2)			1.69			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.54			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.27**	**2.47**	**4.47**	**5.98**	**5.13**	**3.34**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

1987						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.66	6.52	8.26	5.50	--	--
Average yield, Yi (bu/acre) (2)			42.57			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			49.06			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.35**	**5.77**	**7.31**	**4.87**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	2.17	5.17	8.47	6.14	--	--
Average yield, Yi (bu/acre) (2)			35.68			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			54.06			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.53**	**3.64**	**5.97**	**4.32**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.30	5.73	8.57	7.12	2.21	1.30
Average yield, Yi (bu/acre) (2)			53.35			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			69.09			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.84**	**4.59**	**6.87**	**5.71**	**1.77**	**1.04**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.30	5.73	8.57	7.12	2.21	1.30
Average yield, Yi (bu/acre) (2)			81.27			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			67.22			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**2.30**	**5.73**	**8.57**	**7.12**	**2.21**	**1.30**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.23	1.47	6.37	9.43	3.76	1.30
Average yield, Yi (cwt/acre) (2)			19.07			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			19.48			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.21**	**1.44**	**6.25**	**9.26**	**3.69**	**1.28**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.12	2.82	5.89	8.77	7.16	4.47
Average yield, Yi (tons/acre) (2)			21.27			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			21.50			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**2.10**	**2.79**	**5.84**	**8.69**	**7.09**	**4.43**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.23	2.33	8.27	9.99	6.57	2.17
Average yield, Yi (bu/acre) (2)			116.57			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			113.28			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.23**	**2.33**	**8.27**	**9.99**	**6.57**	**2.17**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.46	6.04	6.38	8.36	3.63	2.61
Average yield, Yi (tons/acre) (2)			3.82			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.18			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**3.18**	**5.54**	**5.86**	**7.67**	**3.33**	**2.40**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.47	4.12	7.49	8.71	4.46	3.86
Average yield, Yi (tons/acre) (2)			1.59			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.67			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**2.36**	**3.93**	**7.15**	**8.31**	**4.26**	**3.68**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1987 - 1972 = 15					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.48	2.71	5.25	6.15	5.03	4.01
Average yield, Yi (2)			1.59			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.67			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.41**	**2.59**	**5.01**	**5.87**	**4.80**	**3.83**
1979						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.37	5.82	7.90	5.40	--	--
Average yield, Yi (bu/acre) (2)			36.47			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			41.50			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.12**	**5.21**	**7.07**	**4.83**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.93	4.61	8.11	6.02	--	--
Average yield, Yi (bu/acre) (2)			43.68			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			45.06			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.88**	**4.49**	**7.89**	**5.86**	**--**	**--**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.05	5.12	8.20	6.98	2.04	1.26
Average yield, Yi (bu/acre) (2)			50.21			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.52			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.68**	**4.19**	**6.71**	**5.71**	**1.67**	**1.03**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.05	5.12	8.20	6.98	2.04	1.26
Average yield, Yi (bu/acre) (2)			54.32			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.43			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.82**	**4.54**	**7.27**	**6.19**	**1.81**	**1.12**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.10	1.31	6.09	9.25	3.48	1.26
Average yield, Yi (cwt/acre) (2)			18.88			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.73			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**1.10**	**1.31**	**6.09**	**9.25**	**3.48**	**1.26**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.89	2.52	5.63	8.60	6.63	4.32
Average yield, Yi (tons/acre) (2)			17.79			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.20			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.69**	**2.26**	**5.05**	**7.71**	**5.94**	**3.87**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.10	2.08	7.91	9.80	6.08	2.09
Average yield, Yi (bu/acre) (2)			86.72			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			99.27			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.99**	**1.87**	**7.11**	**8.81**	**5.47**	**1.88**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.08	5.39	6.11	8.20	3.36	2.52
Average yield, Yi (tons/acre) (2)			3.61			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.85			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.90**	**5.07**	**5.75**	**7.71**	**3.16**	**2.37**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.20	3.68	7.17	8.55	4.13	3.72
Average yield, Yi (tons/acre) (2)			1.24			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.47			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.87**	**3.13**	**6.10**	**7.28**	**3.51**	**3.17**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1979 - 1972 = 7					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.32	2.42	5.02	6.04	4.66	3.88
Average yield, Yi (2)			1.24			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.47			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.12**	**2.06**	**4.27**	**5.14**	**3.97**	**3.30**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

1976						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.91	5.42	7.11	5.23	--	--
Average yield, Yi (bu/acre) (2)			33.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			39.50			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.64**	**4.64**	**6.09**	**4.48**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.55	4.29	7.29	5.84	--	--
Average yield, Yi (bu/acre) (2)			38.95			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			40.74			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.49**	**4.13**	**7.01**	**5.62**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.65	4.77	7.37	6.77	2.17	1.10
Average yield, Yi (bu/acre) (2)			56.62			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.22			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.54**	**4.46**	**6.89**	**6.33**	**2.03**	**1.03**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.65	4.77	7.37	6.77	2.17	1.10
Average yield, Yi (bu/acre) (2)			55.89			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			60.54			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.54**	**4.45**	**6.88**	**6.32**	**2.03**	**1.03**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.88	1.22	5.48	8.97	3.69	1.10
Average yield, Yi (cwt/acre) (2)			17.42			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.71			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.83**	**1.15**	**5.15**	**8.43**	**3.47**	**1.03**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.52	2.34	5.07	8.34	7.03	3.77
Average yield, Yi (tons/acre) (2)			20.25			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.72			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.52**	**2.34**	**5.07**	**8.34**	**7.03**	**3.77**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.88	1.94	7.12	9.50	6.45	1.83
Average yield, Yi (bu/acre) (2)			93.27			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			94.07			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.88**	**1.94**	**7.12**	**9.50**	**6.45**	**1.83**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.47	5.02	5.49	7.95	3.57	2.19
Average yield, Yi (tons/acre) (2)			3.45			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.70			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.31**	**4.70**	**5.14**	**7.44**	**3.34**	**2.05**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.77	3.43	6.45	8.28	4.38	3.25
Average yield, Yi (tons/acre) (2)			1.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.39			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.42**	**2.75**	**5.17**	**6.63**	**3.51**	**2.60**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1976 - 1972 = 4					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.06	2.25	4.52	5.85	4.93	3.38
Average yield, Yi (2)			1.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.39			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.85**	**1.80**	**3.62**	**4.69**	**3.95**	**2.71**
	1980					
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.12	5.67	7.80	5.57	--	--
Average yield, Yi (bu/acre) (2)			44.92			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			42.27			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.12**	**5.67**	**7.80**	**5.57**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.73	4.50	8.00	6.21	--	--
Average yield, Yi (bu/acre) (2)			32.42			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			46.38			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.28**	**3.32**	**5.91**	**4.58**	**--**	**--**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.84	4.99	8.09	7.21	2.27	1.21
Average yield, Yi (bu/acre) (2)			52.69			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			64.27			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.55**	**4.21**	**6.82**	**6.08**	**1.91**	**1.02**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.84	4.99	8.09	7.21	2.27	1.21
Average yield, Yi (bu/acre) (2)			61.65			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.05			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.80**	**4.89**	**7.93**	**7.07**	**2.23**	**1.19**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.98	1.28	6.01	9.55	3.87	1.21
Average yield, Yi (cwt/acre) (2)			21.49			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.76			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**0.98**	**1.28**	**6.01**	**9.55**	**3.87**	**1.21**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.69	2.45	5.56	8.88	7.38	4.15
Average yield, Yi (tons/acre) (2)			21.46			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.36			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.69**	**2.45**	**5.56**	**8.88**	**7.38**	**4.15**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.98	2.03	7.81	10.11	6.77	2.01
Average yield, Yi (bu/acre) (2)			101.24			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			101.01			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.98**	**2.03**	**7.81**	**10.11**	**6.77**	**2.01**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.75	5.26	6.03	8.47	3.74	2.41
Average yield, Yi (tons/acre) (2)			3.45			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.90			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.45**	**4.68**	**5.37**	**7.54**	**3.33**	**2.15**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.97	3.59	7.07	8.82	4.60	3.58
Average yield, Yi (tons/acre) (2)			1.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.49			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.48**	**2.70**	**5.31**	**6.62**	**3.45**	**2.69**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1980 - 1972 = 8					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.18	2.36	4.96	6.23	5.18	3.72
Average yield, Yi (2)			1.10			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.49			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.89**	**1.77**	**3.72**	**4.68**	**3.89**	**2.79**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

1977						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.11	5.97	8.02	5.02	--	--
Average yield, Yi (bu/acre) (2)			23.63			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			40.12			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.36**	**3.84**	**5.15**	**3.23**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.72	4.73	8.22	5.60	0.00	--
Average yield, Yi (bu/acre) (2)			37.74			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			42.24			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.56**	**4.29**	**7.46**	**5.08**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.83	5.26	8.32	6.49	2.27	1.28
Average yield, Yi (bu/acre) (2)			42.95			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.00			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.34**	**3.85**	**6.10**	**4.76**	**1.66**	**0.94**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.83	5.26	8.32	6.49	2.27	1.28
Average yield, Yi (bu/acre) (2)			41.90			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.17			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.33**	**3.82**	**6.04**	**4.71**	**1.65**	**0.93**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.98	1.35	6.18	8.60	3.87	1.28
Average yield, Yi (cwt/acre) (2)			17.84			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.70			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.94**	**1.30**	**5.93**	**8.26**	**3.72**	**1.23**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.68	2.58	5.72	8.00	7.37	4.41
Average yield, Yi (tons/acre) (2)			19.57			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.88			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.66**	**2.55**	**5.64**	**7.89**	**7.27**	**4.35**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.98	2.14	8.03	9.11	6.76	2.14
Average yield, Yi (bu/acre) (2)			94.21			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			95.80			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.97**	**2.11**	**7.92**	**8.99**	**6.67**	**2.11**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.74	5.54	6.20	7.63	3.74	2.57
Average yield, Yi (tons/acre) (2)			3.35			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.75			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.46**	**4.98**	**5.57**	**6.85**	**3.36**	**2.31**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.96	3.78	7.27	7.95	4.59	3.81
Average yield, Yi (tons/acre) (2)			1.04			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.41			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.47**	**2.84**	**5.45**	**5.96**	**3.44**	**2.86**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1977 - 1972 = 5					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.17	2.48	5.10	5.61	5.17	3.96
Average yield, Yi (2)			1.04			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.41			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.88**	**1.86**	**3.83**	**4.21**	**3.88**	**2.97**
	1978					
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.20	5.45	8.18	5.47	--	--
Average yield, Yi (bu/acre) (2)			41.81			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			40.78			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.20**	**5.45**	**8.18**	**5.47**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.79	4.32	8.39	6.11	--	--
Average yield, Yi (bu/acre) (2)			33.79			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			43.67			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.44**	**3.47**	**6.74**	**4.91**	**--**	**--**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.90	4.80	8.48	7.08	2.26	1.28
Average yield, Yi (bu/acre) (2)			61.79			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			62.77			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.87**	**4.73**	**8.36**	**6.98**	**2.23**	**1.26**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.90	4.80	8.48	7.08	2.26	1.28
Average yield, Yi (bu/acre) (2)			76.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			61.81			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.90**	**4.80**	**8.48**	**7.08**	**2.26**	**1.28**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.02	1.23	6.31	9.38	3.85	1.28
Average yield, Yi (cwt/acre) (2)			15.87			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.70			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.89**	**1.07**	**5.48**	**8.15**	**3.34**	**1.11**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.75	2.36	5.83	8.72	7.34	4.40
Average yield, Yi (tons/acre) (2)			17.77			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.04			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.58**	**2.13**	**5.26**	**7.86**	**6.62**	**3.97**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.02	1.95	8.19	9.94	6.73	2.14
Average yield, Yi (bu/acre) (2)			84.57			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			97.54			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.91**	**1.74**	**7.32**	**8.88**	**6.01**	**1.91**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.85	5.05	6.32	8.32	3.72	2.57
Average yield, Yi (tons/acre) (2)			3.64			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.80			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.74**	**4.85**	**6.07**	**7.99**	**3.57**	**2.47**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.04	3.45	7.42	8.67	4.57	3.80
Average yield, Yi (tons/acre) (2)			1.45			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.44			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**2.04**	**3.45**	**7.42**	**8.67**	**4.57**	**3.80**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1978 - 1972 = 6					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.22	2.26	5.20	6.12	5.15	3.95
Average yield, Yi (2)			1.45			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.44			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.22**	**2.26**	**5.20**	**6.12**	**5.15**	**3.95**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

1981						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.61	5.67	8.26	5.20	--	--
Average yield, Yi (bu/acre) (2)			40.88			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			43.09			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.49**	**5.42**	**7.89**	**4.97**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	2.13	4.50	8.47	5.81	--	--
Average yield, Yi (bu/acre) (2)			34.42			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			47.65			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.62**	**3.41**	**6.43**	**4.41**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.26	4.99	8.57	6.73	2.25	1.22
Average yield, Yi (bu/acre) (2)			46.55			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			65.00			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.70**	**3.76**	**6.45**	**5.07**	**1.69**	**0.92**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.26	4.99	8.57	6.73	2.25	1.22
Average yield, Yi (bu/acre) (2)			65.92			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			63.67			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**2.26**	**4.99**	**8.57**	**6.73**	**2.25**	**1.22**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.21	1.28	6.37	8.92	3.83	1.22
Average yield, Yi (cwt/acre) (2)			21.74			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.82			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**1.21**	**1.28**	**6.37**	**8.92**	**3.83**	**1.22**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	2.08	2.45	5.89	8.29	7.29	4.21
Average yield, Yi (tons/acre) (2)			30.49			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			20.52			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**2.08**	**2.45**	**5.89**	**8.29**	**7.29**	**4.21**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.21	2.03	8.27	9.45	6.69	2.04
Average yield, Yi (bu/acre) (2)			108.59			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			102.76			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.21**	**2.03**	**8.27**	**9.45**	**6.69**	**2.04**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.39	5.26	6.38	7.91	3.70	2.45
Average yield, Yi (tons/acre) (2)			4.06			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.94			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month) (5)	**3.39**	**5.26**	**6.38**	**7.91**	**3.70**	**2.45**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.42	3.59	7.49	8.24	4.54	3.63
Average yield, Yi (tons/acre) (2)			1.44			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.52			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**2.30**	**3.41**	**7.11**	**7.83**	**4.31**	**3.45**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1981 - 1972 = 9					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.45	2.36	5.25	5.82	5.12	3.78
Average yield, Yi (2)			1.44			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.52			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.38**	**2.24**	**4.99**	**5.53**	**4.86**	**3.59**
	1975					
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.00	5.57	7.73	5.61	--	--
Average yield, Yi (bu/acre) (2)			38.80			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			38.93			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.99**	**5.55**	**7.71**	**5.59**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.63	4.42	7.93	6.26	--	--
Average yield, Yi (bu/acre) (2)			40.53			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			39.19			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.63**	**4.42**	**7.93**	**6.26**	**--**	**--**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.73	4.90	8.02	7.26	2.42	1.10
Average yield, Yi (bu/acre) (2)			62.10			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			60.42			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.73**	**4.90**	**8.02**	**7.26**	**2.42**	**1.10**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.73	4.90	8.02	7.26	2.42	1.10
Average yield, Yi (bu/acre) (2)			46.63			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			59.89			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.40**	**3.96**	**6.48**	**5.86**	**1.95**	**0.89**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.93	1.26	5.96	9.62	4.13	1.10
Average yield, Yi (cwt/acre) (2)			17.00			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			18.74			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.85**	**1.16**	**5.48**	**8.84**	**3.80**	**1.01**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.60	2.41	5.51	8.94	7.87	3.79
Average yield, Yi (tons/acre) (2)			19.24			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			19.56			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.58**	**2.38**	**5.43**	**8.81**	**7.76**	**3.74**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.93	1.99	7.74	10.19	7.21	1.84
Average yield, Yi (bu/acre) (2)			81.07			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			92.34			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.84**	**1.80**	**6.98**	**9.20**	**6.51**	**1.66**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.60	5.17	5.97	8.53	3.99	2.21
Average yield, Yi (tons/acre) (2)			3.38			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			3.64			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.42**	**4.82**	**5.56**	**7.95**	**3.72**	**2.06**
Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.86	3.52	7.01	8.89	4.90	3.27
Average yield, Yi (tons/acre) (2)			1.40			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.36			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.86**	**3.52**	**7.01**	**8.89**	**4.90**	**3.27**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1975 - 1972 = 3					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.11	2.31	4.91	6.28	5.52	3.40
Average yield, Yi (2)			1.40			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.36			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.11**	**2.31**	**4.91**	**6.28**	**5.52**	**3.40**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

1991						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation: y = 0.0251x2 + 0.3929x + 37.523 (see Figure 2.1.4.51) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.19	6.38	7.69	5.12	--	--
Average yield, Yi (bu/acre) (2)			54.74			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			54.05			
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.19**	**6.38**	**7.69**	**5.12**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation: y = - 0.0285x2 + 1.7522x + 34.187 (see Figure 2.1.4.49) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.78	5.06	7.89	5.71	--	--
Average yield, Yi (bu/acre) (2)			50.52			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			57.19			
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.60**	**4.55**	**7.09**	**5.13**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation: y = - 0.0066x2 + 0.841x + 57.961 (see Figure 2.1.4.44) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.89	5.62	7.98	6.63	2.29	1.14
Average yield, Yi (bu/acre) (2)			71.34			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			71.56			
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.88**	**5.60**	**7.96**	**6.61**	**2.28**	**1.14**
Oats	Derived Yenv(OATS) polynomial equation: y = - 0.0031x2 + 0.6666x + 57.919 (see Figure 2.1.4.47) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.89	5.62	7.98	6.63	2.29	1.14
Average yield, Yi (bu/acre) (2)			67.11			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (bu/acre) (2)			69.47			
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.83**	**5.45**	**7.74**	**6.43**	**2.22**	**1.11**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation: y = 0.0082x2 - 0.0861x + 18.926 (see Figure 2.1.4.46) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.01	1.44	5.93	8.78	3.89	1.14
Average yield, Yi (cwt/acre) (2)			19.43			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (cwt/acre) (2)			20.25			
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.97**	**1.39**	**5.72**	**8.47**	**3.75**	**1.10**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation: y = 0.0002x2 + 0.1579x + 19.086 (see Figure 2.1.4.50) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.74	2.76	5.49	8.16	7.43	3.92
Average yield, Yi (tons/acre) (2)			19.24			
Crop response function, ky (no units) (3)			1.15			
"Fully watered" yield, Y_{env} (tons/acre) (2)			22.16			
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.54**	**2.44**	**4.86**	**7.23**	**6.58**	**3.47**
Corn	Derived Yenv(CORN) polynomial equation: y = 0.0015x2 + 1.7179x + 87.174 (see Figure 2.1.4.45) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.01	2.28	7.71	9.30	6.81	1.90
Average yield, Yi (bu/acre) (2)			122.43			
Crop response function, ky (no units) (3)			1.25			
"Fully watered" yield, Y_{env} (bu/acre) (2)			120.36			
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.01**	**2.28**	**7.71**	**9.30**	**6.81**	**1.90**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation: y = - 0.0009x2 + 0.0609x + 3.466 (see Figure 2.1.4.43) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.84	5.92	5.95	7.78	3.77	2.28
Average yield, Yi (tons/acre) (2)			3.97			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			4.30			
Adjusted maximum evapotranspiration, $ET_{ALFALFA(HIGH)}$ (inches per month)	**2.63**	**5.49**	**5.52**	**7.21**	**3.49**	**2.11**

Table 2.1.4.82 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - Horse Creek subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.03	4.04	6.98	8.11	4.62	3.38
Average yield, Yi (tons/acre) (2)			1.44			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (tons/acre) (2)			1.77			
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.67**	**3.32**	**5.74**	**6.67**	**3.80**	**2.78**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation: y = - 0.0001x2 + 0.0279x + 1.2754 (see Figure 2.1.4.48) x = 1991 - 1972 = 19					
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.22	2.65	4.89	5.73	5.21	3.52
Average yield, Yi (2)			1.44			
Crop response function, ky (no units) (3)			1.05			
"Fully watered" yield, Y_{env} (2)			1.77			
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.00**	**2.18**	**4.02**	**4.71**	**4.28**	**2.89**

Notes:

(1) See Table 2.1.4.45.

(2) See Table 2.1.4.54. for area-weighted annual yields

(3) See Table 2.1.4.53.

(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for

(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$

A summary of adjusted, yield-based crop evapotranspiration values during high, low, and normal or average stream flow years–derivation of which is shown in Table 2.1.4.80, 2.1.4.81, and 2.1.4.82–is included in Table 2.1.4.83.

Table 2.1.4.83 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Horse Creek subbasin

High stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1986	winter wheat	2.20	6.06	8.56	5.36	--	--	**22.18**
	spring wheat	1.80	4.80	8.78	5.98	--	--	**21.36**
	barley	1.91	5.33	8.88	6.94	2.28	1.02	**26.36**
	oats	1.88	5.25	8.75	6.84	2.25	1.01	**25.98**
	dry beans	0.98	1.32	6.34	8.83	3.73	0.98	**22.18**
	sugar beets	1.75	2.62	6.10	8.55	7.40	3.52	**29.94**
	corn	1.02	2.17	8.57	9.74	6.79	1.71	**30.00**
	alfalfa	2.86	5.62	6.61	8.15	3.76	2.05	**29.05**
	other hay	2.04	3.83	7.76	8.49	4.61	3.03	**29.76**
	irrigated pasture	1.22	2.52	5.44	6.00	5.20	3.16	**23.54**
1984	winter wheat	1.76	6.64	7.91	5.24	--	--	**21.55**
	spring wheat	1.43	5.26	8.12	5.85	--	--	**20.66**
	barley	1.52	5.84	8.21	6.79	2.28	1.06	**25.70**
	oats	1.35	5.18	7.29	6.03	2.02	0.94	**22.81**
	dry beans	0.82	1.50	6.10	8.99	3.89	1.06	**22.36**
	sugar beets	1.27	2.61	5.13	7.61	6.74	3.32	**26.68**
	corn	0.79	2.29	7.67	9.21	6.58	1.71	**28.25**
	alfalfa	2.20	5.91	5.88	7.65	3.61	2.04	**27.29**
	other hay	1.63	4.20	7.18	8.31	4.62	3.15	**29.09**
	irrigated pasture	0.98	2.76	5.03	5.87	5.20	3.27	**23.11**
1985	winter wheat	1.98	5.32	6.32	4.17	--	--	**17.79**
	spring wheat	1.68	4.39	6.75	4.85	--	--	**17.67**
	barley	2.20	6.01	8.41	6.93	2.34	1.05	**26.94**
	oats	2.02	5.51	7.72	6.36	2.15	0.96	**24.72**
	dry beans	1.17	1.52	6.18	9.08	3.95	1.04	**22.94**
	sugar beets	2.03	2.95	5.78	8.54	7.60	3.59	**30.49**
	corn	1.09	2.24	7.47	8.94	6.41	1.60	**27.75**
	alfalfa	2.55	4.89	4.85	6.29	2.98	1.62	**23.18**
	other hay	2.12	3.89	6.62	7.63	4.26	2.79	**27.31**
	irrigated pasture	1.27	2.56	4.64	5.39	4.80	2.91	**21.57**
1973	winter wheat	1.78	5.92	8.17	4.96	--	--	**20.83**
	spring wheat	1.37	4.42	7.89	5.22	--	--	**18.90**
	barley	1.51	5.11	8.30	6.29	2.34	0.95	**24.50**
	oats	1.54	5.21	8.47	6.42	2.39	0.97	**25.00**
	dry beans	0.79	1.29	6.10	8.24	3.94	0.94	**21.30**
	sugar beets	1.31	2.38	5.41	7.35	7.21	3.11	**26.77**
	corn	0.82	2.12	8.18	9.01	7.11	1.62	**28.86**
	alfalfa	2.24	5.32	6.12	7.32	3.81	1.89	**26.70**
	other hay	1.55	3.52	6.98	7.40	4.55	2.72	**26.72**
	irrigated pasture	0.93	2.32	4.89	5.22	5.12	2.82	**21.30**

Table 2.1.4.83 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Horse Creek subbasin (cont)

Low stream flow years								
		"Yield adjusted" evapotranspiration, ETC (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1972	winter wheat	2.10	5.97	7.92	4.97	--	--	**20.96**
	spring wheat	1.71	4.73	8.13	5.55	--	--	**20.12**
	barley	1.82	5.26	8.22	6.44	2.17	1.17	**25.08**
	oats	1.82	5.26	8.22	6.44	2.17	1.17	**25.08**
	dry beans	0.97	1.35	6.11	8.53	3.69	1.17	**21.82**
	sugar beets	1.67	2.58	5.65	7.93	7.03	4.02	**28.88**
	corn	0.97	2.14	7.94	9.03	6.45	1.95	**28.48**
	alfalfa	2.56	5.19	5.74	7.08	3.34	2.19	**26.10**
	other hay	1.92	3.72	7.08	7.76	4.31	3.42	**28.21**
	irrigated pasture	1.15	2.44	4.97	5.49	4.86	3.56	**22.47**
1989	winter wheat	2.14	5.75	6.77	4.80	--	--	**19.46**
	spring wheat	1.68	4.39	6.69	5.16	--	--	**17.92**
	barley	1.87	5.11	7.09	6.28	1.91	1.02	**23.28**
	oats	1.64	4.48	6.21	5.51	1.67	0.89	**20.40**
	dry beans	1.12	1.47	5.91	9.31	3.65	1.14	**22.60**
	sugar beets	1.76	2.56	4.96	7.87	6.31	3.56	**27.02**
	corn	0.99	2.06	6.79	8.72	5.64	1.68	**25.88**
	alfalfa	3.17	6.07	5.96	8.30	3.55	2.30	**29.35**
	other hay	1.81	3.32	5.61	6.94	3.49	2.74	**23.91**
	irrigated pasture	1.09	2.18	3.93	4.91	3.94	2.84	**18.89**
1990	winter wheat	2.21	5.55	8.18	4.60	--	--	**20.54**
	spring wheat	1.67	4.06	7.75	4.75	--	--	**18.23**
	barley	1.80	4.60	8.00	5.62	2.04	1.13	**23.19**
	oats	1.65	4.21	7.32	5.15	1.87	1.03	**21.23**
	dry beans	1.06	1.30	6.54	8.19	3.82	1.24	**22.15**
	sugar beets	1.64	2.24	5.43	6.84	6.54	3.82	**26.51**
	corn	1.06	2.06	8.49	8.67	6.68	2.06	**29.02**
	alfalfa	2.85	5.12	6.29	6.97	3.54	2.37	**27.14**
	other hay	1.89	3.24	6.85	6.74	4.04	3.27	**26.03**
	irrigated pasture	1.13	2.13	4.80	4.76	4.55	3.40	**20.77**
1992	winter wheat	2.37	6.18	6.87	4.32	--	--	**19.74**
	spring wheat	1.83	4.63	6.67	4.56	--	--	**17.69**
	barley	2.29	6.08	7.95	6.24	2.07	1.24	**25.87**
	oats	2.32	6.16	8.06	6.32	2.10	1.26	**26.22**
	dry beans	1.12	1.42	5.40	7.55	3.22	1.13	**19.84**
	sugar beets	1.70	2.40	4.41	6.20	5.42	3.46	**23.59**
	corn	1.08	2.17	6.76	7.69	5.42	1.83	**24.95**
	alfalfa	3.07	5.72	5.31	6.56	3.05	2.23	**25.94**
	other hay	1.95	3.46	5.51	6.05	3.32	2.93	**23.22**
	irrigated pasture	1.16	2.27	3.86	4.28	3.74	3.05	**18.36**

Table 2.1.4.83 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Horse Creek subbasin (cont)

Normal or average stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1974	winter wheat	2.03	6.38	8.23	5.46	--	--	**22.10**
	spring wheat	1.60	4.89	8.15	5.89	--	--	**20.53**
	barley	1.79	5.75	8.76	7.24	2.18	1.08	**26.80**
	oats	1.60	5.12	7.79	6.44	1.94	0.96	**23.85**
	dry beans	0.97	1.49	6.57	9.69	3.74	1.09	**23.55**
	sugar beets	1.56	2.67	5.67	8.41	6.66	3.50	**28.47**
	corn	0.91	2.22	8.05	9.67	6.17	1.71	**28.73**
	alfalfa	2.72	6.12	6.59	8.59	3.62	2.18	**29.82**
	other hay	1.81	3.91	7.23	8.37	4.16	3.03	**28.51**
	irrigated pasture	1.09	2.56	5.07	5.91	4.69	3.15	**22.47**
1983	winter wheat	1.84	5.65	7.00	5.40	--	--	**19.89**
	spring wheat	1.50	4.48	7.19	6.02	--	--	**19.19**
	barley	1.59	4.97	7.27	6.98	2.36	1.25	**24.42**
	oats	1.50	4.70	6.88	6.60	2.23	1.18	**23.09**
	dry beans	0.83	1.23	5.25	8.99	3.91	1.22	**21.43**
	sugar beets	1.13	1.88	3.83	6.61	5.89	3.29	**22.63**
	corn	0.85	2.02	7.02	9.80	7.03	2.08	**28.80**
	alfalfa	2.39	5.24	5.41	8.20	3.89	2.49	**27.62**
	other hay	1.62	3.38	6.00	8.08	4.51	3.50	**27.09**
	irrigated pasture	0.96	2.22	4.21	5.71	5.09	3.63	**21.82**
1988	winter wheat	2.62	6.33	9.38	5.33	--	--	**23.66**
	spring wheat	2.11	4.98	9.54	5.90	--	--	**22.53**
	barley	1.54	3.80	6.64	4.71	1.62	0.81	**19.12**
	oats	1.52	3.75	6.55	4.65	1.60	0.80	**18.87**
	dry beans	1.21	1.43	7.24	9.14	4.05	1.19	**24.26**
	sugar beets	2.09	2.74	6.69	8.50	7.72	4.09	**31.83**
	corn	1.21	2.26	9.40	9.69	7.08	1.98	**31.62**
	alfalfa	3.40	5.87	7.25	8.11	3.92	2.38	**30.93**
	other hay	1.97	3.24	6.89	6.84	3.89	2.85	**25.68**
	irrigated pasture	1.18	2.13	4.82	4.83	4.39	2.97	**20.32**
1982	winter wheat	2.29	5.94	7.03	5.35	--	--	**20.61**
	spring wheat	1.87	4.71	7.21	5.97	--	--	**19.76**
	barley	1.75	4.62	6.44	6.11	1.99	0.95	**21.86**
	oats	1.98	5.23	7.29	6.92	2.25	1.08	**24.75**
	dry beans	1.00	1.27	5.14	8.69	3.64	1.02	**20.76**
	sugar beets	1.76	2.49	4.85	8.26	7.09	3.60	**28.05**
	corn	1.06	2.12	7.04	9.71	6.71	1.80	**28.44**
	alfalfa	2.73	5.06	4.99	7.47	3.41	1.98	**25.64**
	other hay	2.12	3.76	6.37	8.47	4.56	3.21	**28.49**
	irrigated pasture	1.27	2.47	4.47	5.98	5.13	3.34	**22.66**

Table 2.1.4.83 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Horse Creek subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1987	winter wheat	2.35	5.77	7.31	4.87	--	--	**20.30**
	spring wheat	1.53	3.64	5.97	4.32	--	--	**15.46**
	barley	1.84	4.59	6.87	5.71	1.77	1.04	**21.82**
	oats	2.30	5.73	8.57	7.12	2.21	1.30	**27.23**
	dry beans	1.21	1.44	6.25	9.26	3.69	1.28	**23.13**
	sugar beets	2.10	2.79	5.84	8.69	7.09	4.43	**30.94**
	corn	1.23	2.33	8.27	9.99	6.57	2.17	**30.56**
	alfalfa	3.18	5.54	5.86	7.67	3.33	2.40	**27.98**
	other hay	2.36	3.93	7.15	8.31	4.26	3.68	**29.69**
	irrigated pasture	1.41	2.59	5.01	5.87	4.80	3.83	**23.51**
1979	winter wheat	2.12	5.21	7.07	4.83	--	--	**19.23**
	spring wheat	1.88	4.49	7.89	5.86	--	--	**20.12**
	barley	1.68	4.19	6.71	5.71	1.67	1.03	**20.99**
	oats	1.82	4.54	7.27	6.19	1.81	1.12	**22.75**
	dry beans	1.10	1.31	6.09	9.25	3.48	1.26	**22.49**
	sugar beets	1.69	2.26	5.05	7.71	5.94	3.87	**26.52**
	corn	0.99	1.87	7.11	8.81	5.47	1.88	**26.13**
	alfalfa	2.90	5.07	5.75	7.71	3.16	2.37	**26.96**
	other hay	1.87	3.13	6.10	7.28	3.51	3.17	**25.06**
	irrigated pasture	1.12	2.06	4.27	5.14	3.97	3.30	**19.86**
1976	winter wheat	1.64	4.64	6.09	4.48	--	--	**16.85**
	spring wheat	1.49	4.13	7.01	5.62	--	--	**18.25**
	barley	1.54	4.46	6.89	6.33	2.03	1.03	**22.28**
	oats	1.54	4.45	6.88	6.32	2.03	1.03	**22.25**
	dry beans	0.83	1.15	5.15	8.43	3.47	1.03	**20.06**
	sugar beets	1.52	2.34	5.07	8.34	7.03	3.77	**28.07**
	corn	0.88	1.94	7.12	9.50	6.45	1.83	**27.72**
	alfalfa	2.31	4.70	5.14	7.44	3.34	2.05	**24.98**
	other hay	2.31	4.70	5.14	7.44	3.34	2.05	**24.98**
	irrigated pasture	0.85	1.80	3.62	4.69	3.95	2.71	**17.62**
1980	winter wheat	2.12	5.67	7.80	5.57	--	--	**21.16**
	spring wheat	1.28	3.32	5.91	4.58	--	--	**15.09**
	barley	1.55	4.21	6.82	6.08	1.91	1.02	**21.59**
	oats	1.80	4.89	7.93	7.07	2.23	1.19	**25.11**
	dry beans	0.98	1.28	6.01	9.55	3.87	1.21	**22.90**
	sugar beets	1.69	2.45	5.56	8.88	7.38	4.15	**30.11**
	corn	0.98	2.03	7.81	10.11	6.77	2.01	**29.71**
	alfalfa	2.45	4.68	5.37	7.54	3.33	2.15	**25.52**
	other hay	1.48	2.70	5.31	6.62	3.45	2.69	**22.25**
	irrigated pasture	0.89	1.77	3.72	4.68	3.89	2.79	**17.74**

Table 2.1.4.83 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Horse Creek subbasin (cont)

		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	**Crop**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
1977	winter wheat	1.36	3.84	5.15	3.23	--	--	**13.58**
	spring wheat	1.56	4.29	7.46	5.08	--	--	**18.39**
	barley	1.34	3.85	6.10	4.76	1.66	0.94	**18.65**
	oats	1.33	3.82	6.04	4.71	1.65	0.93	**18.48**
	dry beans	0.94	1.30	5.93	8.26	3.72	1.23	**21.38**
	sugar beets	1.66	2.55	5.64	7.89	7.27	4.35	**29.36**
	corn	0.97	2.11	7.92	8.99	6.67	2.11	**28.77**
	alfalfa	2.46	4.98	5.57	6.85	3.36	2.31	**25.53**
	other hay	1.47	2.84	5.45	5.96	3.44	2.86	**22.02**
	irrigated pasture	0.88	1.86	3.83	4.21	3.88	2.97	**17.63**
1978	winter wheat	2.20	5.45	8.18	5.47	--	--	**21.30**
	spring wheat	1.44	3.47	6.74	4.91	--	--	**16.56**
	barley	1.87	4.73	8.36	6.98	2.23	1.26	**25.43**
	oats	1.90	4.80	8.48	7.08	2.26	1.28	**25.80**
	dry beans	0.89	1.07	5.48	8.15	3.34	1.11	**20.04**
	sugar beets	1.58	2.13	5.26	7.86	6.62	3.97	**27.42**
	corn	0.91	1.74	7.32	8.88	6.01	1.91	**26.77**
	alfalfa	2.74	4.85	6.07	7.99	3.57	2.47	**27.69**
	other hay	2.04	3.45	7.42	8.67	4.57	3.80	**29.95**
	irrigated pasture	1.22	2.26	5.20	6.12	5.15	3.95	**23.90**
1981	winter wheat	2.49	5.42	7.89	4.97	--	--	**20.77**
	spring wheat	1.62	3.41	6.43	4.41	--	--	**15.87**
	barley	1.70	3.76	6.45	5.07	1.69	0.92	**19.59**
	oats	2.26	4.99	8.57	6.73	2.25	1.22	**26.02**
	dry beans	1.21	1.28	6.37	8.92	3.83	1.22	**22.83**
	sugar beets	2.08	2.45	5.89	8.29	7.29	4.21	**30.21**
	corn	1.21	2.03	8.27	9.45	6.69	2.04	**29.69**
	alfalfa	3.39	5.26	6.38	7.91	3.70	2.45	**29.09**
	other hay	2.30	3.41	7.11	7.83	4.31	3.45	**28.41**
	irrigated pasture	1.38	2.24	4.99	5.53	4.86	3.59	**22.59**
1975	winter wheat	1.99	5.55	7.71	5.59	--	--	**20.84**
	spring wheat	1.63	4.42	7.93	6.26	--	--	**20.24**
	barley	1.73	4.90	8.02	7.26	2.42	1.10	**25.43**
	oats	1.40	3.96	6.48	5.86	1.95	0.89	**20.54**
	dry beans	0.85	1.16	5.48	8.84	3.80	1.01	**21.14**
	sugar beets	1.58	2.38	5.43	8.81	7.76	3.74	**29.70**
	corn	0.84	1.80	6.98	9.20	6.51	1.66	**26.99**
	alfalfa	2.42	4.82	5.56	7.95	3.72	2.06	**26.53**
	other hay	1.86	3.52	7.01	8.89	4.90	3.27	**29.45**
	irrigated pasture	1.86	3.52	7.01	8.89	4.90	3.27	**29.45**

Table 2.1.4.83 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - Horse Creek subbasin (cont)

Year	Crop	"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
		Apr	May	Jun	Jul	Aug	Sep	Total
1991	winter wheat	2.19	6.38	7.69	5.12	--	--	**21.38**
	spring wheat	1.60	4.55	7.09	5.13	--	--	**18.37**
	barley	1.88	5.60	7.96	6.61	2.28	1.14	**25.47**
	oats	1.83	5.45	7.74	6.43	2.22	1.11	**24.78**
	dry beans	0.97	1.39	5.72	8.47	3.75	1.10	**21.40**
	sugar beets	1.54	2.44	4.86	7.23	6.58	3.47	**26.12**
	corn	1.01	2.28	7.71	9.30	6.81	1.90	**29.01**
	alfalfa	2.63	5.49	5.52	7.21	3.49	2.11	**26.45**
	other hay	1.67	3.32	5.74	6.67	3.80	2.78	**23.98**
	irrigated pasture	1.00	2.18	4.02	4.71	4.28	2.89	**19.08**

Notes:
(1) See Tables 2.1.4.80, 2.1.4.81., and 2.1.4.82.

2.1.4.7.10 Adjusted Crop Evapotranspiration, ET_c – South Platte Subbasin

Annual crop yields and derived area-weighted annual crop yields for each crop during the 1972 through 2001 study period in the South Platte subbasin are shown in Table 2.1.4.84. As shown on this table, almost all of the South Platte subbasin lies within Laramie County with a very small portion of the subbasin lying within Albany County. These two counties and the portions of the South Platte subbasin that they comprise are shown at the top of Table 2.1.4.84. The assumptions, based on tabulated NASS yield data, underlying derivation of the area-weighted yield for each crop are included near the tops of tabulations of crop yields. All crops under consideration were considered to have been irrigated and harvested in the South Platte subbasin during the entire 1972 through 2001 study period. This table also shows years and yields that were graphed to derive polynomial equations for determining $Y_{env(C)}$ values for each crop in the subbasin. Area-weighted annual yield values during the study period for each crop, Y_{env} polynomial trend lines, and resultant Y_{env} polynomial equations are graphed in Figures 2.1.4.52 through 2.1.4.60.

Table 2.1.4.84 Area-weighted crop yields - South Platte subbasin

			Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette		
Portion of total South Platte subbasin irrigated agricultural land in each county with counties in this subbasin shaded (decimal) (1)			0.0100	0.0000	0.0000	0.0000	0.0000	0.9900	0.0000	0.0000	0.0000	0.0000		
Crop: alfalfa														
Units: tons per acre														
Assumption: alfalfa production ongoing through entire 1972 - 2001 period in both counties located partially or entirely within the subbasin; estimated yield values (in shaded cells) as required for Albany County														
National Agricultural Statistics Service (NASS) crop yield data			**County:**											**South Platte subbasin - area-weighted yield**
Year	**Crop**	**Unit**	**Albany**	**Carbon**	**Converse**	**Fremont**	**Goshen**	**Laramie**	**Natrona**	**Niobrara**	**Platte**	**Sublette**		
1972	Alfalfa	ton/acre	2.20	1.90	2.03	2.66	3.30	3.00	2.42	2.80	3.30	1.80		2.99
1973	Alfalfa	ton/acre	2.27	1.90	2.30	2.80	3.50	3.10	2.46	2.80	3.17	1.90		3.09
1974	Alfalfa	ton/acre	2.20	1.90	2.20	2.91	3.65	3.60	2.21	2.71	2.80	1.70		3.59
1975	Alfalfa	ton/acre	2.00	2.06	2.30	3.11	3.53	2.80	2.50	2.31	2.85	1.70		2.79
1976	Alfalfa	ton/acre	2.11	1.50	2.40	3.50	3.70	2.51	2.57	2.12	2.60	1.60		2.51
1977	Alfalfa	ton/acre	1.90	1.60	1.90	2.89	3.50	2.80	2.10	1.80	2.30	1.30		2.79
1978	Alfalfa	ton/acre	2.60	1.60	2.10	3.32	3.94	2.50	2.19	2.40	2.40	1.60		2.50
1979	Alfalfa	ton/acre	2.50	2.00	2.20	3.80	3.80	2.90	2.24	2.60	3.30	1.70		2.90
1980	Alfalfa	ton/acre	2.30	2.10	2.00	3.00	3.60	2.90	2.60	2.30	2.84	1.20		2.89
1981	Alfalfa	ton/acre	2.60	2.20	2.20	3.40	4.40	2.80	2.60	2.90	2.90	1.50		2.80
1982	Alfalfa	ton/acre	2.54	2.47	2.03	2.90	3.73	3.35	3.54	2.55	2.50	1.44		3.34
1983	Alfalfa	ton/acre	2.32	2.67	2.24	3.20	4.70	3.50	2.90	2.85	2.87	1.20		3.49
1984	Alfalfa	ton/acre	2.40	2.20	2.00	3.20	4.03	3.40	2.30	3.00	3.10	1.80		3.39
1985	Alfalfa	ton/acre	1.13	2.29	1.64	2.90	3.10	3.23	1.21	2.60	2.81	1.55		3.21
1986	Alfalfa	ton/acre	2.10	1.71	2.24	3.51	4.29	3.90	2.27	3.46	3.22	1.54		3.88
1987	Alfalfa	ton/acre	2.00	1.64	2.00	3.45	4.00	3.13	2.04	2.15	2.78	1.29		3.12
1988	Alfalfa	ton/acre	2.20	2.12	1.65	3.24	4.54	3.67	1.93	2.53	2.63	1.33		3.66
1989	Alfalfa	ton/acre	1.93	2.24	1.83	3.14	4.14	4.44	2.18	1.96	3.00	1.38		4.41
1990	Alfalfa	ton/acre	1.94	1.65	2.36	3.40	4.25	3.50	2.25	2.00	2.97	1.62		3.48
1991	Alfalfa	ton/acre	1.71	2.10	2.40	3.49	4.09	3.50	2.30	2.60	3.90	1.40		3.48
1992	Alfalfa	ton/acre	1.80	2.10	2.00	3.10	3.81	3.70	2.50	2.30	2.80	1.30		3.68
1993	Alfalfa	ton/acre	2.30	2.10	2.70	3.42	4.50	3.60	2.80	3.40	3.50	1.40		3.59
1994	Alfalfa	ton/acre	2.10	2.00	2.10	3.13	4.20	4.09	2.36	3.40	3.50	1.70		4.07
1995	Alfalfa	ton/acre	1.44	2.44	2.85	3.43	4.89	3.88		3.33	3.42	1.50		3.86
1996	Alfalfa	ton/acre	1.87		2.39		4.46	3.61		2.40	3.48			3.59
1997	Alfalfa	ton/acre	1.90		2.60	4.00	4.52	4.11	3.10	2.83	4.12	1.93		4.09
1998	Alfalfa	ton/acre	2.02		2.20		4.40	4.00		3.33	4.01			3.98
1999	Alfalfa	ton/acre	2.10		2.64		4.52	3.86		3.80	3.83			3.84
2000	Alfalfa	ton/acre	1.87	2.00	1.97		4.31	4.06		3.33	3.30			4.04
2001	Alfalfa	ton/acre	1.74	2.00	2.40		4.40	3.58	2.63	3.75	3.40			3.56

Derivation of Y_{env} equation

Graph input points:	**Year**	**X axis**	**Yield**
	1973	1	3.09
	1974	2	3.59
	1983	11	3.49
	1988	16	3.66
	1992	20	3.68
	1995	23	3.86
	1997	25	4.09
	2000	28	4.04

Derived $Y_{env(ALFALFA)}$ polynomial equation: **$y = 0.0006x^2 + 0.0108x + 3.2948$ (see Figure 2.1.4.52)**

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.84 Area-weighted crop yields - South Platte subbasin (cont)

Crop: barley

Units: bushels per acre

Assumption: significant subbasin barley production in both counties during entire 1972 - 2001 study period; estimate annual yields for years for which data do not exist

National Agricultural Statistics Service (NASS) crop yield data			County:										South Platte subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Barley	bu/acre	49.00	50.00	51.00	73.00	56.00	67.00	50.00	51.00	66.00	46.00	66.82
1973	Barley	bu/acre	51.00	47.00	46.93	48.00	56.00	63.00	46.20	58.00	66.00	45.00	62.88
1974	Barley	bu/acre	48.00	52.00	39.00	62.00	60.53	53.09	58.00	42.47	60.43		53.04
1975	Barley	bu/acre	47.00	40.00	40.00	79.89	63.00	58.73	50.00	65.00	58.00		58.61
1976	Barley	bu/acre	48.00	60.00	50.00	79.00	56.00	58.94	70.00	50.00	50.00		58.83
1977	Barley	bu/acre	49.00	55.00	26.00	68.00	44.00	39.00	49.00	32.00	30.00		39.10
1978	Barley	bu/acre	62.00	70.00	32.00	77.00	62.00	61.00	60.00	42.00	37.00		61.01
1979	Barley	bu/acre	32.00	38.00	31.00	70.00	50.00	51.00		51.00	54.00		50.81
1980	Barley	bu/acre	43.60	60.00	53.11	79.79	53.47	49.76	34.00	42.55	49.53		49.70
1981	Barley	bu/acre	53.63	53.50	44.63	79.54	45.93	48.89		50.00	53.85		48.94
1982	Barley	bu/acre	65.00	65.00	55.00	63.40	57.06	56.28		55.00	62.00		56.37
1983	Barley	bu/acre	50.00	60.00	66.50	77.35	69.58	71.45	65.00	50.00	48.88		71.24
1984	Barley	bu/acre	50.00	70.00	66.00	65.00	70.00	70.00	64.00	51.00	54.00		69.80
1985	Barley	bu/acre	48.00	60.60	68.10	68.00	66.00	78.00	55.00	51.00	54.00		77.70
1986	Barley	bu/acre	50.00	73.29	66.33	77.49	68.46	74.29	57.00	65.00	69.00		74.05
1987	Barley	bu/acre	50.00	65.00	44.82	76.47	47.00	77.24	52.00	70.00	55.00		76.97
1988	Barley	bu/acre	60.00	70.00	33.00	51.88	45.00	41.48	46.00	42.00	41.00		41.67
1989	Barley	bu/acre	55.00	65.00	53.33	73.00	59.82	63.80	50.00	57.50	64.15		63.71
1990	Barley	bu/acre	60.00	70.00	55.00	73.03	62.50	67.76	45.00	60.50	66.44		67.68
1991	Barley	bu/acre	70.00	65.00	62.00	82.40	70.47	74.59	65.00	69.00	68.00		74.54
1992	Barley	bu/acre	59.00		66.00	83.20	70.00	75.00	81.00	61.00	60.00		74.84
1993	Barley	bu/acre	60.80		65.00	101.80	65.00	68.33	55.00	70.00	67.50		68.25
1994	Barley	bu/acre	60.96		55.00	70.00	69.00	66.00	75.00	76.00	36.00		65.95
1995	Barley	bu/acre	62.15		86.00	103.00	83.00	70.34			69.00		70.26
1996	Barley	bu/acre	62.58			93.36	75.91	70.85			81.03		70.77
1997	Barley	bu/acre	61.10			87.00	57.00	80.09	70.00		86.00		79.90
1998	Barley	bu/acre	61.52			85.33		71.12	82.86		101.05		71.02
1999	Barley	bu/acre	61.66			96.51	78.80	71.68					71.58
2000	Barley	bu/acre	61.80			75.00		72.82			100.00		72.71
2001	Barley	bu/acre	61.73			76.00		73.31					73.19

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	66.82
	1975	3	58.61
	1978	6	61.01
	1983	11	71.24
	1986	14	74.05
	1992	20	74.84
	2001	29	72.71

Derived $Y_{env(BARLEY)}$ polynomial equation: $y = -0.0185x^2 + 1.0409x + 59.859$ **(see Figure 2.1.4.53)**

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.84 Area-weighted crop yields - South Platte subbasin (cont)

Crop: corn

Units: bushels per acre

Assumption: corn production in Laramie County only during the 1972 - 2001 period; use Laramie County annual yields as subbasin annual yields; estimate annual Laramie County yields as required

National Agricultural Statistics Service (NASS) crop yield data			County:											South Platte subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette		
1972	Corn	bu/acre		70.00	57.00	80.00	94.00	78.00	70.00		94.00			78.00
1973	Corn	bu/acre	71.00	74.00		84.78	89.22	97.00	73.00		116.00			97.00
1974	Corn	bu/acre		78.00		50.50	79.50	101.25	50.00		77.00			101.25
1975	Corn	bu/acre		63.00		59.00	85.07	66.00	55.00		96.00			66.00
1976	Corn	bu/acre		55.00		85.00	93.08	94.00	55.00		98.00			94.00
1977	Corn	bu/acre		55.00		86.00	94.00	95.00	55.00		73.80			95.00
1978	Corn	bu/acre		61.00	91.00	85.40	89.50	66.00	61.00	88.00	73.00			66.00
1979	Corn	bu/acre			80.00	86.00	89.83	75.00	75.00	70.00	88.00			75.00
1980	Corn	bu/acre			90.00	90.00	102.90	95.00	85.00	93.00	90.00			95.00
1981	Corn	bu/acre			84.00	84.00	113.53	90.00	74.00	92.00	112.00			90.00
1982	Corn	bu/acre			84.00	98.00	111.00	95.00	87.00	88.00	104.94			95.00
1983	Corn	bu/acre			85.00	94.00	110.55	101.00	78.00	100.00	95.00			101.00
1984	Corn	bu/acre				90.00	105.39	97.00	65.00	99.00	90.00			97.00
1985	Corn	bu/acre				91.00	100.00	94.00	60.00	90.00	92.32			94.00
1986	Corn	bu/acre				104.00	119.70	119.00	76.00	102.00	108.00			119.00
1987	Corn	bu/acre			92.00	91.00	117.75	112.11	80.00	95.00	97.00			112.11
1988	Corn	bu/acre			126.00	95.00	130.78	127.00	90.00	108.00	104.00			127.00
1989	Corn	bu/acre			91.00	92.08	96.91	102.00	85.00	90.00	98.14			102.00
1990	Corn	bu/acre			120.00	92.00	127.99	123.00	90.00	113.33	111.80			123.00
1991	Corn	bu/acre			99.00	95.00	125.99	109.04	94.00	66.00	106.00			109.04
1992	Corn	bu/acre			97.00	78.00	101.81	102.00	38.00		92.00			102.00
1993	Corn	bu/acre			80.00	88.50	82.00	65.50			80.00			65.50
1994	Corn	bu/acre				111.00	130.39	111.72			103.00			111.72
1995	Corn	bu/acre				108.00		102.25			80.00			102.25
1996	Corn	bu/acre				105.00	130.87	98.10	103.33		101.90			98.10
1997	Corn	bu/acre				126.07	140.00	135.00			132.00			135.00
1998	Corn	bu/acre					136.99	127.94			138.26			127.94
1999	Corn	bu/acre				101.43	122.17	120.00			135.00			120.00
2000	Corn	bu/acre				112.86	136.63	142.86			130.81			142.86
2001	Corn	bu/acre						135.00			112.94			135.00

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	78.00
	1973	1	97.00
	1976	4	94.00
	1980	8	95.00
	1983	11	101.00
	1987	15	112.11
	1990	18	123.00
	1991	19	109.04
	1998	26	127.94
	2000	28	142.86
	2001	29	135.00

Derived $Y_{env(CORN)}$ polynomial equation: **$y = 0.0168x^2 + 1.2636x + 85.222$ (see Figure 2.1.4.54)**

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.84 Area-weighted crop yields - South Platte subbasin (cont)

Crop: dry beans

Units: hundred pounds per acre (cwt/acre)

Assumption: dry beans production in Laramie County during the 1972 - 2001 period; assume subbasin annual dry beans yields equal Laramie County annual yields

National Agricultural Statistics Service (NASS) crop yield data			County:											South Platte subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette		
1972	Dry beans	cwt/acre			17.75	18.80	19.70	18.30			19.50			18.30
1973	Dry beans	cwt/acre			17.50	17.50	18.20	18.00			17.50			18.00
1974	Dry beans	cwt/acre			17.20	17.80	19.48	19.90			19.90			19.90
1975	Dry beans	cwt/acre			15.40	18.30	16.84	17.60			17.60			17.60
1976	Dry beans	cwt/acre			16.00	19.30	17.80	16.00			16.50			16.00
1977	Dry beans	cwt/acre			14.23	19.50	17.90	17.60			14.00			17.60
1978	Dry beans	cwt/acre			15.80	16.60	16.29	14.30			15.80			14.30
1979	Dry beans	cwt/acre			19.00	21.00	19.11	18.00			18.00			18.00
1980	Dry beans	cwt/acre			18.80	19.00	21.70	20.70			18.43			20.70
1981	Dry beans	cwt/acre			17.00	21.30	22.04	20.60			22.10			20.60
1982	Dry beans	cwt/acre			15.00	19.70	18.07	16.60			17.00			16.60
1983	Dry beans	cwt/acre			14.60	19.60	18.80	16.70			18.50			16.70
1984	Dry beans	cwt/acre			19.00	19.80	22.20	20.00			19.46			20.00
1985	Dry beans	cwt/acre			18.00	15.10	19.00	18.80			14.40			18.80
1986	Dry beans	cwt/acre			18.00	19.50	18.65	17.80			16.35			17.80
1987	Dry beans	cwt/acre			19.00	21.40	19.20	18.56			17.00			18.56
1988	Dry beans	cwt/acre			20.00	17.42	21.30	17.53			18.50			17.53
1989	Dry beans	cwt/acre			17.00	19.00	19.18	20.70			18.61			20.70
1990	Dry beans	cwt/acre			17.50	17.00	21.03	20.79			19.00			20.79
1991	Dry beans	cwt/acre			17.00	20.00	19.85	17.87			18.93			17.87
1992	Dry beans	cwt/acre				20.00	18.83	15.56			15.67			15.56
1993	Dry beans	cwt/acre				13.40	14.58	14.79			14.57			14.79
1994	Dry beans	cwt/acre				18.17	20.45	20.60			16.00			20.60
1995	Dry beans	cwt/acre				17.78	17.96	18.24			17.70			18.24
1996	Dry beans	cwt/acre				26.34	23.99	22.20			16.94			22.20
1997	Dry beans	cwt/acre				23.52	21.91	23.64			20.59			23.64
1998	Dry beans	cwt/acre				22.41	22.63	24.25			22.58			24.25
1999	Dry beans	cwt/acre				19.14	21.02	23.24			18.63			23.24
2000	Dry beans	cwt/acre				21.05	22.86	24.68			18.12			24.68
2001	Dry beans	cwt/acre				18.56	20.81	26.26			18.85			26.26

Derivation of Y_{env} equation

Graph input points:				Year	X axis	Yield								
				1972	0	18.30								
				1973	1	18.00								
				1974	2	19.90								
				1984	12	20.00								
				1989	17	20.70								
				1990	18	20.79								
				1997	25	23.64								
				1998	26	24.25								
				2001	29	26.26								

Derived $Y_{env(DRYBEANS)}$ polynomial equation: **$y = 0.0103x^2 - 0.0741x + 18.815$ (see Figure 2.1.4.55)**

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.84 Area-weighted crop yields - South Platte subbasin (cont)

Crop: oats

Units: bushels per acre

Assumption: significant oats production data for Albany and Laramie Counties during the 1972 - 1991 period; assume no Albany County oats production 1992 - 2001; use Laramie County annual yields for subbasin 1992 - 2001 annual yields; estimate annual Larramie County yields as required

National Agricultural Statistics Service (NASS) crop yield data			County:										South Platte subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Oats	bu/acre	50.00	61.00	66.00	65.67	64.00	54.33	57.00	66.00	60.00	55.00	54.29
1973	Oats	bu/acre	50.00	50.00	52.20	53.21	53.00	61.00	50.00	59.00	49.00	50.00	60.89
1974	Oats	bu/acre	39.00	50.00	33.00	50.00	48.00	63.00	43.23	43.00	59.81	60.00	62.76
1975	Oats	bu/acre	52.00	52.00	45.82	60.00	46.00	49.00	50.40	40.00	46.00	44.00	49.03
1976	Oats	bu/acre	56.00	59.00	56.79	58.00	54.00	63.00	58.00	60.00	55.00	53.00	62.93
1977	Oats	bu/acre	52.00	53.00	30.00	63.62	44.00	34.00	51.85	51.00	42.00	52.00	34.18
1978	Oats	bu/acre	58.50	62.00	75.35	76.00	76.00	76.00	62.00	79.00	77.00	79.00	75.83
1979	Oats	bu/acre	67.00	62.00	43.00	62.00	56.00	48.00	66.18	46.00	39.00	77.50	48.19
1980	Oats	bu/acre	58.00	72.00	48.00	60.00	59.70	69.00	64.00	55.00	59.00	65.00	68.89
1981	Oats	bu/acre	43.00	46.73	49.00	59.03	65.63	67.00	50.00	54.00	58.00	64.00	66.76
1982	Oats	bu/acre	65.50	62.00	70.00	64.60	79.00	79.42	68.00	74.00	59.00	74.00	79.28
1983	Oats	bu/acre	65.00	60.00	58.17	66.23	60.00	64.00	61.00	60.00	51.00	64.00	64.01
1984	Oats	bu/acre	53.00	54.00	52.00	73.00	55.00	64.46	54.00	58.00	46.29	54.00	64.35
1985	Oats	bu/acre	53.00	51.00	59.00	65.65	60.00	59.00	50.44	58.00	47.00	63.00	58.94
1986	Oats	bu/acre	65.00	71.00	60.00	74.00	63.00	75.00	53.00	63.00	77.00	60.00	74.90
1987	Oats	bu/acre	61.00	68.00	48.36	63.33	80.21	85.27	51.00	71.00	69.00	56.00	85.03
1988	Oats	bu/acre	44.00	46.00	37.50	62.00	44.44	34.50	34.00	39.00	33.00	52.00	34.60
1989	Oats	bu/acre	60.00	62.00	42.50	62.00	47.00	63.00	52.00	50.00	50.00	61.00	62.97
1990	Oats	bu/acre	45.00	50.00	56.60	63.00	55.50	56.31	47.00	50.00	55.00	50.00	56.20
1991	Oats	bu/acre	45.00	56.00	72.00	71.00	69.00	60.00	53.00	50.00	85.00	56.00	59.85
1992	Oats	bu/acre		55.00	55.00	74.40	72.00	64.00	58.00	40.00	55.00	72.00	64.00
1993	Oats	bu/acre		65.00	59.00	86.00	86.00	82.75	72.50	66.00	77.00	65.00	82.75
1994	Oats	bu/acre		45.00	46.00	84.00	77.00	70.00	50.00	62.00	62.00	55.00	70.00
1995	Oats	bu/acre				94.12		66.61	91.67		73.64		66.61
1996	Oats	bu/acre				80.69		46.67	44.23	70.00			46.67
1997	Oats	bu/acre			51.82	85.42	71.43	75.00	72.22	80.00	64.29		75.00
1998	Oats	bu/acre				88.89		71.67	75.00		50.00		71.67
1999	Oats	bu/acre			55.00	94.29	70.00	65.99	78.00				65.99
2000	Oats	bu/acre				108.89		65.19					65.19
2001	Oats	bu/acre				76.67	67.00	75.00			96.67		75.00

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1973	1	60.89
	1974	2	62.76
	1976	4	62.93
	1980	8	68.89
	1997	25	75.00
	2001	29	75.00

Derived $Y_{env(OATS)}$ polynomial equation: **$y = -0.0257x^2 + 1.3197x + 58.335$ (see Figure 2.1.4.48.)**

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.84 Area-weighted crop yields - South Platte subbasin (cont)

Crop: other hay (not including alfalfa)

Units: tons per acre

Assumption: other hay production ongoing through entire 1972 - 2002 period in both counties located partially or entirely within the subbasin; estimate annual yields as required

National Agricultural Statistics Service (NASS) crop yield data			County:										South Platte subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Other hay	ton/acre	1.10	1.11	1.16	1.50	1.20	1.50	1.00	1.10	1.30	1.17	1.50
1973	Other hay	ton/acre	1.00	1.13	1.20	1.70	1.20	1.30	1.60	1.00	1.10	1.45	1.30
1974	Other hay	ton/acre	1.00	1.19	1.40	1.53	1.20	1.40	0.80	1.10	1.20	1.23	1.40
1975	Other hay	ton/acre	0.84	1.10	0.90	1.46	1.50	1.04	1.30	0.90	1.10	1.05	1.04
1976	Other hay	ton/acre	1.01	1.20	1.10	1.56	1.20	0.70	1.00	1.00	0.87	1.27	0.70
1977	Other hay	ton/acre	0.90	0.98	1.00	1.24	1.13	0.70	0.80	0.90	1.00	1.00	0.70
1978	Other hay	ton/acre	1.10	1.30	0.90	1.80	1.60	0.90	1.30	1.10	1.20	1.14	0.90
1979	Other hay	ton/acre	1.20	1.40	0.90	2.24	1.20	1.37	1.20	1.20	1.10	1.32	1.37
1980	Other hay	ton/acre	0.90	1.30	1.39	1.51	1.10	1.10	0.90	0.90	1.40	1.11	1.10
1981	Other hay	ton/acre	1.00	1.40	1.40	1.63	1.50	1.20	1.20	1.40	1.47	1.18	1.20
1982	Other hay	ton/acre	1.16	1.59	1.70	1.60	1.86	1.03	2.40	1.61	1.10	1.16	1.03
1983	Other hay	ton/acre	1.31	1.62	2.20	2.20	1.50	1.40	1.85	1.10	1.55	1.28	1.40
1984	Other hay	ton/acre	1.20	1.60	1.40	2.20	1.80	1.10	1.20	1.40	1.40	1.20	1.10
1985	Other hay	ton/acre	1.06	1.66	1.27	1.91	1.47	1.38	1.24	1.00	1.37	1.03	1.38
1986	Other hay	ton/acre	1.24	1.37	0.90	1.73	2.02	1.64	1.90	1.90	1.61	1.18	1.64
1987	Other hay	ton/acre	1.44	1.57	1.36	2.30	1.48	1.99	1.67	1.90	1.15	0.84	1.98
1988	Other hay	ton/acre	1.37	1.36	0.75	0.97	1.41	1.16	1.55	1.60	1.34	0.80	1.16
1989	Other hay	ton/acre	0.68	0.87	0.70	1.29	1.36	1.31	0.78	1.90	1.11	0.78	1.30
1990	Other hay	ton/acre	1.10	1.27	1.00	1.56	1.55	1.53	1.01	1.87	1.60	0.99	1.53
1991	Other hay	ton/acre	1.90	1.34	1.60	1.79	1.83	1.70	1.70	1.40	1.70	1.09	1.70
1992	Other hay	ton/acre	1.11	1.30	1.30	1.79	1.40	1.29	0.90	0.90	1.00	0.89	1.29
1993	Other hay	ton/acre	1.30	1.80	1.90	2.10	2.10	2.10	1.80	1.30	1.20	1.10	2.09
1994	Other hay	ton/acre	1.20	1.42	1.20	1.70	1.50	1.90	0.90	1.40	1.00	0.86	1.89
1995	Other hay	ton/acre	1.10	1.66	1.70	1.80	1.80	1.71		1.40	1.70	1.23	1.70
1996	Other hay	ton/acre	1.32		1.56		1.66	1.67		0.90	1.38		1.67
1997	Other hay	ton/acre	1.21		1.81	2.17	2.00	1.58	1.60	2.00	2.11	1.10	1.58
1998	Other hay	ton/acre	1.14		1.62		2.20	1.70		2.33	1.29		1.69
1999	Other hay	ton/acre	1.50		1.90		1.67	1.50		1.13	1.90	1.18	1.50
2000	Other hay	ton/acre	1.40		1.67		1.50	1.58		1.00	1.00	1.09	1.58
2001	Other hay	ton/acre	1.03	1.13	1.71	1.91	2.25	1.31		1.00	1.31	1.01	1.31

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	1.50
	1974	2	1.40
	1979	7	1.37
	1983	11	1.40
	1986	14	1.64
	1991	19	1.70
	1995	23	1.70
	1998	26	1.69

Derived $Y_{env(OTHER\ HAY)}$ polynomial equation: **$y = 0.0004x^2 + 0.0021x + 1.4196$ (see Figure 2.1.4.57)**

County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated

50.00 County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.84 Area-weighted crop yields - South Platte subbasin (cont)

Crop: spring wheat

Units: tons per acre

Assumption: assume spring wheat production data in Laramie Counties for the entire 1972 - 2001 studyperiod; use annual Laramie County yields as subbasin yields during the study period; estimate annual Laramie County yields for years for which data do not exist

National Agricultural Statistics Service (NASS) crop yield data			County:										South Platte subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette	
1972	Spring wheat	bu/acre		40.00	35.00	47.00	35.00	35.88	36.00		34.00		35.88
1973	Spring wheat	bu/acre		34.00	33.67	44.00	33.00	35.40	30.00	33.00	33.00		35.40
1974	Spring wheat	bu/acre		36.00	35.33	50.00	33.00	41.00	28.00	35.00	37.00		41.00
1975	Spring wheat	bu/acre		34.00	40.00	37.00	42.00	35.00	27.00	38.00	35.00		35.00
1976	Spring wheat	bu/acre		35.00	43.00	45.00	40.00	35.00	27.00	39.00	33.00		35.00
1977	Spring wheat	bu/acre		34.00	38.00	47.00	39.00	33.00	30.00	36.00	31.00		33.00
1978	Spring wheat	bu/acre		36.00	32.00	55.00	34.00	33.00	32.00	34.00	32.00		33.00
1979	Spring wheat	bu/acre		38.00	49.40	61.00	42.00	50.00	34.00	45.00	50.00		50.00
1980	Spring wheat	bu/acre		32.00	35.00	41.67	32.00	34.00		33.00	34.00		34.00
1981	Spring wheat	bu/acre		27.00	29.50	34.00	34.00	36.00	25.00	32.00	37.00		36.00
1982	Spring wheat	bu/acre		38.00	37.25	50.00	52.00	58.00	32.00	52.33	56.67		58.00
1983	Spring wheat	bu/acre		40.00	40.00	59.60	54.00	60.00		53.00	60.00		60.00
1984	Spring wheat	bu/acre		60.00	44.00	63.00	55.00	50.00		53.00	45.00		50.00
1985	Spring wheat	bu/acre		49.00	40.00	49.00	40.75	41.00		42.00	38.00		41.00
1986	Spring wheat	bu/acre		44.00	50.00	40.00	63.00	57.50		55.00	53.00		57.50
1987	Spring wheat	bu/acre		36.00	40.00	42.00	34.00	42.00		40.00	38.00		42.00
1988	Spring wheat	bu/acre		37.00	41.00	52.00	55.00	52.00		44.00	41.00		52.00
1989	Spring wheat	bu/acre		43.00	43.00	65.00	46.00	43.00		47.00	47.00		43.00
1990	Spring wheat	bu/acre			30.00	56.00	50.00	47.00			30.00		47.00
1991	Spring wheat	bu/acre						54.00	48.00	50.00			54.00
1992	Spring wheat	bu/acre				65.00	40.00	73.00		36.00			73.00
1993	Spring wheat	bu/acre				89.00		79.00		58.00			79.00
1994	Spring wheat	bu/acre				54.17	41.00	45.00		44.17			45.00
1995	Spring wheat	bu/acre				62.00	67.00	68.46					68.46
1996	Spring wheat	bu/acre				66.67		60.00					60.00
1997	Spring wheat	bu/acre					44.00	58.00			50.00		58.00
1998	Spring wheat	bu/acre						62.09					62.09
1999	Spring wheat	bu/acre						58.71					58.71
2000	Spring wheat	bu/acre						61.45					61.45
2001	Spring wheat	bu/acre						60.05					60.05

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1974	2	41.00
	1979	7	50.00
	1982	10	58.00
	1983	11	60.00
	1986	14	57.50
	1988	16	52.00
	1995	23	68.46

Derived $Y_{env(SPRINGWHEAT)}$ polynomial equation: **$y = -0.0223x^2 + 1.6967x + 38.023$ (see Figure 2.1.4.58)**

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.84 Area-weighted crop yields - South Platte subbasin (cont)

Crop: sugar beets

Units: tons per acre

Assumption: sugar beet production data for Laramie County is continuous through entire 1972 - 2001 period; use annual Laramie County yields as annual subbasin yields

National Agricultural Statistics Service (NASS) crop yield data			County:											South Platte subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette		
1972	Sugar beets	ton/acre			14.70	19.90	22.93	15.30			22.80			15.30
1973	Sugar beets	ton/acre			10.29	14.60	19.31	11.50			16.40			11.50
1974	Sugar beets	ton/acre					18.46	15.86			17.76			15.86
1975	Sugar beets	ton/acre					20.20	15.64			17.66			15.64
1976	Sugar beets	ton/acre					20.90	17.81			17.85			17.81
1977	Sugar beets	ton/acre					19.40	20.20			14.80			20.20
1978	Sugar beets	ton/acre					18.61	14.60			16.70			14.60
1979	Sugar beets	ton/acre					18.64	14.60			17.90			14.60
1980	Sugar beets	ton/acre					21.80	20.20						20.20
1981	Sugar beets	ton/acre					25.31	50.00			20.60			50.00
1982	Sugar beets	ton/acre					19.40	22.00			18.30			22.00
1983	Sugar beets	ton/acre					15.78	13.50			12.60			13.50
1984	Sugar beets	ton/acre				13.70	20.87	11.20			15.60			11.20
1985	Sugar beets	ton/acre				17.40	22.80	25.10			19.60			25.10
1986	Sugar beets	ton/acre				18.90	23.41	23.60			19.90			23.60
1987	Sugar beets	ton/acre				16.30	21.50	20.40			17.80			20.40
1988	Sugar beets	ton/acre				19.20	22.00	23.25			19.57			23.25
1989	Sugar beets	ton/acre				21.97	19.07	19.75			17.09			19.75
1990	Sugar beets	ton/acre				20.19	21.00	13.53			19.34			13.53
1991	Sugar beets	ton/acre				21.05	21.47	17.17			16.72			17.17
1992	Sugar beets	ton/acre				20.88	16.97	17.53			16.53			17.53
1993	Sugar beets	ton/acre				19.86	15.63	17.08			17.84			17.08
1994	Sugar beets	ton/acre				16.93	20.56	20.25			20.49			20.25
1995	Sugar beets	ton/acre				20.72	16.34	15.75			13.87			15.75
1996	Sugar beets	ton/acre				20.02	16.88	17.81			17.95			17.81
1997	Sugar beets	ton/acre				22.78	15.69	14.67			16.63			14.67
1998	Sugar beets	ton/acre				21.07	19.37	18.70			17.80			18.70
1999	Sugar beets	ton/acre				21.25	18.40	18.17			18.39			18.17
2000	Sugar beets	ton/acre				21.54	18.70	15.41			19.49			15.41
2001	Sugar beets	ton/acre				18.56	17.71	17.11			19.06			17.11

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	15.30
	1976	4	17.81
	1977	5	20.20
	1980	8	20.20
	1982	10	22.00
	1986	14	23.60

Derived $Y_{env(SUGARBEETS)}$ polynomial equation: **$y = -0.0175x^2 + 0.8631x + 14.513$ (see Figure 2.1.4.59)**

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Table 2.1.4.84 Area-weighted crop yields - South Platte subbasin (cont)

Crop: winter wheat

Units: bushels per acre

Assumption: winter wheat production data for Laramie County is continuous through entire 1972 - 2001 period; use annual Laramie County yields as annual subbasin yields

National Agricultural Statistics Service (NASS) crop yield data			County:											South Platte subbasin - area-weighted yield
Year	Crop	Unit	Albany	Carbon	Converse	Fremont	Goshen	Laramie	Natrona	Niobrara	Platte	Sublette		
1972	Winter wheat	bu/acre		40.00	40.00	41.00	43.06	42.00		42.00	40.00			42.00
1973	Winter wheat	bu/acre		39.00	38.00	37.00	38.54	37.00		38.00	38.00			37.00
1974	Winter wheat	bu/acre		33.00	36.00	32.00	37.17	36.00		36.00	38.00			36.00
1975	Winter wheat	bu/acre		36.00	38.00	32.00	39.54	36.00		37.00	37.00			36.00
1976	Winter wheat	bu/acre		36.00	32.00	39.00	33.00	33.00		32.00	29.00			33.00
1977	Winter wheat	bu/acre		34.00	25.00	38.00	23.00	26.00		22.00	22.50			26.00
1978	Winter wheat	bu/acre		35.60	34.00		44.00	33.59		33.00	35.00			33.59
1979	Winter wheat	bu/acre		30.00	23.00		35.00	42.00		38.00	34.56			42.00
1980	Winter wheat	bu/acre		34.32	29.00		48.00	33.31		28.00	35.00			33.31
1981	Winter wheat	bu/acre		33.98	32.00		41.00	40.41		33.50	35.00			40.41
1982	Winter wheat	bu/acre		40.00	36.00		51.50	53.00		33.00	39.00			53.00
1983	Winter wheat	bu/acre		38.00	38.00		53.00	54.00		44.00	40.00			54.00
1984	Winter wheat	bu/acre		50.00	40.00	53.00	42.60	59.00		37.00	35.00			59.00
1985	Winter wheat	bu/acre		45.00	35.00	52.00	34.00	38.73		35.00	33.00			38.73
1986	Winter wheat	bu/acre		32.00	38.00	55.00	46.20	60.00		36.00	35.00			60.00
1987	Winter wheat	bu/acre		35.00	37.00	51.00	39.00	56.00		41.00	40.00			56.00
1988	Winter wheat	bu/acre		40.00	39.25	53.00	50.00	54.63		39.00	38.00			54.63
1989	Winter wheat	bu/acre		35.00	36.00	36.00	43.00	46.98		33.00	41.00			46.98
1990	Winter wheat	bu/acre		40.00	40.00	58.00	46.67	65.45		40.00	43.33			65.45
1991	Winter wheat	bu/acre	47.00	40.00	32.50	68.33	55.91	50.32		50.25	45.67			50.32
1992	Winter wheat	bu/acre		43.00	42.00	55.00	46.00	55.59		42.00	47.00			55.59
1993	Winter wheat	bu/acre		50.00	50.00	60.50	52.50	56.96		54.00	55.00			56.96
1994	Winter wheat	bu/acre		50.00		65.00	65.00	42.00		41.00	50.00			42.00
1995	Winter wheat	bu/acre					59.00	80.00		75.00	82.00			80.00
1996	Winter wheat	bu/acre					42.40	54.29			63.64			54.29
1997	Winter wheat	bu/acre					61.21	80.25			56.25			80.25
1998	Winter wheat	bu/acre					72.11	76.92			61.38			76.92
1999	Winter wheat	bu/acre					65.00	79.20			60.00			79.20
2000	Winter wheat	bu/acre					60.00	76.92			64.65			76.92
2001	Winter wheat	bu/acre					73.33	72.00			50.00			72.00

Derivation of Y_{env} equation

Graph input points:	Year	X axis	Yield
	1972	0	42.00
	1973	1	37.00
	1979	7	42.00
	1982	10	53.00
	1983	11	54.00
	1987	15	56.00
	1997	25	80.25
	1999	27	79.20
	2000	28	76.92

Derived $Y_{env(WINTERWHEAT)}$ polynomial equation: $y = 0.0158x^2 + 1.0449x + 37.295$ (see Figure 2.1.4.60)

	County and year for which National Agricultural Statistics Service (NASS) crop yield data does not exist and for which an estimated yield value was not calculated
50.00	County and year for which NASS crop yield data does not exist and for which an estimated value equal to the average of the previous five (5) values was calculated and inserted

Notes:

(1) See Table 2.1.4.51.

Figure 2.1.4.52.
Area-weighted annual barley yields and Y_{env} polynomial trend line and equation
South Platte subbasin

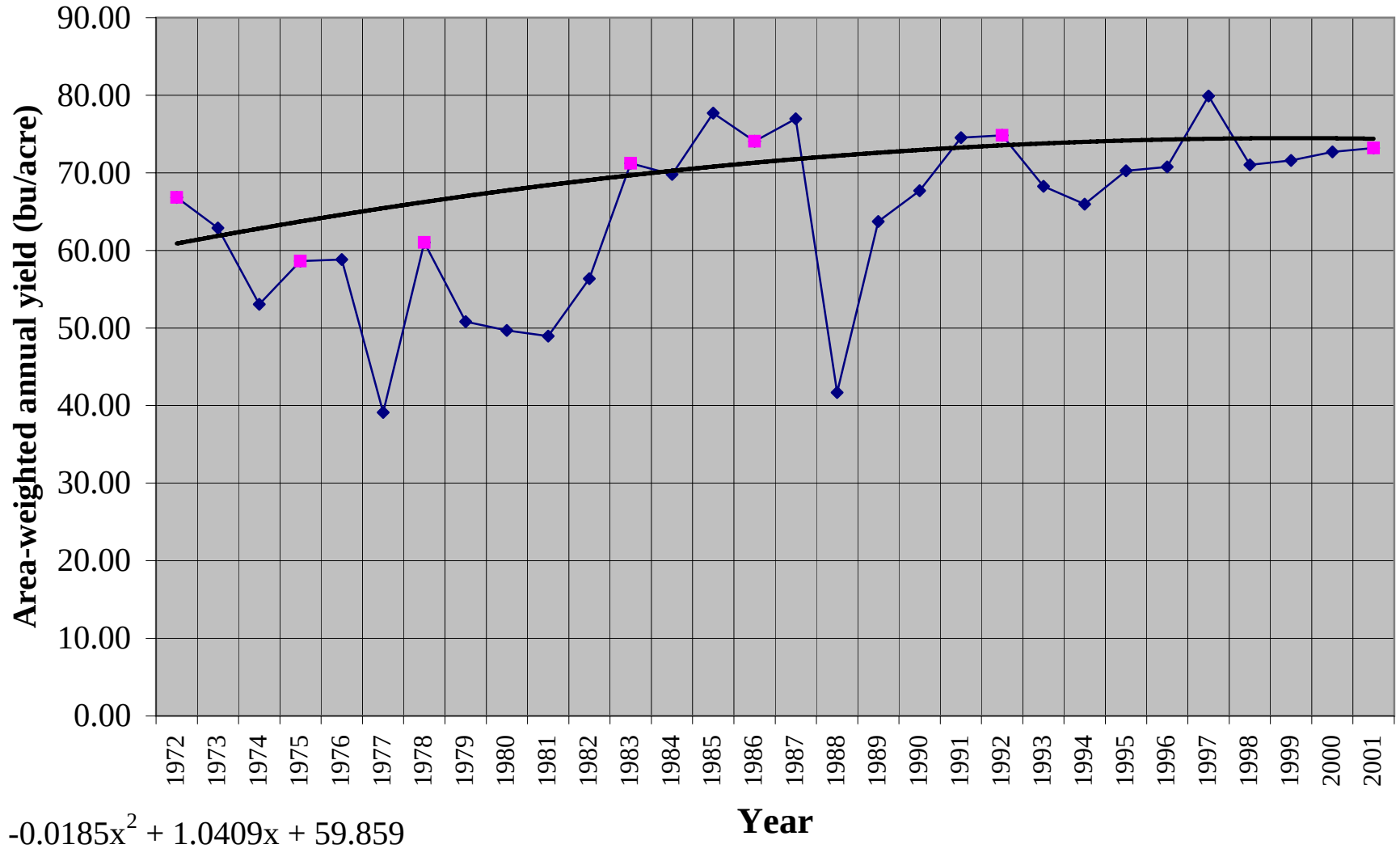


Figure 2.1.4.53.
Area-weighted annual corn yields and Y_{env} polynomial trend line and equation
South Platte subbasin

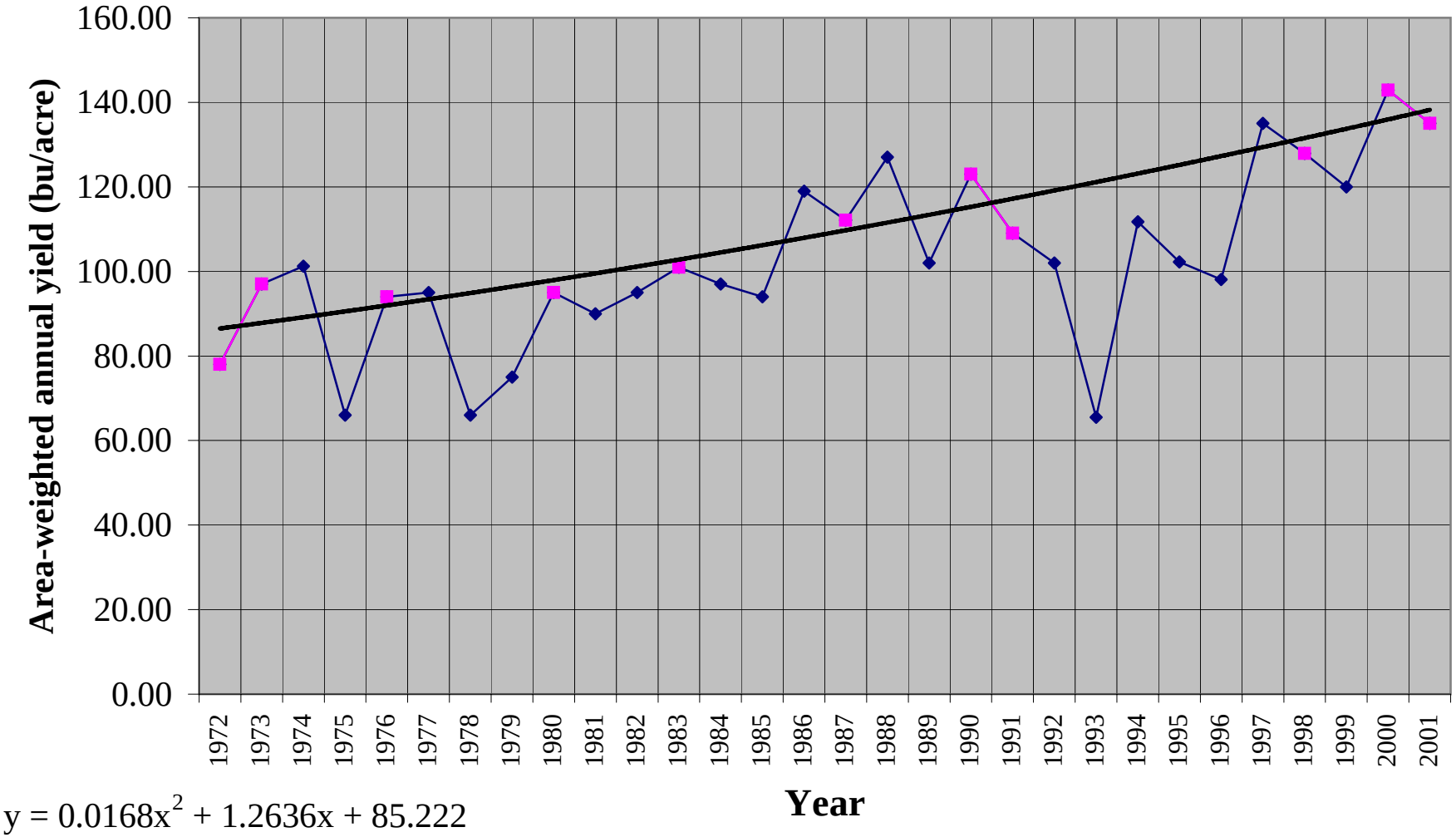


Figure 2.1.4.54.
Area-weighted annual dry beans yields and Y_{env} polynomial trend line and equation
South Platte subbasin

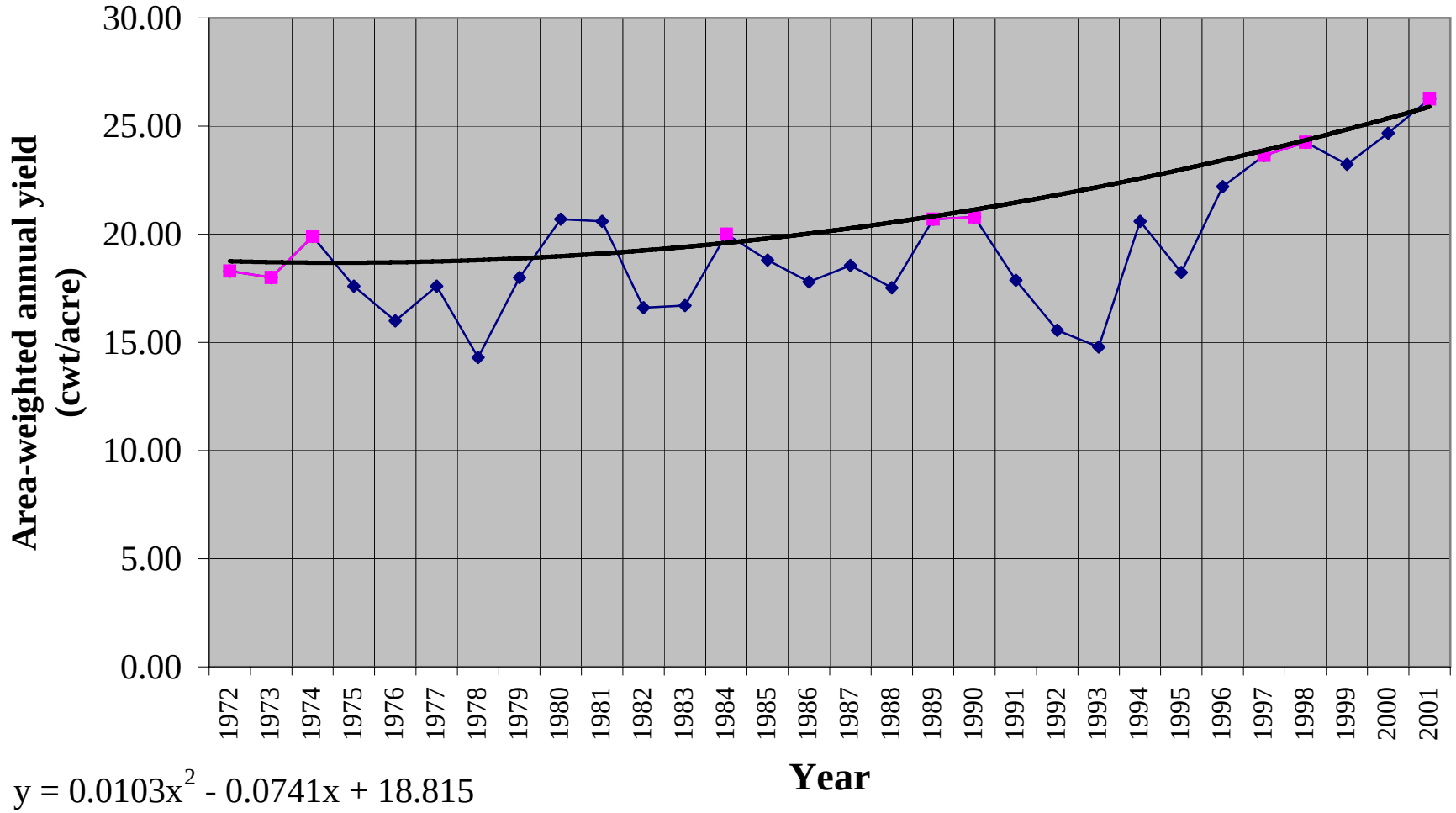
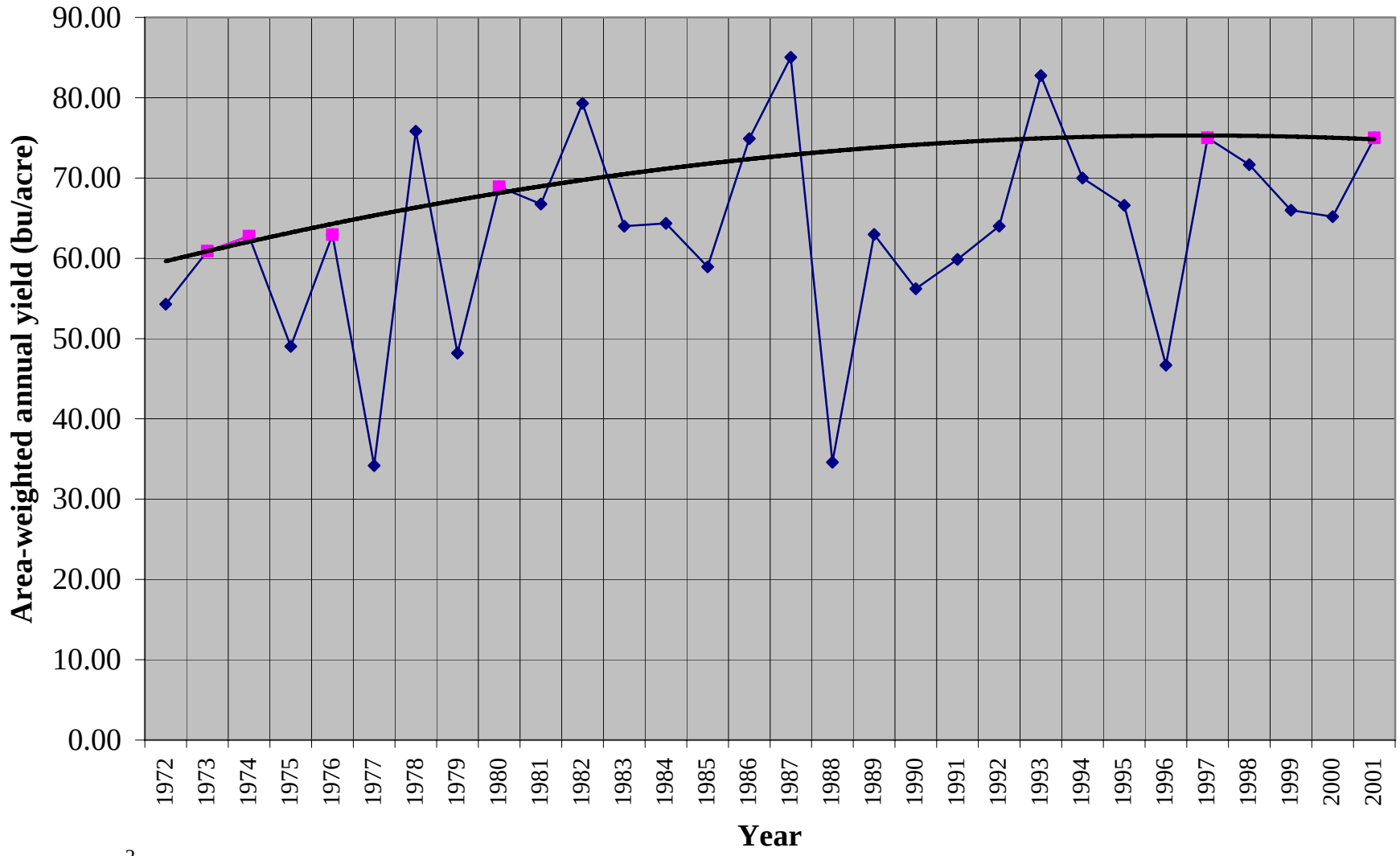


Figure 2.1.4.55.
Area-weighted annual oats yields and Y_{env} polynomial trend line and equation
South Platte subbasin



$y = -0.0257x^2 + 1.3197x + 58.335$

Figure 2.1.4.56.
Area-weighted annual other hay yields and Y_{env} polynomial trendline and equation
South Platte subbasin

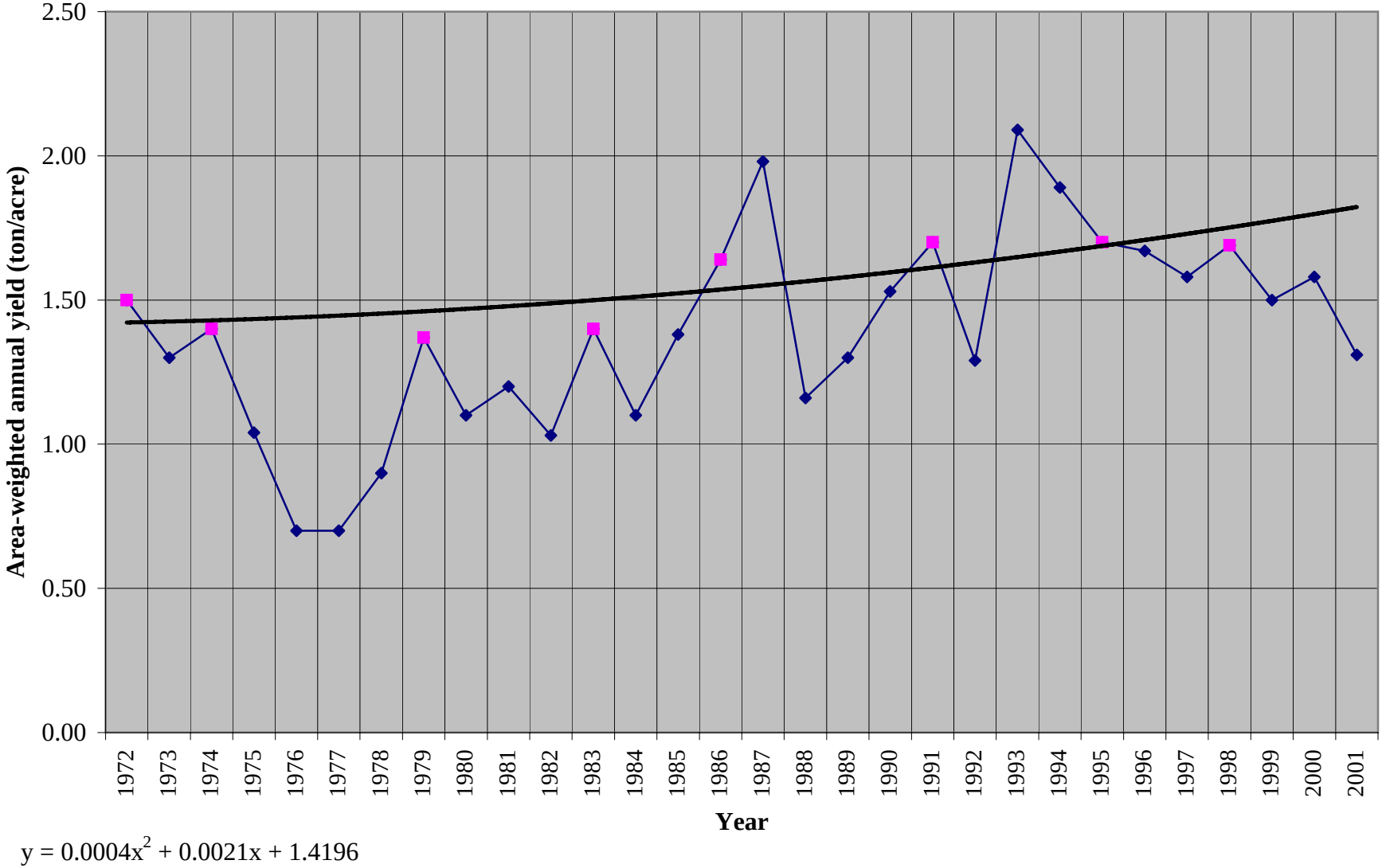
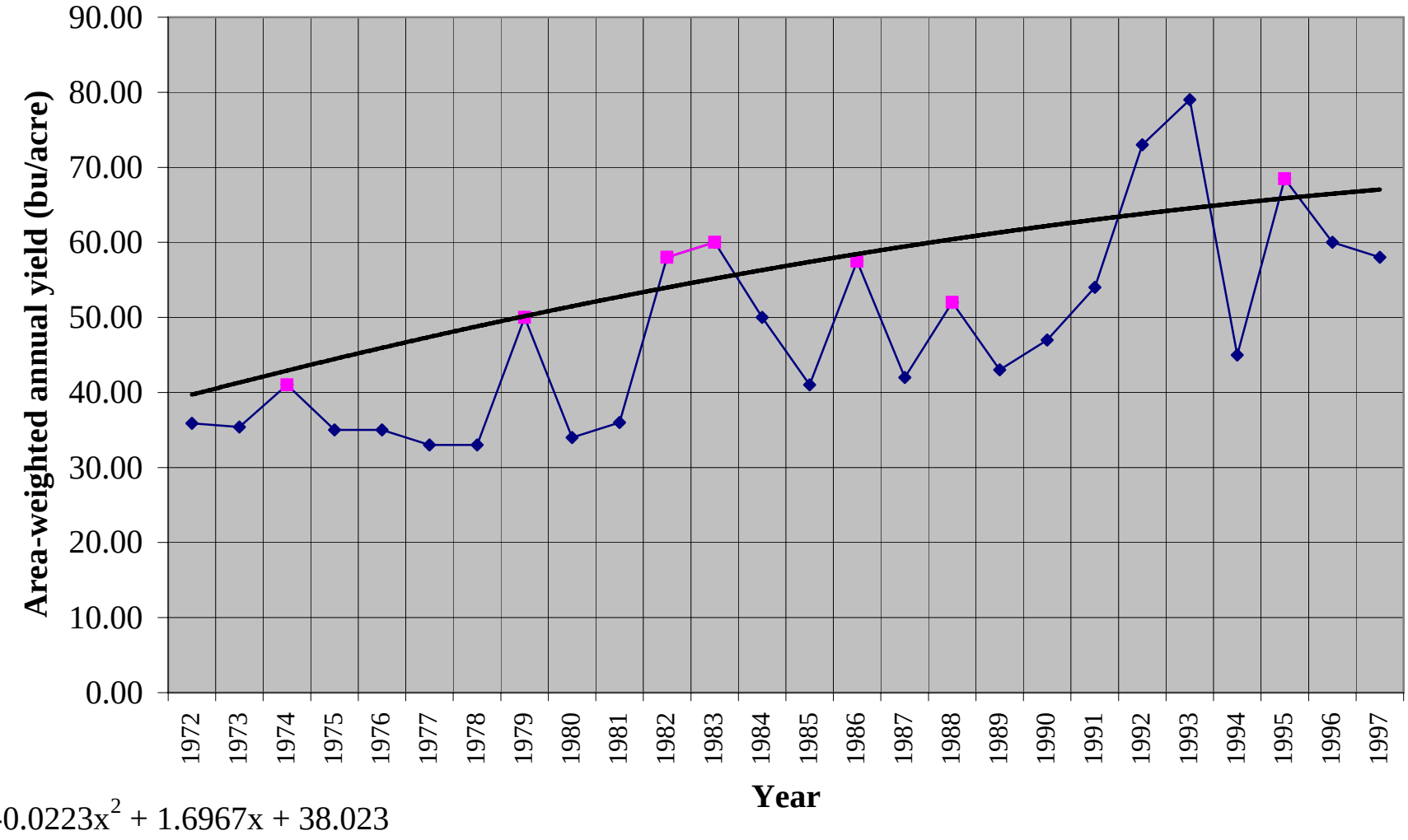
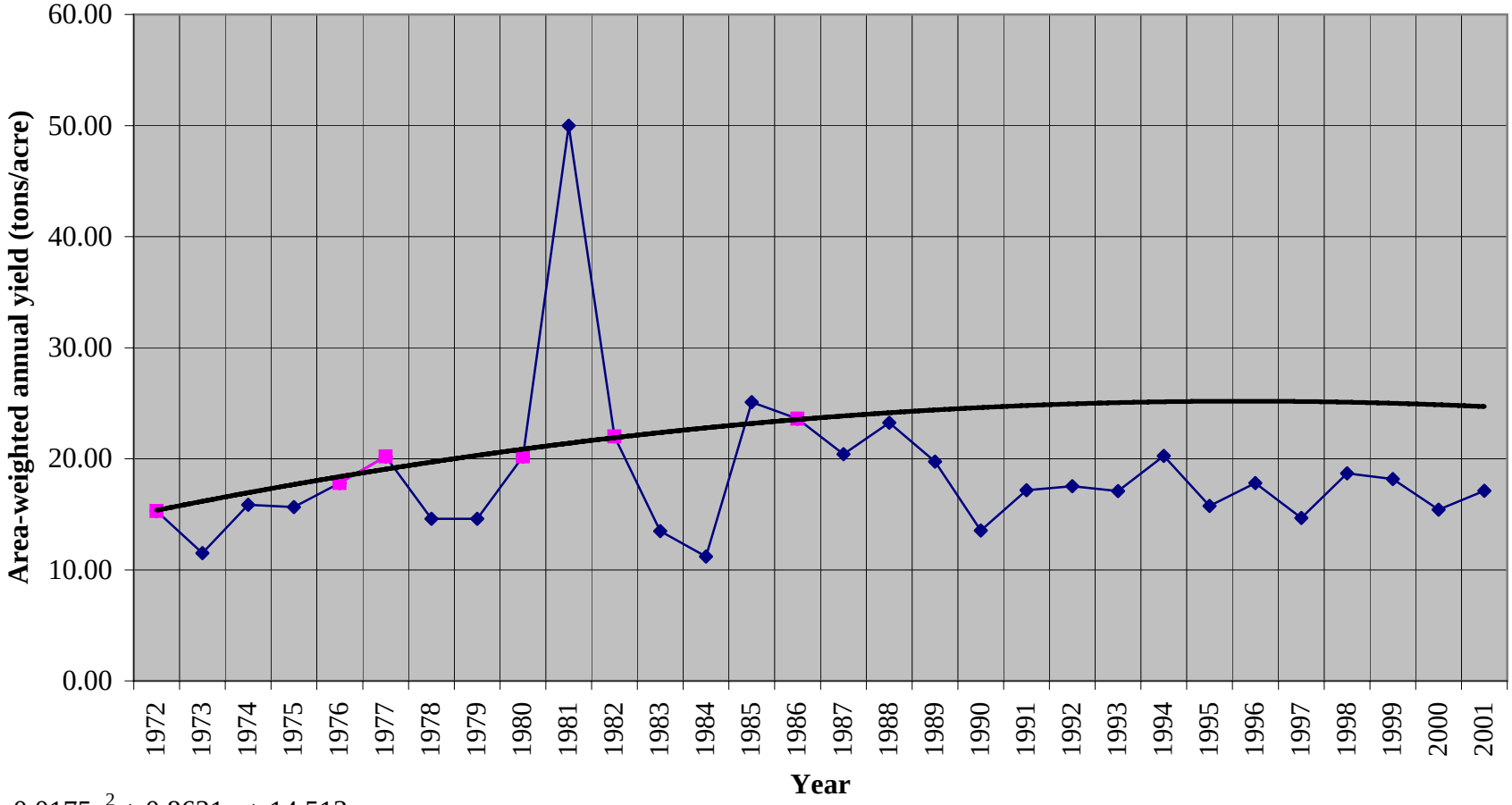


Figure 2.1.4.57.
Area-weighted annual spring wheat yields and Y_{env} polynomial trendline and equation
South Platte subbasin



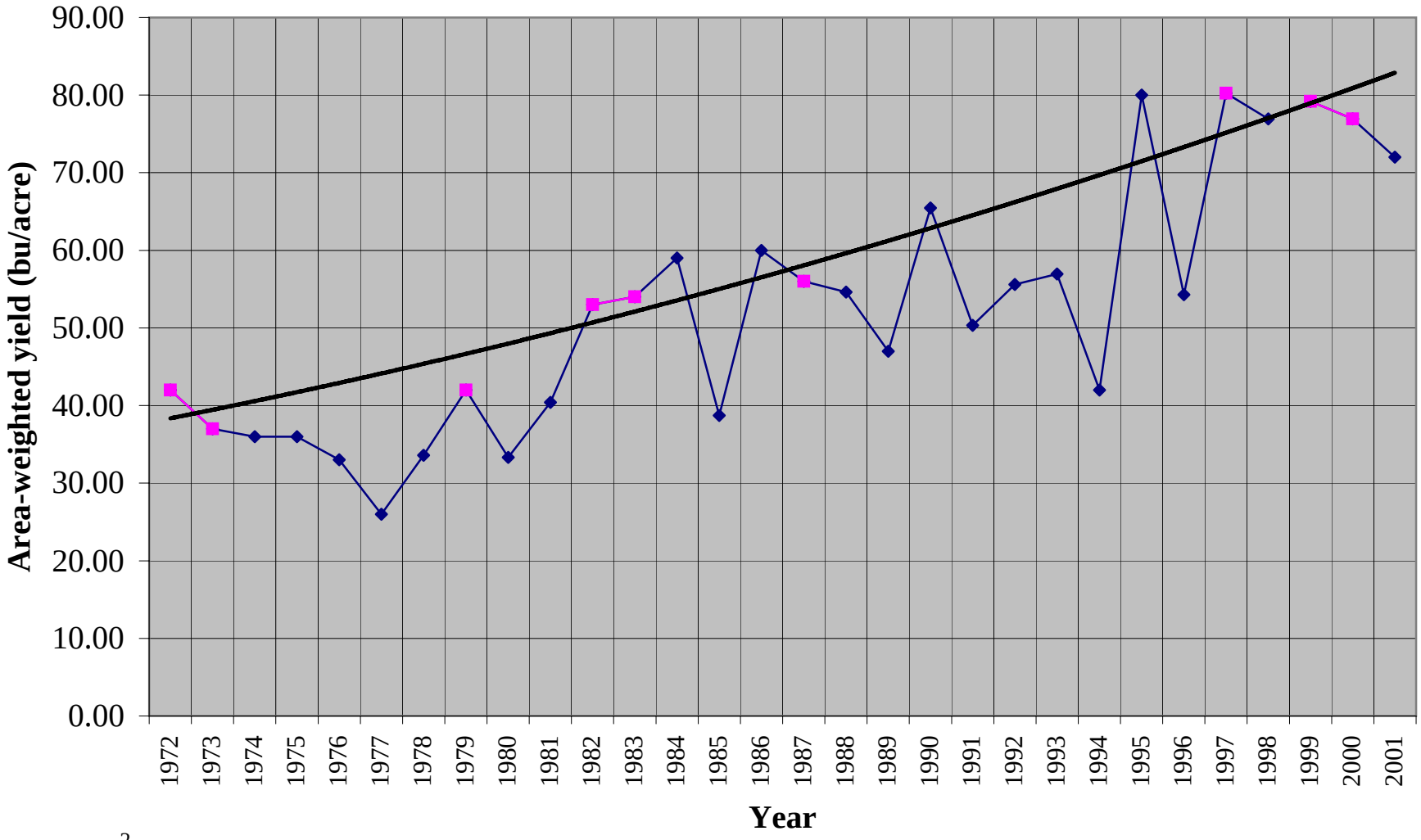
$y = -0.0223x^2 + 1.6967x + 38.023$

Figure 2.1.4.58.
Area-weighted annual sugar beets yields and Y_{env} polynomial trendline and equation
South Platte subbasin



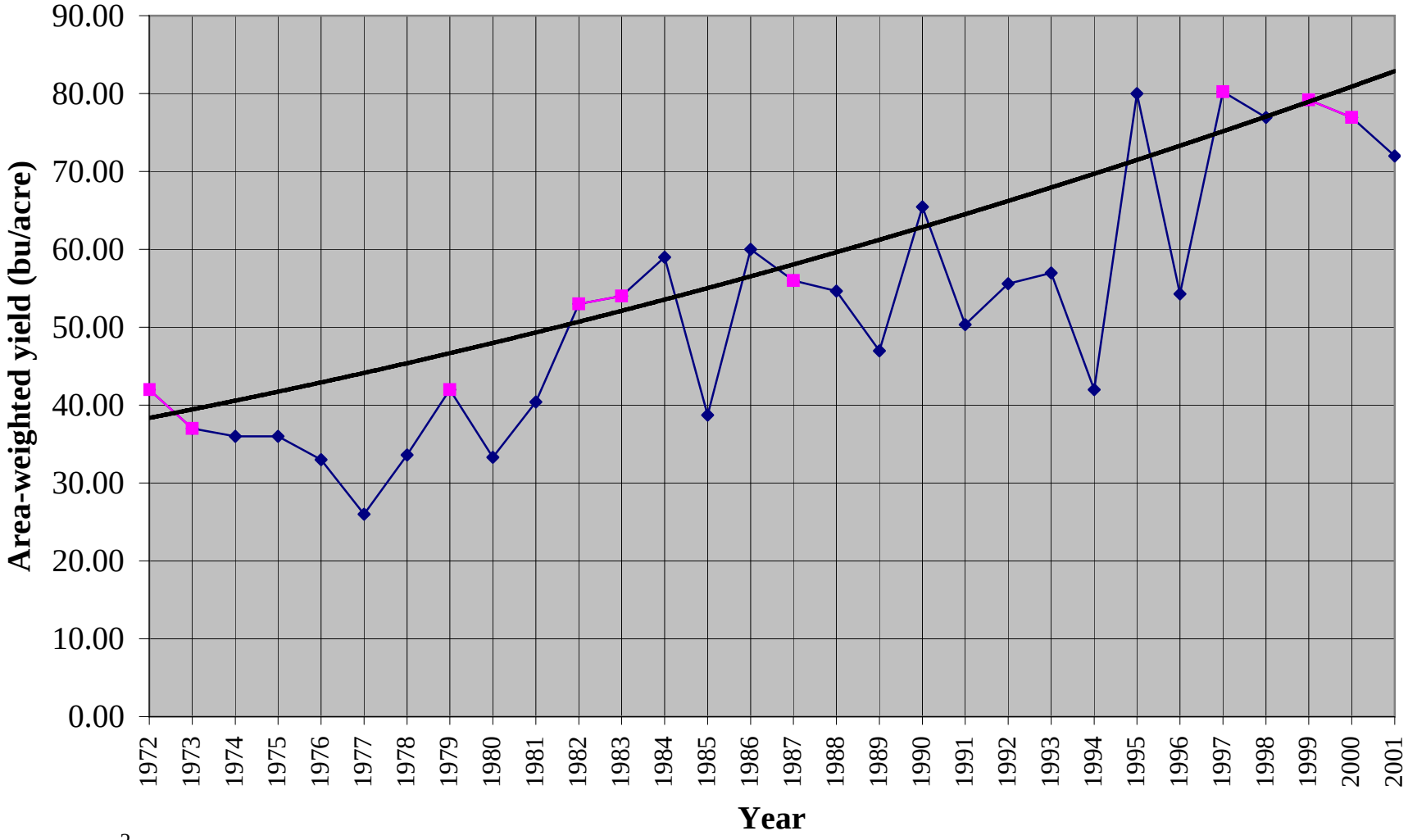
$y = -0.0175x^2 + 0.8631x + 14.513$

Figure 2.1.4.59.
Area-weighted winter wheat yields and Y_{env} polynomial trendline and equation
South Platte subbasin



$y = 0.0158x^2 + 1.0449x + 37.295$

Figure 2.1.4.60
Area-weighted winter wheat yields and Y_{env} polynomial trendline and equation
South Platte subbasin



$y = 0.0158x^2 + 1.0449x + 37.295$

Derivation of adjusted, yield-based crop evapotranspiration in the South Platte subbasin during high stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.84 and Figures 2.1.4.52 through 2.1.4.60 is summarized in Table 2.1.4.85.

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin

1986						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1986 - 1972 =		14			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.01	5.46	7.45	4.90	--	--
Average yield, Yi (bu/acre) (2)	60.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	47.93					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.01**	**5.46**	**7.45**	**4.90**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1986 - 1972 =		14			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.64	4.33	7.65	5.47	--	--
Average yield, Yi (bu/acre) (2)	57.50					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	57.41					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.64**	**4.33**	**7.65**	**5.47**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1986 - 1972 =		14			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.74	4.81	7.73	6.34	2.06	0.94
Average yield, Yi (bu/acre) (2)	74.05					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	70.81					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.74**	**4.81**	**7.73**	**6.34**	**2.06**	**0.94**

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1986 - 1972 =		14			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.74	4.81	7.73	6.34	2.06	0.94
Average yield, Yi (bu/acre) (2)	74.90					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	71.77					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.74**	**4.81**	**7.73**	**6.34**	**2.06**	**0.94**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1986 - 1972 =		14			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.93	1.23	5.75	8.40	3.50	0.94
Average yield, Yi (cwt/acre) (2)	17.80					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	19.80					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.85**	**1.12**	**5.24**	**7.66**	**3.19**	**0.86**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1986 - 1972 =		14			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.60	2.36	5.31	7.81	6.68	3.24
Average yield, Yi (tons/acre) (2)	23.60					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	23.17					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.60**	**2.36**	**5.31**	**7.81**	**6.68**	**3.24**

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1986 - 1972 =		14			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.93	1.95	7.46	8.90	6.12	1.57
Average yield, Yi (bu/acre) (2)	119.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	106.21					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.93**	**1.95**	**7.46**	**8.90**	**6.12**	**1.57**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1986 - 1972 =		14			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.61	5.06	5.76	7.45	3.39	1.89
Average yield, Yi (tons/acre) (2)	3.88					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.56					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.61**	**5.06**	**5.76**	**7.45**	**3.39**	**1.89**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1986 - 1972 =		14			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.87	3.45	6.76	7.76	4.16	2.80
Average yield, Yi (tons/acre) (2)	1.64					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.53					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.87**	**3.45**	**6.76**	**7.76**	**4.16**	**2.80**

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1986 - 1972 =		14			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.12	2.27	4.74	5.48	4.69	2.91
Average yield, Yi (2)	1.64					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.53					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.12**	**2.27**	**4.74**	**5.48**	**4.69**	**2.91**
1984						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1984 - 1972 =		12			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.54	5.95	7.04	4.80	--	--
Average yield, Yi (bu/acre) (2)	59.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	45.84					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**1.54**	**5.95**	**7.04**	**4.80**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1984 - 1972 =		12			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.25	4.72	7.22	5.36	--	--
Average yield, Yi (bu/acre) (2)	50.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	55.17					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.15**	**4.34**	**6.63**	**4.92**	**--**	**--**

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1984 - 1972 =		12			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.33	5.24	7.30	6.22	2.02	0.98
Average yield, Yi (bu/acre) (2)	69.80					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	69.69					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.33**	**5.24**	**7.30**	**6.22**	**2.02**	**0.98**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1984 - 1972 =		12			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.33	5.24	7.30	6.22	2.02	0.98
Average yield, Yi (bu/acre) (2)	64.35					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	70.47					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.23**	**4.84**	**6.75**	**5.75**	**1.87**	**0.91**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1984 - 1972 =		12			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.71	1.34	5.43	8.23	3.44	0.98
Average yield, Yi (cwt/acre) (2)	20.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	19.41					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**0.71**	**1.34**	**5.43**	**8.23**	**3.44**	**0.98**

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1984 - 1972 =		12			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.23	2.57	5.02	7.66	6.57	3.36
Average yield, Yi (tons/acre) (2)	11.20					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	22.35					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**0.70**	**1.46**	**2.84**	**4.34**	**3.72**	**1.90**
Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1984 - 1972 =		12			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.71	2.13	7.05	8.72	6.02	1.63
Average yield, Yi (bu/acre) (2)	97.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	102.80					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.68**	**2.03**	**6.73**	**8.33**	**5.75**	**1.56**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1984 - 1972 =		12			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.00	5.52	5.44	7.30	3.33	1.96
Average yield, Yi (tons/acre) (2)	3.39					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.51					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.93**	**5.34**	**5.26**	**7.06**	**3.22**	**1.90**

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1984 - 1972 =		12			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.43	3.76	6.38	7.61	4.09	2.90
Average yield, Yi (tons/acre) (2)	1.10					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.50					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.07**	**2.81**	**4.76**	**5.68**	**3.05**	**2.16**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1984 - 1972 =		12			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.86	2.47	4.47	5.37	4.61	3.02
Average yield, Yi (2)	1.10					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.50					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.64**	**1.84**	**3.33**	**4.01**	**3.44**	**2.25**
1985						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1985 - 1972 =		13			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.23	6.12	7.49	4.78	--	--
Average yield, Yi (bu/acre) (2)	38.73					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	53.55					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.69**	**4.65**	**5.69**	**3.63**	**--**	**--**

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin (cont)

Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1985 - 1972 =		13			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.82	4.85	7.68	5.34	--	--
Average yield, Yi (bu/acre) (2)	41.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	56.31					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.39**	**3.70**	**5.86**	**4.08**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1985 - 1972 =		13			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.93	5.38	7.77	6.19	2.17	0.94
Average yield, Yi (bu/acre) (2)	77.70					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	70.26					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.93**	**5.38**	**7.77**	**6.19**	**2.17**	**0.94**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1985 - 1972 =		13			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.93	5.38	7.77	6.19	2.17	0.94
Average yield, Yi (bu/acre) (2)	58.94					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	71.15					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.64**	**4.58**	**6.61**	**5.27**	**1.85**	**0.80**

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1985 - 1972 =		13			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.03	1.38	5.77	8.20	3.70	0.94
Average yield, Yi (cwt/acre) (2)	18.80					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	19.59					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.99**	**1.33**	**5.57**	**7.91**	**3.57**	**0.91**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1985 - 1972 =		13			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.78	2.64	5.34	7.62	7.05	3.24
Average yield, Yi (tons/acre) (2)	25.10					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	22.78					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.78**	**2.64**	**5.34**	**7.62**	**7.05**	**3.24**
Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1985 - 1972 =		13			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.03	2.19	7.50	8.68	6.47	1.57
Average yield, Yi (bu/acre) (2)	94.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	104.49					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.95**	**2.01**	**6.90**	**7.98**	**5.95**	**1.44**

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1985 - 1972 =		13			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.90	5.67	5.79	7.27	3.58	1.89
Average yield, Yi (tons/acre) (2)	3.21					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.54					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.64**	**5.17**	**5.28**	**6.62**	**3.26**	**1.72**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1985 - 1972 =		13			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.07	3.87	6.79	7.57	4.39	2.80
Average yield, Yi (tons/acre) (2)	1.38					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.51					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.90**	**3.55**	**6.23**	**6.95**	**4.03**	**2.57**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1985 - 1972 =		13			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.24	2.54	4.76	5.35	4.95	2.91
Average yield, Yi (2)	1.38					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.51					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.14**	**2.33**	**4.37**	**4.91**	**4.54**	**2.67**

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin (cont)

1973						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1973 - 1972 =		1			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.65	5.46	7.13	4.12	--	--
Average yield, Yi (bu/acre) (2)	37.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	37.92					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.62**	**5.34**	**6.98**	**4.03**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1973 - 1972 =		1			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.34	4.33	7.32	4.60	--	--
Average yield, Yi (bu/acre) (2)	35.40					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	39.70					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.21**	**3.92**	**6.63**	**4.17**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1973 - 1972 =		1			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.42	4.81	7.40	5.33	1.95	0.84
Average yield, Yi (bu/acre) (2)	62.88					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	60.88					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.42**	**4.81**	**7.40**	**5.33**	**1.95**	**0.84**

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1973 - 1972 =		1			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.42	4.81	7.40	5.33	1.95	0.84
Average yield, Yi (bu/acre) (2)	60.89					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	59.63					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.42**	**4.81**	**7.40**	**5.33**	**1.95**	**0.84**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1973 - 1972 =		1			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.76	1.23	5.50	7.06	3.32	0.84
Average yield, Yi (cwt/acre) (2)	18.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	18.75					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.73**	**1.19**	**5.31**	**6.81**	**3.20**	**0.81**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1973 - 1972 =		1			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.31	2.36	5.08	6.57	6.33	2.89
Average yield, Yi (tons/acre) (2)	11.50					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	15.36					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.02**	**1.84**	**3.97**	**5.13**	**4.95**	**2.26**

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1973 - 1972 =		1			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.76	1.95	7.14	7.48	5.80	1.40
Average yield, Yi (bu/acre) (2)	97.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	86.50					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.76**	**1.95**	**7.14**	**7.48**	**5.80**	**1.40**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1973 - 1972 =		1			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.14	5.06	5.51	6.26	3.21	1.68
Average yield, Yi (tons/acre) (2)	3.09					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.31					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.00**	**4.74**	**5.16**	**5.86**	**3.01**	**1.57**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1973 - 1972 =		1			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.53	3.45	6.47	6.53	3.94	2.49
Average yield, Yi (tons/acre) (2)	1.30					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.42					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.41**	**3.17**	**5.95**	**6.00**	**3.62**	**2.29**

Table 2.1.4.85 Summary – adjusted maximum crop evapotranspiration, ET_C - high stream flow years - South Platte subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1973 - 1972 =		1			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.92	2.27	4.53	4.61	4.44	2.59
Average yield, Yi (2)	1.30					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.42					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.85**	**2.09**	**4.17**	**4.24**	**4.08**	**2.38**
Notes:						
(1) See Table 2.1.4.46.						
(2) See Table 2.1.4.54. for area-weighted annual yields						
(3) See Table 2.1.4.53.						
(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture						
(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$						

Derivation of adjusted, yield-based crop evapotranspiration in the South Platte subbasin during low stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.84 and Figures 2.1.4.52 through 2.1.4.60 is summarized in Table 2.1.4.86.

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin

1972						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1972 - 1972 =		0			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.97	5.38	7.29	4.51	--	--
Average yield, Yi (bu/acre) (2)	42.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	37.30					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**1.97**	**5.38**	**7.29**	**4.51**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1972 - 1972 =		0			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.61	4.27	7.48	5.03	--	--
Average yield, Yi (bu/acre) (2)	35.88					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	38.02					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.53**	**4.06**	**7.11**	**4.78**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1972 - 1972 =		0			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.70	4.74	7.56	5.83	1.93	1.04
Average yield, Yi (bu/acre) (2)	66.82					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	59.86					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.70**	**4.74**	**7.56**	**5.83**	**1.93**	**1.04**

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1972 - 1972 =		0			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.70	4.74	7.56	5.83	1.93	1.04
Average yield, Yi (bu/acre) (2)	54.29					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	58.34					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.60**	**4.45**	**7.10**	**5.48**	**1.81**	**0.98**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1972 - 1972 =		0			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.91	1.21	5.62	7.72	3.28	1.04
Average yield, Yi (cwt/acre) (2)	18.30					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	18.82					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.89**	**1.18**	**5.48**	**7.53**	**3.20**	**1.02**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1972 - 1972 =		0			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.57	2.33	5.20	7.18	6.26	3.56
Average yield, Yi (tons/acre) (2)	15.30					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	14.51					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.57**	**2.33**	**5.20**	**7.18**	**6.26**	**3.56**

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1972 - 1972 =		0			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.91	1.93	7.30	8.18	5.74	1.73
Average yield, Yi (bu/acre) (2)	78.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	85.22					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.85**	**1.80**	**6.81**	**7.63**	**5.35**	**1.61**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1972 - 1972 =		0			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.56	4.99	5.64	6.85	3.18	2.07
Average yield, Yi (tons/acre) (2)	2.99					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.29					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.34**	**4.56**	**5.15**	**6.26**	**2.90**	**1.89**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1972 - 1972 =		0			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.83	3.40	6.61	7.14	3.90	3.07
Average yield, Yi (tons/acre) (2)	1.50					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.42					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.83**	**3.40**	**6.61**	**7.14**	**3.90**	**3.07**

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1972 - 1972 =		0			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.10	2.24	4.63	5.04	4.39	3.20
Average yield, Yi (2)	1.50					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.42					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.10**	**2.24**	**4.63**	**5.04**	**4.39**	**3.20**
1989						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1989 - 1972 =		17			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.12	5.77	6.67	5.12	--	--
Average yield, Yi (bu/acre) (2)	46.98					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	51.45					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.96**	**5.33**	**6.17**	**4.73**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1989 - 1972 =		17			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.73	4.58	6.84	5.71	--	--
Average yield, Yi (bu/acre) (2)	43.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	60.42					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.30**	**3.43**	**5.13**	**4.28**	**--**	**--**

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1989 - 1972 =		17			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.84	5.08	6.92	6.63	1.97	1.03
Average yield, Yi (bu/acre) (2)	63.71					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	72.21					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.65**	**4.56**	**6.21**	**5.95**	**1.77**	**0.92**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1989 - 1972 =		17			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.84	5.08	6.92	6.63	1.97	1.03
Average yield, Yi (bu/acre) (2)	62.97					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	73.34					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.61**	**4.46**	**6.07**	**5.81**	**1.73**	**0.90**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1989 - 1972 =		17			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.98	1.30	5.14	8.78	3.36	1.03
Average yield, Yi (cwt/acre) (2)	20.70					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	20.53					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**0.98**	**1.30**	**5.14**	**8.78**	**3.36**	**1.03**

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1989 - 1972 =		17			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.69	2.50	4.76	8.16	6.40	3.53
Average yield, Yi (tons/acre) (2)	19.75					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	24.13					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.42**	**2.11**	**4.01**	**6.87**	**5.39**	**2.97**
Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1989 - 1972 =		17			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.98	2.06	6.68	9.30	5.87	1.71
Average yield, Yi (bu/acre) (2)	102.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	111.56					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.91**	**1.92**	**6.22**	**8.66**	**5.47**	**1.59**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1989 - 1972 =		17			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.75	5.35	5.16	7.78	3.25	2.05
Average yield, Yi (tons/acre) (2)	4.41					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.65					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.75**	**5.35**	**5.16**	**7.78**	**3.25**	**2.05**

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1989 - 1972 =		17			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.97	3.65	6.05	8.11	3.99	3.04
Average yield, Yi (tons/acre) (2)	1.30					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.57					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.65**	**3.05**	**5.06**	**6.78**	**3.34**	**2.54**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1989 - 1972 =		17			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.18	2.40	4.24	5.73	4.49	3.17
Average yield, Yi (2)	1.30					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.57					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.99**	**2.01**	**3.55**	**4.79**	**3.75**	**2.65**
1990						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1990 - 1972 =		18			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.99	5.14	7.61	4.29	--	--
Average yield, Yi (bu/acre) (2)	65.45					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	52.72					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**1.99**	**5.14**	**7.61**	**4.29**	**--**	**--**

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin (cont)

Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1990 - 1972 =		18			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.62	4.07	7.81	4.79	--	--
Average yield, Yi (bu/acre) (2)	47.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	61.34					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.29**	**3.24**	**6.22**	**3.82**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1990 - 1972 =		18			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.72	4.52	7.90	5.55	2.02	1.11
Average yield, Yi (bu/acre) (2)	67.68					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	72.60					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.62**	**4.25**	**7.43**	**5.22**	**1.90**	**1.04**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1990 - 1972 =		18			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.72	4.52	7.90	5.55	2.02	1.11
Average yield, Yi (bu/acre) (2)	56.20					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	73.76					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.36**	**3.58**	**6.26**	**4.40**	**1.60**	**0.88**

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1990 - 1972 =		18			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.92	1.16	5.87	7.36	3.44	1.11
Average yield, Yi (cwt/acre) (2)	20.79					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	20.82					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.92**	**1.16**	**5.86**	**7.35**	**3.44**	**1.11**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1990 - 1972 =		18			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.59	2.22	5.43	6.84	6.56	3.83
Average yield, Yi (tons/acre) (2)	13.53					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	24.38					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**0.97**	**1.36**	**3.33**	**4.19**	**4.02**	**2.35**
Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1990 - 1972 =		18			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.92	1.84	7.63	7.79	6.01	1.86
Average yield, Yi (bu/acre) (2)	123.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	113.41					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.92**	**1.84**	**7.63**	**7.79**	**6.01**	**1.86**

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1990 - 1972 =		18			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.59	4.76	5.89	6.52	3.33	2.23
Average yield, Yi (tons/acre) (2)	3.48					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.68					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.46**	**4.51**	**5.59**	**6.18**	**3.16**	**2.11**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1990 - 1972 =		18			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.85	3.25	6.90	6.80	4.08	3.30
Average yield, Yi (tons/acre) (2)	1.53					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.59					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.78**	**3.13**	**6.65**	**6.56**	**3.93**	**3.18**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1990 - 1972 =		18			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.11	2.13	4.84	4.80	4.60	3.44
Average yield, Yi (2)	1.53					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.59					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.07**	**2.05**	**4.67**	**4.63**	**4.43**	**3.32**

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin (cont)

1992						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1992 - 1972 =		20			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.41	6.16	6.62	4.26	--	--
Average yield, Yi (bu/acre) (2)	55.59					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	64.51					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.12**	**5.42**	**5.82**	**3.75**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1992 - 1972 =		20			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.97	4.88	6.80	4.76	--	--
Average yield, Yi (bu/acre) (2)	73.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	63.04					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.97**	**4.88**	**6.80**	**4.76**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1992 - 1972 =		20			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.09	5.42	6.87	5.52	1.87	1.13
Average yield, Yi (bu/acre) (2)	74.84					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	73.28					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**2.09**	**5.42**	**6.87**	**5.52**	**1.87**	**1.13**

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1992 - 1972 =		20			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.09	5.42	6.87	5.52	1.87	1.13
Average yield, Yi (bu/acre) (2)	64.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	74.45					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.83**	**4.76**	**6.03**	**4.85**	**1.64**	**0.99**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1992 - 1972 =		20			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.12	1.39	5.11	7.31	3.19	1.13
Average yield, Yi (cwt/acre) (2)	15.56					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	21.45					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.85**	**1.06**	**3.89**	**5.56**	**2.43**	**0.86**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1992 - 1972 =		20			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.92	2.66	4.72	6.80	6.08	3.90
Average yield, Yi (tons/acre) (2)	17.53					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	24.78					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.43**	**1.98**	**3.52**	**5.07**	**4.53**	**2.91**

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1992 - 1972 =		20			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.12	2.20	6.64	7.74	5.58	1.89
Average yield, Yi (bu/acre) (2)	102.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	117.21					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.00**	**1.97**	**5.95**	**6.94**	**5.00**	**1.69**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1992 - 1972 =		20			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.13	5.71	5.12	6.48	3.09	2.27
Average yield, Yi (tons/acre) (2)	3.68					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.75					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**3.07**	**5.61**	**5.03**	**6.36**	**3.04**	**2.23**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1992 - 1972 =		20			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.24	3.90	6.01	6.75	3.79	3.36
Average yield, Yi (tons/acre) (2)	1.29					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.62					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.81**	**3.14**	**4.84**	**5.44**	**3.05**	**2.71**

Table 2.1.4.86 Summary – adjusted maximum crop evapotranspiration, ET_C - low stream flow years - South Platte subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1992 - 1972 =		20			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.34	2.56	4.21	4.77	4.27	3.50
Average yield, Yi (2)	1.29					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.62					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.08**	**2.06**	**3.39**	**3.84**	**3.44**	**2.82**
Notes:						
(1) See Table 2.1.4.46.						
(2) See Table 2.1.4.54. for area-weighted annual yields						
(3) See Table 2.1.4.53.						
(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture						
(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$						

Derivation of adjusted, yield-based crop evapotranspiration in the South Platte subbasin during normal or average stream flow years using $Y_{env(C)}$ values based on equations from Table 2.1.4.84 and Figures 2.1.4.52 through 2.1.4.60 is summarized in Table 2.1.4.87.

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin

1974						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1974 - 1972 =		2			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.84	5.76	6.75	4.56	--	--
Average yield, Yi (bu/acre) (2)	36.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	39.45					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.70**	**5.32**	**6.24**	**4.21**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1974 - 1972 =		2			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.50	4.57	6.93	5.09	--	--
Average yield, Yi (bu/acre) (2)	41.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	41.33					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.49**	**4.54**	**6.88**	**5.05**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1974 - 1972 =		2			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.59	5.07	7.00	5.90	1.87	0.93
Average yield, Yi (bu/acre) (2)	53.04					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	61.87					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.39**	**4.44**	**6.13**	**5.17**	**1.64**	**0.81**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1974 - 1972 =		2			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.59	5.07	7.00	5.90	1.87	0.93
Average yield, Yi (bu/acre) (2)	62.76					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	60.87					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.59**	**5.07**	**7.00**	**5.90**	**1.87**	**0.93**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1974 - 1972 =		2			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.85	1.30	5.21	7.82	3.18	0.93
Average yield, Yi (cwt/acre) (2)	19.90					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	18.71					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**0.85**	**1.30**	**5.21**	**7.82**	**3.18**	**0.93**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1974 - 1972 =		2			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.46	2.49	4.81	7.27	6.06	3.20
Average yield, Yi (tons/acre) (2)	15.86					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	16.17					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.44**	**2.45**	**4.73**	**7.15**	**5.96**	**3.15**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1974 - 1972 =		2			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.85	2.06	6.76	8.28	5.56	1.55
Average yield, Yi (bu/acre) (2)	101.25					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	87.82					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.85**	**2.06**	**6.76**	**8.28**	**5.56**	**1.55**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1974 - 1972 =		2			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.38	5.34	5.22	6.93	3.07	1.86
Average yield, Yi (tons/acre) (2)	3.59					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.32					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.38**	**5.34**	**5.22**	**6.93**	**3.07**	**1.86**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1974 - 1972 =		2			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.70	3.64	6.12	7.22	3.77	2.76
Average yield, Yi (tons/acre) (2)	1.40					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.43					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.67**	**3.57**	**6.00**	**7.08**	**3.69**	**2.70**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1974 - 1972 =		2			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.02	2.39	4.29	5.10	4.25	2.87
Average yield, Yi (2)	1.40					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.43					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.00**	**2.34**	**4.20**	**5.00**	**4.17**	**2.81**
1983						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1983 - 1972 =		11			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.56	4.74	6.28	4.82	--	--
Average yield, Yi (bu/acre) (2)	54.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	44.87					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**1.56**	**4.74**	**6.28**	**4.82**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1983 - 1972 =		11			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.27	3.76	6.44	5.38	--	--
Average yield, Yi (bu/acre) (2)	60.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	53.99					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.27**	**3.76**	**6.44**	**5.38**	**--**	**--**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1983 - 1972 =		11			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.34	4.17	6.51	6.24	2.18	1.15
Average yield, Yi (bu/acre) (2)	71.24					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	69.07					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.34**	**4.17**	**6.51**	**6.24**	**2.18**	**1.15**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1983 - 1972 =		11			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.34	4.17	6.51	6.24	2.18	1.15
Average yield, Yi (bu/acre) (2)	64.01					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	69.74					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.24**	**3.87**	**6.04**	**5.79**	**2.02**	**1.07**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1983 - 1972 =		11			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.72	1.07	4.84	8.27	3.70	1.15
Average yield, Yi (cwt/acre) (2)	16.70					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	19.25					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.64**	**0.95**	**4.28**	**7.32**	**3.27**	**1.02**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1983 - 1972 =		11			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.24	2.05	4.48	7.69	7.06	3.94
Average yield, Yi (tons/acre) (2)	13.50					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	21.89					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**0.83**	**1.37**	**2.99**	**5.13**	**4.71**	**2.63**
Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1983 - 1972 =		11			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.72	1.70	6.29	8.76	6.48	1.91
Average yield, Yi (bu/acre) (2)	101.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	101.15					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.72**	**1.70**	**6.28**	**8.75**	**6.47**	**1.91**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1983 - 1972 =		11			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.02	4.39	4.85	7.33	3.58	2.29
Average yield, Yi (tons/acre) (2)	3.49					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.49					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.02**	**4.39**	**4.85**	**7.33**	**3.58**	**2.29**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1983 - 1972 =		11			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.44	3.00	5.69	7.64	4.40	3.40
Average yield, Yi (tons/acre) (2)	1.40					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.49					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.36**	**2.83**	**5.36**	**7.20**	**4.15**	**3.20**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1983 - 1972 =		11			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.86	1.97	3.99	5.40	4.96	3.54
Average yield, Yi (2)	1.40					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.49					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.81**	**1.86**	**3.76**	**5.09**	**4.67**	**3.34**
1988						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1988 - 1972 =		16			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.17	5.72	7.92	4.97	--	--
Average yield, Yi (bu/acre) (2)	54.63					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	58.06					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.06**	**5.43**	**7.51**	**4.71**	**--**	**--**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1988 - 1972 =		16			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.77	4.53	8.13	5.55	--	--
Average yield, Yi (bu/acre) (2)	52.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	59.46					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.58**	**4.04**	**7.24**	**4.94**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1988 - 1972 =		16			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.88	5.03	8.22	6.44	2.15	1.07
Average yield, Yi (bu/acre) (2)	41.67					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	71.78					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.19**	**3.20**	**5.22**	**4.09**	**1.37**	**0.68**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1988 - 1972 =		16			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.88	5.03	8.22	6.44	2.15	1.07
Average yield, Yi (bu/acre) (2)	34.60					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	72.87					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.02**	**2.73**	**4.47**	**3.50**	**1.17**	**0.58**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1988 - 1972 =		16			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.01	1.29	6.11	8.53	3.65	1.07
Average yield, Yi (cwt/acre) (2)	17.53					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	20.27					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.89**	**1.14**	**5.39**	**7.53**	**3.22**	**0.94**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1988 - 1972 =		16			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.73	2.47	5.65	7.93	6.96	3.67
Average yield, Yi (tons/acre) (2)	23.25					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	23.84					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.69**	**2.42**	**5.53**	**7.76**	**6.81**	**3.59**
Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1988 - 1972 =		16			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.01	2.04	7.94	9.03	6.39	1.78
Average yield, Yi (bu/acre) (2)	127.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	109.74					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.01**	**2.04**	**7.94**	**9.03**	**6.39**	**1.78**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1988 - 1972 =		16			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.82	5.30	6.13	7.56	3.53	2.14
Average yield, Yi (tons/acre) (2)	3.66					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.62					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month) (5)	**2.82**	**5.30**	**6.13**	**7.56**	**3.53**	**2.14**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1988 - 1972 =		16			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.01	3.62	7.19	7.88	4.34	3.17
Average yield, Yi (tons/acre) (2)	1.16					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.56					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.52**	**2.74**	**5.43**	**5.96**	**3.28**	**2.40**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1988 - 1972 =		16			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.21	2.37	5.04	5.57	4.89	3.30
Average yield, Yi (2)	1.16					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.56					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.91**	**1.79**	**3.81**	**4.21**	**3.70**	**2.49**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

1982						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1982 - 1972 =		10			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.10	5.26	6.50	4.71	--	--
Average yield, Yi (bu/acre) (2)	53.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	49.32					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month) (5)	**2.10**	**5.26**	**6.50**	**4.71**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1982 - 1972 =		10			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.71	4.17	6.67	5.26	--	--
Average yield, Yi (bu/acre) (2)	58.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	52.76					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.71**	**4.17**	**6.67**	**5.26**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1982 - 1972 =		10			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.81	4.63	6.74	6.10	2.07	0.97
Average yield, Yi (bu/acre) (2)	56.37					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	68.42					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.53**	**3.92**	**5.71**	**5.17**	**1.75**	**0.82**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1982 - 1972 =		10			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.81	4.63	6.74	6.10	2.07	0.97
Average yield, Yi (bu/acre) (2)	79.28					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	68.96					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.81**	**4.63**	**6.74**	**6.10**	**2.07**	**0.97**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1982 - 1972 =		10			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.97	1.19	5.01	8.08	3.53	0.97
Average yield, Yi (cwt/acre) (2)	16.60					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	19.10					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.86**	**1.05**	**4.44**	**7.16**	**3.13**	**0.86**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1982 - 1972 =		10			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.67	2.28	4.63	7.51	6.73	3.33
Average yield, Yi (tons/acre) (2)	22.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	21.39					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.67**	**2.28**	**4.63**	**7.51**	**6.73**	**3.33**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1982 - 1972 =		10			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.97	1.88	6.51	8.56	6.18	1.61
Average yield, Yi (bu/acre) (2)	95.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	99.54					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.93**	**1.81**	**6.27**	**8.25**	**5.95**	**1.55**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1982 - 1972 =		10			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.72	4.88	5.02	7.16	3.41	1.94
Average yield, Yi (tons/acre) (2)	3.34					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.46					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.63**	**4.72**	**4.85**	**6.92**	**3.30**	**1.88**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1982 - 1972 =		10			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.94	3.33	5.89	7.47	4.19	2.87
Average yield, Yi (tons/acre) (2)	1.03					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.48					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.38**	**2.37**	**4.18**	**5.31**	**2.98**	**2.04**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1982 - 1972 =		10			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.16	2.19	4.13	5.27	4.72	2.99
Average yield, Yi (2)	1.03					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.48					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.82**	**1.56**	**2.93**	**3.74**	**3.35**	**2.12**
1987						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1987 - 1972 =		15			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.42	5.35	7.38	4.89	--	--
Average yield, Yi (bu/acre) (2)	56.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	56.52					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.40**	**5.31**	**7.32**	**4.85**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1987 - 1972 =		15			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.97	4.24	7.58	5.45	--	--
Average yield, Yi (bu/acre) (2)	42.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	58.46					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.49**	**3.20**	**5.72**	**4.12**	**--**	**--**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1987 - 1972 =		15			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.09	4.71	7.66	6.32	1.89	1.08
Average yield, Yi (bu/acre) (2)	76.97					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	71.31					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**2.09**	**4.71**	**7.66**	**6.32**	**1.89**	**1.08**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1987 - 1972 =		15			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.09	4.71	7.66	6.32	1.89	1.08
Average yield, Yi (bu/acre) (2)	85.03					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	72.35					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**2.09**	**4.71**	**7.66**	**6.32**	**1.89**	**1.08**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1987 - 1972 =		15			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.12	1.21	5.69	8.38	3.22	1.08
Average yield, Yi (cwt/acre) (2)	18.56					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	20.02					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**1.05**	**1.13**	**5.33**	**7.85**	**3.02**	**1.01**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1987 - 1972 =		15			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.93	2.31	5.26	7.79	6.14	3.72
Average yield, Yi (tons/acre) (2)	20.40					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	23.52					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.71**	**2.04**	**4.65**	**6.89**	**5.43**	**3.29**
Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1987 - 1972 =		15			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.12	1.91	7.40	8.87	5.63	1.81
Average yield, Yi (bu/acre) (2)	112.11					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	107.96					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**1.12**	**1.91**	**7.40**	**8.87**	**5.63**	**1.81**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1987 - 1972 =		15			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.14	4.96	5.71	7.43	3.11	2.17
Average yield, Yi (tons/acre) (2)	3.12					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.59					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.75**	**4.34**	**5.00**	**6.50**	**2.72**	**1.90**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1987 - 1972 =		15			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.24	3.38	6.70	7.74	3.82	3.21
Average yield, Yi (tons/acre) (2)	1.98					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.54					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**2.24**	**3.38**	**6.70**	**7.74**	**3.82**	**3.21**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1987 - 1972 =		15			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.34	2.22	4.69	5.47	4.31	3.34
Average yield, Yi (2)	1.98					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.54					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.34**	**2.22**	**4.69**	**5.47**	**4.31**	**3.34**
1979						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1979 - 1972 =		7			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.07	4.65	6.69	4.73	--	--
Average yield, Yi (bu/acre) (2)	42.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	45.38					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.94**	**4.35**	**6.26**	**4.42**	**--**	**--**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1979 - 1972 =		7			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.69	3.69	6.87	5.27	--	--
Average yield, Yi (bu/acre) (2)	50.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	48.81					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month) (5)	**1.69**	**3.69**	**6.87**	**5.27**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1979 - 1972 =		7			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.79	4.09	6.94	6.12	1.95	1.19
Average yield, Yi (bu/acre) (2)	50.81					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	66.24					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.43**	**3.26**	**5.53**	**4.88**	**1.56**	**0.95**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1979 - 1972 =		7			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.79	4.09	6.94	6.12	1.95	1.19
Average yield, Yi (bu/acre) (2)	48.19					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	66.31					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.36**	**3.12**	**5.29**	**4.67**	**1.49**	**0.91**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1979 - 1972 =		7			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.96	1.05	5.16	8.10	3.31	1.19
Average yield, Yi (cwt/acre) (2)	18.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	18.80					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.92**	**1.01**	**4.97**	**7.80**	**3.19**	**1.15**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1979 - 1972 =		7			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.65	2.01	4.77	7.54	6.31	4.09
Average yield, Yi (tons/acre) (2)	14.60					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	19.70					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.28**	**1.56**	**3.70**	**5.84**	**4.89**	**3.17**
Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1979 - 1972 =		7			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.96	1.66	6.70	8.58	5.79	1.98
Average yield, Yi (bu/acre) (2)	75.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	94.89					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.80**	**1.38**	**5.58**	**7.14**	**4.82**	**1.65**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1979 - 1972 =		7			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.68	4.31	5.17	7.19	3.20	2.38
Average yield, Yi (tons/acre) (2)	2.90					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.40					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.30**	**3.71**	**4.45**	**6.18**	**2.75**	**2.05**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1979 - 1972 =		7			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.92	2.94	6.07	7.49	3.93	3.52
Average yield, Yi (tons/acre) (2)	1.37					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.45					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.82**	**2.79**	**5.75**	**7.10**	**3.72**	**3.34**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1979 - 1972 =		7			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.15	1.93	4.25	5.29	4.43	3.67
Average yield, Yi (2)	1.37					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.45					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.09**	**1.83**	**4.03**	**5.01**	**4.20**	**3.48**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

1976						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1976 - 1972 =		4			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.85	5.09	6.68	4.62	--	--
Average yield, Yi (bu/acre) (2)	33.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	41.73					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.51**	**4.16**	**5.46**	**3.78**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1976 - 1972 =		4			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.51	4.04	6.86	5.16	--	--
Average yield, Yi (bu/acre) (2)	35.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	44.45					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.23**	**3.29**	**5.59**	**4.21**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1976 - 1972 =		4			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.60	4.48	6.93	5.98	1.88	0.99
Average yield, Yi (bu/acre) (2)	58.83					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	63.73					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.49**	**4.18**	**6.47**	**5.58**	**1.75**	**0.92**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1976 - 1972 =		4			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.60	4.48	6.93	5.98	1.88	0.99
Average yield, Yi (bu/acre) (2)	62.93					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	63.20					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.59**	**4.46**	**6.90**	**5.96**	**1.87**	**0.99**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1976 - 1972 =		4			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.86	1.15	5.15	7.93	3.20	0.99
Average yield, Yi (cwt/acre) (2)	16.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	18.68					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.75**	**1.01**	**4.51**	**6.94**	**2.80**	**0.87**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1976 - 1972 =		4			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.47	2.20	4.76	7.37	6.11	3.41
Average yield, Yi (tons/acre) (2)	23.60					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	17.69					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.47**	**2.20**	**4.76**	**7.37**	**6.11**	**3.41**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1976 - 1972 =		4			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.86	1.82	6.69	8.40	5.60	1.65
Average yield, Yi (bu/acre) (2)	94.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	90.55					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.86**	**1.82**	**6.69**	**8.40**	**5.60**	**1.65**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1976 - 1972 =		4			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.40	4.72	5.17	7.03	3.10	1.98
Average yield, Yi (tons/acre) (2)	2.51					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.35					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.83**	**3.59**	**3.94**	**5.35**	**2.36**	**1.51**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1976 - 1972 =		4			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.72	3.22	6.06	7.32	3.80	2.94
Average yield, Yi (tons/acre) (2)	0.70					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.43					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**0.88**	**1.65**	**3.11**	**3.76**	**1.95**	**1.51**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1976 - 1972 =		4			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.03	2.12	4.25	5.17	4.28	3.06
Average yield, Yi (2)	0.70					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.43					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.53**	**1.09**	**2.18**	**2.66**	**2.20**	**1.57**
1980						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1980 - 1972 =		8			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.94	5.09	8.26	5.15	--	--
Average yield, Yi (bu/acre) (2)	33.31					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	46.67					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.46**	**3.82**	**6.20**	**3.87**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1980 - 1972 =		8			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.58	4.04	8.47	5.75	--	--
Average yield, Yi (bu/acre) (2)	34.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	50.17					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.14**	**2.91**	**6.10**	**4.14**	**--**	**--**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1980 - 1972 =		8			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.68	4.48	8.57	6.67	2.10	1.17
Average yield, Yi (bu/acre) (2)	49.70					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	67.00					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.30**	**3.47**	**6.65**	**5.17**	**1.63**	**0.91**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1980 - 1972 =		8			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.68	4.48	8.57	6.67	2.10	1.17
Average yield, Yi (bu/acre) (2)	68.89					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	67.25					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.68**	**4.48**	**8.57**	**6.67**	**2.10**	**1.17**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1980 - 1972 =		8			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.90	1.15	6.37	8.84	3.58	1.17
Average yield, Yi (cwt/acre) (2)	20.70					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	18.88					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**0.90**	**1.15**	**6.37**	**8.84**	**3.58**	**1.17**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1980 - 1972 =		8			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.54	2.20	5.89	8.22	6.82	4.01
Average yield, Yi (tons/acre) (2)	20.20					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	20.30					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.53**	**2.19**	**5.86**	**8.18**	**6.79**	**3.99**
Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1980 - 1972 =		8			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.90	1.82	8.27	9.36	6.26	1.94
Average yield, Yi (bu/acre) (2)	95.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	96.41					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.89**	**1.80**	**8.17**	**9.25**	**6.19**	**1.92**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1980 - 1972 =		8			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.52	4.72	6.38	7.84	3.46	2.33
Average yield, Yi (tons/acre) (2)	2.89					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.42					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.15**	**4.02**	**5.44**	**6.68**	**2.95**	**1.99**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1980 - 1972 =		8			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.80	3.22	7.49	8.16	4.25	3.46
Average yield, Yi (tons/acre) (2)	1.10					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.46					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.38**	**2.46**	**5.73**	**6.24**	**3.25**	**2.65**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1980 - 1972 =		8			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.08	2.12	5.25	5.77	4.79	3.60
Average yield, Yi (2)	1.10					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.46					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.83**	**1.62**	**4.02**	**4.42**	**3.67**	**2.75**
1977						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1977 - 1972 =		5			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.98	5.43	7.16	4.42	--	--
Average yield, Yi (bu/acre) (2)	26.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	42.91					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.30**	**3.57**	**4.71**	**2.91**	**--**	**--**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1977 - 1972 =		5			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.61	4.30	7.35	4.93	--	--
Average yield, Yi (bu/acre) (2)	33.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	45.95					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.22**	**3.25**	**5.55**	**3.72**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1977 - 1972 =		5			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.71	4.78	7.43	5.72	1.72	1.11
Average yield, Yi (bu/acre) (2)	39.10					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	64.60					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.12**	**3.14**	**4.88**	**3.76**	**1.13**	**0.73**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1977 - 1972 =		5			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.71	4.78	7.43	5.72	1.72	1.11
Average yield, Yi (bu/acre) (2)	34.18					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	64.29					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.01**	**2.83**	**4.40**	**3.39**	**1.02**	**0.66**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1977 - 1972 =		5			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.92	1.22	5.53	7.57	2.93	1.11
Average yield, Yi (cwt/acre) (2)	17.60					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	18.70					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.87**	**1.16**	**5.25**	**7.18**	**2.78**	**1.05**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1977 - 1972 =		5			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.57	2.35	5.11	7.04	5.59	3.81
Average yield, Yi (tons/acre) (2)	20.20					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	18.39					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.57**	**2.35**	**5.11**	**7.04**	**5.59**	**3.81**
Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1977 - 1972 =		5			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.92	1.94	7.18	8.02	5.13	1.85
Average yield, Yi (bu/acre) (2)	95.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	91.96					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month) (5)	**0.92**	**1.94**	**7.18**	**8.02**	**5.13**	**1.85**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1977 - 1972 =		5			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.57	5.03	5.54	6.71	2.83	2.22
Average yield, Yi (tons/acre) (2)	2.79					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.36					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.15**	**4.22**	**4.64**	**5.63**	**2.37**	**1.86**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1977 - 1972 =		5			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.83	3.43	6.50	7.00	3.48	3.29
Average yield, Yi (tons/acre) (2)	0.70					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.44					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**0.93**	**1.75**	**3.32**	**3.57**	**1.78**	**1.68**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1977 - 1972 =		5			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.10	2.25	4.55	4.94	3.92	3.42
Average yield, Yi (2)	0.70					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.44					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.56**	**1.15**	**2.32**	**2.52**	**2.00**	**1.75**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

1978						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1978 - 1972 =		6			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.93	4.68	6.98	4.69	--	--
Average yield, Yi (bu/acre) (2)	33.59					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	44.13					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.53**	**3.71**	**5.53**	**3.72**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1978 - 1972 =		6			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.57	3.71	7.16	5.23	--	--
Average yield, Yi (bu/acre) (2)	33.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	47.40					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.16**	**2.73**	**5.27**	**3.85**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1978 - 1972 =		6			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.67	4.12	7.24	6.06	1.90	1.07
Average yield, Yi (bu/acre) (2)	61.01					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	65.44					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.57**	**3.88**	**6.81**	**5.70**	**1.79**	**1.01**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1978 - 1972 =		6			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.67	4.12	7.24	6.06	1.90	1.07
Average yield, Yi (bu/acre) (2)	75.83					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	65.33					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month) (5)	**1.67**	**4.12**	**7.24**	**6.06**	**1.90**	**1.07**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1978 - 1972 =		6			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.89	1.06	5.38	8.03	3.23	1.07
Average yield, Yi (cwt/acre) (2)	14.30					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	18.74					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.71**	**0.84**	**4.27**	**6.38**	**2.56**	**0.85**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1978 - 1972 =		6			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.54	2.03	4.98	7.47	6.16	3.68
Average yield, Yi (tons/acre) (2)	14.60					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	19.06					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.23**	**1.62**	**3.97**	**5.95**	**4.91**	**2.93**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1978 - 1972 =		6			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.89	1.68	6.99	8.51	5.65	1.78
Average yield, Yi (bu/acre) (2)	66.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	93.41					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.68**	**1.29**	**5.35**	**6.51**	**4.32**	**1.36**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1978 - 1972 =		6			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.50	4.34	5.40	7.12	3.12	2.14
Average yield, Yi (tons/acre) (2)	2.50					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.38					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.88**	**3.26**	**4.06**	**5.35**	**2.35**	**1.61**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1978 - 1972 =		6			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.79	2.96	6.33	7.42	3.84	3.18
Average yield, Yi (tons/acre) (2)	0.90					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.45					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.14**	**1.89**	**4.04**	**4.74**	**2.45**	**2.03**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1978 - 1972 =		6			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.07	1.95	4.44	5.24	4.32	3.30
Average yield, Yi (2)	0.90					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.45					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.68**	**1.25**	**2.84**	**3.35**	**2.76**	**2.11**
1981						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1981 - 1972 =		9			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	2.45	4.93	7.59	4.71	--	--
Average yield, Yi (bu/acre) (2)	40.41					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	47.98					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**2.11**	**4.25**	**6.55**	**4.06**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1981 - 1972 =		9			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.99	3.91	7.79	5.25	--	--
Average yield, Yi (bu/acre) (2)	36.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	51.49					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.47**	**2.89**	**5.75**	**3.88**	**--**	**--**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1981 - 1972 =		9			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	2.12	4.34	7.87	6.09	1.96	1.14
Average yield, Yi (bu/acre) (2)	48.94					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	67.73					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.61**	**3.29**	**5.97**	**4.62**	**1.49**	**0.86**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1981 - 1972 =		9			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	2.12	4.34	7.87	6.09	1.96	1.14
Average yield, Yi (bu/acre) (2)	66.76					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	68.13					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**2.08**	**4.26**	**7.73**	**5.98**	**1.93**	**1.12**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1981 - 1972 =		9			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	1.13	1.11	5.85	8.07	3.34	1.14
Average yield, Yi (cwt/acre) (2)	20.60					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	18.98					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month) (5)	**1.13**	**1.11**	**5.85**	**8.07**	**3.34**	**1.14**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1981 - 1972 =		9			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.95	2.13	5.41	7.50	6.36	3.91
Average yield, Yi (tons/acre) (2)	50.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	20.86					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month) (5)	**1.95**	**2.13**	**5.41**	**7.50**	**6.36**	**3.91**
Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1981 - 1972 =		9			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	1.13	1.76	7.60	8.55	5.83	1.90
Average yield, Yi (bu/acre) (2)	90.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	97.96					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**1.06**	**1.65**	**7.11**	**7.99**	**5.45**	**1.78**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1981 - 1972 =		9			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	3.18	4.57	5.87	7.15	3.23	2.28
Average yield, Yi (tons/acre) (2)	2.80					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.44					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.62**	**3.76**	**4.83**	**5.88**	**2.66**	**1.88**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1981 - 1972 =		9			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	2.27	3.12	6.88	7.45	3.96	3.38
Average yield, Yi (tons/acre) (2)	1.20					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.47					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.87**	**2.57**	**5.68**	**6.15**	**3.27**	**2.79**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1981 - 1972 =		9			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.36	2.05	4.82	5.27	4.46	3.51
Average yield, Yi (2)	1.20					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.47					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**1.12**	**1.69**	**3.98**	**4.35**	**3.68**	**2.90**
1975						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1975 - 1972 =		3			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.67	4.70	6.42	4.39	--	--
Average yield, Yi (bu/acre) (2)	36.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	40.57					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.51**	**4.24**	**5.79**	**3.96**	**--**	**--**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1975 - 1972 =		3			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.36	3.72	6.58	4.90	--	--
Average yield, Yi (bu/acre) (2)	35.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	42.91					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.14**	**3.12**	**5.53**	**4.11**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1975 - 1972 =		3			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.44	4.13	6.66	5.68	2.02	1.00
Average yield, Yi (bu/acre) (2)	58.61					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	62.82					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month)	**1.36**	**3.89**	**6.27**	**5.35**	**1.90**	**0.94**
Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1975 - 1972 =		3			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.44	4.13	6.66	5.68	2.02	1.00
Average yield, Yi (bu/acre) (2)	49.03					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	62.06					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.18**	**3.38**	**5.44**	**4.64**	**1.65**	**0.82**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1975 - 1972 =		3			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.77	1.06	4.95	7.52	3.43	1.00
Average yield, Yi (cwt/acre) (2)	17.60					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	18.69					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.73**	**1.01**	**4.70**	**7.14**	**3.26**	**0.95**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1975 - 1972 =		3			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.33	2.03	4.58	7.00	6.55	3.45
Average yield, Yi (tons/acre) (2)	15.64					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	16.94					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.24**	**1.89**	**4.27**	**6.53**	**6.11**	**3.22**
Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1975 - 1972 =		3			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.77	1.68	6.43	7.97	6.00	1.67
Average yield, Yi (bu/acre) (2)	66.00					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	89.16					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.61**	**1.33**	**5.09**	**6.31**	**4.75**	**1.32**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1975 - 1972 =		3			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.17	4.35	4.96	6.67	3.32	2.01
Average yield, Yi (tons/acre) (2)	2.79					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.33					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**1.83**	**3.68**	**4.19**	**5.64**	**2.81**	**1.70**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1975 - 1972 =		3			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.55	2.97	5.82	6.95	4.08	2.98
Average yield, Yi (tons/acre) (2)	1.04					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.43					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month)	**1.15**	**2.20**	**4.31**	**5.14**	**3.02**	**2.21**
Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1975 - 1972 =		3			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	0.93	1.95	4.08	4.91	4.59	3.10
Average yield, Yi (2)	1.04					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.43					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month)	**0.69**	**1.44**	**3.02**	**3.63**	**3.40**	**2.29**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

1991						
Winter wheat	Derived Yenv(WINTERWHEAT) polynomial equation:					
	y = 0.0158x2 + 1.0449x + 37.295 (see Figure 2.1.4.60)					
	x = 1991 - 1972 =		19			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{WINTERWHEAT(MAX)}$ (inches per month) (1)	1.91	5.46	6.95	4.46	--	--
Average yield, Yi (bu/acre) (2)	50.32					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	62.85					
Adjusted maximum evapotranspiration, $ET_{WINTERWHEAT}$ (inches per month)	**1.58**	**4.51**	**5.75**	**3.69**	**--**	**--**
Spring wheat	Derived Yenv(SPRINGWHEAT) polynomial equation:					
	y = - 0.0223x2 + 1.6967x + 38.023 (see Figure 2.1.4.58)					
	x = 1991 - 1972 =		19			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SPRINGWHEAT(MAX)}$ (inches per month) (1)	1.56	4.33	7.13	4.97	--	--
Average yield, Yi (bu/acre) (2)	54.00					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	62.21					
Adjusted maximum evapotranspiration, $ET_{SPRINGWHEAT}$ (inches per month)	**1.38**	**3.83**	**6.31**	**4.40**	**--**	**--**
Barley	Derived Yenv(BARLEY) polynomial equation:					
	y = - 0.0185x2 + 1.0409x + 59.859 (see Figure 2.1.4.53)					
	x = 1991 - 1972 =		19			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{BARLEY(MAX)}$ (inches per month) (1)	1.65	4.81	7.21	5.77	2.01	1.06
Average yield, Yi (bu/acre) (2)	74.54					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	72.96					
Adjusted maximum evapotranspiration, ET_{BARLEY} (inches per month) (5)	**1.65**	**4.81**	**7.21**	**5.77**	**2.01**	**1.06**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Oats	Derived Yenv(OATS) polynomial equation:					
	y = - 0.0257x2 + 1.3197x + 58.335 (see Figure 2.1.4.48.)					
	x = 1991 - 1972 =		19			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OATS(MAX)}$ (inches per month) (1)	1.65	4.81	7.21	5.77	2.01	1.06
Average yield, Yi (bu/acre) (2)	59.85					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (bu/acre) (2)	74.13					
Adjusted maximum evapotranspiration, ET_{OATS} (inches per month)	**1.37**	**4.00**	**6.00**	**4.80**	**1.67**	**0.88**
Dry beans	Derived Yenv(DRYBEANS) polynomial equation:					
	y = 0.0103x2 - 0.0741x + 18.815 (see Figure 2.1.4.55)					
	x = 1991 - 1972 =		19			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ETDRYBEANS_{(MAX)}$ (inches per month) (1)	0.89	1.23	5.36	7.64	3.42	1.06
Average yield, Yi (cwt/acre) (2)	17.87					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (cwt/acre) (2)	21.13					
Adjusted maximum evapotranspiration, $ET_{DRYBEANS}$ (inches per month)	**0.77**	**1.06**	**4.64**	**6.62**	**2.96**	**0.92**
Sugar beets	Derived Yenv(SUGARBEETS) polynomial equation:					
	y = - 0.0175x2 + 0.8631x + 14.513 (see Figure 2.1.4.59)					
	x = 1991 - 1972 =		19			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{SUGARBEETS(MAX)}$ (inches per month) (1)	1.52	2.36	4.95	7.11	6.51	3.63
Average yield, Yi (tons/acre) (2)	17.17					
Crop response function, ky (no units) (3)	1.15					
"Fully watered" yield, Y_{env} (tons/acre) (2)	24.59					
Adjusted maximum evapotranspiration, $ET_{SUGARBEETS}$ (inches per month)	**1.12**	**1.74**	**3.65**	**5.24**	**4.80**	**2.68**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Corn	Derived Yenv(CORN) polynomial equation:					
	y = 0.0168x2 + 1.2636x + 85.222 (see Figure 2.1.4.54)					
	x = 1991 - 1972 =		19			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{CORN(MAX)}$ (inches per month) (1)	0.89	1.95	6.96	8.09	5.97	1.76
Average yield, Yi (bu/acre) (2)	109.04					
Crop response function, ky (no units) (3)	1.25					
"Fully watered" yield, Y_{env} (bu/acre) (2)	115.30					
Adjusted maximum evapotranspiration, ET_{CORN} (inches per month)	**0.85**	**1.87**	**6.66**	**7.74**	**5.71**	**1.68**
Alfalfa	Derived Yenv(ALFALFA) polynomial equation:					
	y = 0.0006x2 + 0.0108x + 3.2948 (see Figure 2.1.4.52)					
	x = 1991 - 1972 =		19			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{ALFALFA(MAX)}$ (inches per month) (1)	2.48	5.06	5.37	6.78	3.30	2.11
Average yield, Yi (tons/acre) (2)	3.48					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	3.72					
Adjusted maximum evapotranspiration, $ET_{ALFALFA}$ (inches per month)	**2.33**	**4.75**	**5.04**	**6.36**	**3.10**	**1.98**
Other hay	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1991 - 1972 =		19			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{OHAY(MAX)}$ (inches per month) (1)	1.77	3.45	6.30	7.06	4.06	3.13
Average yield, Yi (tons/acre) (2)	1.70					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (tons/acre) (2)	1.60					
Adjusted maximum evapotranspiration, ET_{OHAY} (inches per month) (5)	**1.77**	**3.45**	**6.30**	**7.06**	**4.06**	**3.13**

Table 2.1.4.87 Summary – adjusted maximum crop evapotranspiration, ET_C - normal or average stream flow years - South Platte subbasin (cont)

Irrigated pasture	Derived Yenv(OTHER HAY) polynomial equation:					
	y = 0.0004x2 + 0.0021x + 1.4196 (see Figure 2.1.4.57)					
	x = 1991 - 1972 =		19			
Month	Apr	May	Jun	Jul	Aug	Sep
Max evapotranspiration, $ET_{IRRPASTURE(MAX)}$ (inches per month) (1)	1.06	2.27	4.42	4.99	4.57	3.26
Average yield, Yi (2)	1.70					
Crop response function, ky (no units) (3)	1.05					
"Fully watered" yield, Y_{env} (2)	1.60					
Adjusted maximum evapotranspiration, $ET_{IRRPASTURE}$ (inches per month) (5)	**1.06**	**2.27**	**4.42**	**4.99**	**4.57**	**3.26**
Notes:						
(1) See Table 2.1.4.46.						
(2) See Table 2.1.4.54. for area-weighted annual yields						
(3) See Table 2.1.4.53.						
(4) "Other hay" values for average yield, Y_i; crop response function, ky; and fully watered yield, Y_{env}; used for irrigated pasture						
(5) If (Yi/Yenv) > 1.0, "fully watered" $ET_C = ET_{MAX}$						

A summary of adjusted, yield-based crop evapotranspiration values during high, low, and normal or average stream flow years–derivation of which is shown in Table 2.1.4.85, 2.1.4.86, and 2.1.4.87–is included in Table 2.1.4.88.

Table 2.1.4.88 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - South Platte subbasin

High stream flow years								
		"Yield adjusted" evapotranspiration, ET_C (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1986	winter wheat	2.01	5.46	7.45	4.90	--	--	**19.82**
	spring wheat	1.64	4.33	7.65	5.47	--	--	**19.09**
	barley	1.74	4.81	7.73	6.34	2.06	0.94	**23.62**
	oats	1.74	4.81	7.73	6.34	2.06	0.94	**23.62**
	dry beans	0.85	1.12	5.24	7.66	3.19	0.86	**18.92**
	sugar beets	1.60	2.36	5.31	7.81	6.68	3.24	**27.00**
	corn	0.93	1.95	7.46	8.90	6.12	1.57	**26.93**
	alfalfa	2.61	5.06	5.76	7.45	3.39	1.89	**26.16**
	other hay	1.87	3.45	6.76	7.76	4.16	0.00	**24.00**
	irrigated pasture	1.12	2.27	4.74	5.48	4.69	2.91	**21.21**
1984	winter wheat	1.54	5.95	7.04	4.80	--	--	**19.33**
	spring wheat	1.15	4.34	6.63	4.92	--	--	**17.04**
	barley	1.33	5.24	7.30	6.22	2.02	0.98	**23.09**
	oats	1.23	4.84	6.75	5.75	1.87	0.91	**21.35**
	dry beans	0.71	1.34	5.43	8.23	3.44	0.98	**20.13**
	sugar beets	0.70	1.46	2.84	4.34	3.72	1.90	**14.96**
	corn	0.68	2.03	6.73	8.33	5.75	1.56	**25.08**
	alfalfa	1.93	5.34	5.26	7.06	3.22	1.90	**24.71**
	other hay	1.07	2.81	4.76	5.68	3.05	2.16	**19.53**
	irrigated pasture	0.64	1.84	3.33	4.01	3.44	2.25	**15.51**
1985	winter wheat	1.69	4.65	5.69	3.63	--	--	**15.66**
	spring wheat	1.39	3.70	5.86	4.08	--	--	**15.03**
	barley	1.93	5.38	7.77	6.19	2.17	0.94	**24.38**
	oats	1.64	4.58	6.61	5.27	1.85	0.80	**20.75**
	dry beans	0.99	1.33	5.57	7.91	3.57	0.91	**20.28**
	sugar beets	1.78	2.64	5.34	7.62	7.05	3.24	**27.67**
	corn	0.95	2.01	6.90	7.98	5.95	1.44	**25.23**
	alfalfa	2.64	5.17	5.28	6.62	3.26	1.72	**24.69**
	other hay	1.90	3.55	6.23	6.95	4.03	2.57	**25.23**
	irrigated pasture	1.14	2.33	4.37	4.91	4.54	2.67	**19.96**
1973	winter wheat	1.62	5.34	6.98	4.03	--	--	**17.97**
	spring wheat	1.21	3.92	6.63	4.17	--	--	**15.93**
	barley	1.42	4.81	7.40	5.33	1.95	0.84	**21.75**
	oats	1.42	4.81	7.40	5.33	1.95	0.84	**21.75**
	dry beans	0.73	1.19	5.31	6.81	3.20	0.81	**18.05**
	sugar beets	1.02	1.84	3.97	5.13	4.95	2.26	**19.17**
	corn	0.76	1.95	7.14	7.48	5.80	1.40	**24.53**
	alfalfa	2.00	4.74	5.16	5.86	3.01	1.57	**22.34**
	other hay	1.41	3.17	5.95	6.00	3.62	2.29	**22.44**
	irrigated pasture	0.85	2.09	4.17	4.24	4.08	2.38	**17.81**

Table 2.1.4.88 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - South Platte subbasin (cont)

Low stream flow years								
		"Yield adjusted" evapotranspiration, ETC (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1972	winter wheat	1.97	5.38	7.29	4.51	--	--	**19.15**
	spring wheat	1.53	4.06	7.11	4.78	--	--	**17.48**
	barley	1.70	4.74	7.56	5.83	1.93	1.04	**22.80**
	oats	1.60	4.45	7.10	5.48	1.81	0.98	**21.42**
	dry beans	0.89	1.18	5.48	7.53	3.20	1.02	**19.30**
	sugar beets	1.57	2.33	5.20	7.18	6.26	3.56	**26.10**
	corn	0.85	1.80	6.81	7.63	5.35	1.61	**24.05**
	alfalfa	2.34	4.56	5.15	6.26	2.90	1.89	**23.10**
	other hay	1.83	3.40	6.61	7.14	3.90	3.07	**25.95**
	irrigated pasture	1.10	2.24	4.63	5.04	4.39	3.20	**20.60**
1989	winter wheat	1.96	5.33	6.17	4.73	--	--	**18.19**
	spring wheat	1.30	3.43	5.13	4.28	--	--	**14.14**
	barley	1.65	4.56	6.21	5.95	1.77	0.92	**21.06**
	oats	1.61	4.46	6.07	5.81	1.73	0.90	**20.58**
	dry beans	0.98	1.30	5.14	8.78	3.36	1.03	**20.59**
	sugar beets	0.98	1.30	5.14	8.78	3.36	1.03	**20.59**
	corn	0.91	1.92	6.22	8.66	5.47	1.59	**24.77**
	alfalfa	2.75	5.35	5.16	7.78	3.25	2.05	**26.34**
	other hay	1.65	3.05	5.06	6.78	3.34	2.54	**22.42**
	irrigated pasture	0.99	2.01	3.55	4.79	3.75	2.65	**17.74**
1990	winter wheat	1.99	5.14	7.61	4.29	--	--	**19.03**
	spring wheat	1.29	3.24	6.22	3.82	--	--	**14.57**
	barley	1.62	4.25	7.43	5.22	1.90	1.04	**21.46**
	oats	1.36	3.58	6.26	4.40	1.60	0.88	**18.08**
	dry beans	0.92	1.16	5.86	7.35	3.44	1.11	**19.84**
	sugar beets	0.97	1.36	3.33	4.19	4.02	2.35	**16.22**
	corn	0.92	1.84	7.63	7.79	6.01	1.86	**26.05**
	alfalfa	2.46	4.51	5.59	6.18	3.16	2.11	**24.01**
	other hay	1.78	3.13	6.65	6.56	3.93	3.18	**25.23**
	irrigated pasture	1.07	2.05	4.67	4.63	4.43	3.32	**20.17**
1992	winter wheat	2.12	5.42	5.82	3.75	--	--	**17.11**
	spring wheat	1.97	4.88	6.80	4.76	--	--	**18.41**
	barley	2.09	5.42	6.87	5.52	1.87	1.13	**22.90**
	oats	1.83	4.76	6.03	4.85	1.64	0.99	**20.10**
	dry beans	0.85	1.06	3.89	5.56	2.43	0.86	**14.65**
	sugar beets	1.43	1.98	3.52	5.07	4.53	2.91	**19.44**
	corn	1.00	1.97	5.95	6.94	5.00	1.69	**22.55**
	alfalfa	3.07	5.61	5.03	6.36	3.04	2.23	**25.34**
	other hay	1.81	3.14	4.84	5.44	3.05	2.71	**20.99**
	irrigated pasture	1.08	2.06	3.39	3.84	3.44	2.82	**16.63**

Table 2.1.4.88 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - South Platte subbasin (cont)

Normal or average stream flow years								
		"Yield adjusted" evapotranspiration, ETC (inches, 1)						
Year	Crop	Apr	May	Jun	Jul	Aug	Sep	Total
1974	winter wheat	1.70	5.32	6.24	4.21	--	--	**17.47**
	spring wheat	1.49	4.54	6.88	5.05	--	--	**17.96**
	barley	1.39	4.44	6.13	5.17	1.64	0.81	**19.58**
	oats	1.59	5.07	7.00	5.90	1.87	0.93	**22.36**
	dry beans	0.85	1.30	5.21	7.82	3.18	0.93	**19.29**
	sugar beets	1.44	2.45	4.73	7.15	5.96	3.15	**24.88**
	corn	0.85	2.06	6.76	8.28	5.56	1.55	**25.06**
	alfalfa	2.38	5.34	5.22	6.93	3.07	1.86	**24.80**
	other hay	1.67	3.57	6.00	7.08	3.69	2.70	**24.71**
	irrigated pasture	1.00	2.34	4.20	5.00	4.17	2.81	**19.52**
1983	winter wheat	1.56	4.74	6.28	4.82	--	--	**17.40**
	spring wheat	1.27	3.76	6.44	5.38	--	--	**16.85**
	barley	1.34	4.17	6.51	6.24	2.18	1.15	**21.59**
	oats	1.24	3.87	6.04	5.79	2.02	1.07	**20.03**
	dry beans	0.64	0.95	4.28	7.32	3.27	1.02	**17.48**
	sugar beets	0.83	1.37	2.99	5.13	4.71	2.63	**17.66**
	corn	0.72	1.70	6.28	8.75	6.47	1.91	**25.83**
	alfalfa	2.02	4.39	4.85	7.33	3.58	2.29	**24.46**
	other hay	1.36	2.83	5.36	7.20	4.15	3.20	**24.10**
	irrigated pasture	0.81	1.86	3.76	5.09	4.67	3.34	**19.53**
1988	winter wheat	2.06	5.43	7.51	4.71	--	--	**19.71**
	spring wheat	1.58	4.04	7.24	4.94	--	--	**17.80**
	barley	1.19	3.20	5.22	4.09	1.37	0.68	**15.75**
	oats	1.02	2.73	4.47	3.50	1.17	0.58	**13.47**
	dry beans	0.89	1.14	5.39	7.53	3.22	0.94	**19.11**
	sugar beets	1.69	2.42	5.53	7.76	6.81	3.59	**27.80**
	corn	1.01	2.04	7.94	9.03	6.39	1.78	**28.19**
	alfalfa	2.82	5.30	6.13	7.56	3.53	2.14	**27.48**
	other hay	1.52	2.74	5.43	5.96	3.28	2.40	**21.33**
	irrigated pasture	0.91	1.79	3.81	4.21	3.70	2.49	**16.91**
1982	winter wheat	2.10	5.26	6.50	4.71	--	--	**18.57**
	spring wheat	1.71	4.17	6.67	5.26	--	--	**17.81**
	barley	1.53	3.92	5.71	5.17	1.75	0.82	**18.90**
	oats	1.81	4.63	6.74	6.10	2.07	0.97	**22.32**
	dry beans	0.86	1.05	4.44	7.16	3.13	0.86	**17.50**
	sugar beets	1.67	2.28	4.63	7.51	6.73	3.33	**26.15**
	corn	0.93	1.81	6.27	8.25	5.95	1.55	**24.76**
	alfalfa	2.63	4.72	4.85	6.92	3.30	1.88	**24.30**
	other hay	1.38	2.37	4.18	5.31	2.98	2.04	**18.26**
	irrigated pasture	0.82	1.56	2.93	3.74	3.35	2.12	**14.52**

Table 2.1.4.88 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - South Platte subbasin (cont)

Year	Crop	"Yield adjusted" evapotranspiration, ETC (inches, 1)						
		Apr	May	Jun	Jul	Aug	Sep	Total
1987	winter wheat	2.40	5.31	7.32	4.85	--	--	**19.88**
	spring wheat	1.49	3.20	5.72	4.12	--	--	**14.53**
	barley	2.09	4.71	7.66	6.32	1.89	1.08	**23.75**
	oats	2.09	4.71	7.66	6.32	1.89	1.08	**23.75**
	dry beans	1.05	1.13	5.33	7.85	3.02	1.01	**19.39**
	sugar beets	1.71	2.04	4.65	6.89	5.43	3.29	**24.01**
	corn	1.12	1.91	7.40	8.87	5.63	1.81	**26.74**
	alfalfa	2.75	4.34	5.00	6.50	2.72	1.90	**23.21**
	other hay	2.24	3.38	6.70	7.74	3.82	3.21	**27.09**
	irrigated pasture	1.34	2.22	4.69	5.47	4.31	3.34	**21.37**
1979	winter wheat	1.94	4.35	6.26	4.42	--	--	**16.97**
	spring wheat	1.69	3.69	6.87	5.27	--	--	**17.52**
	barley	1.43	3.26	5.53	4.88	1.56	0.95	**17.61**
	oats	1.36	3.12	5.29	4.67	1.49	0.91	**16.84**
	dry beans	0.92	1.01	4.97	7.80	3.19	1.15	**19.04**
	sugar beets	1.28	1.56	3.70	5.84	4.89	3.17	**20.44**
	corn	0.80	1.38	5.58	7.14	4.82	1.65	**21.37**
	alfalfa	2.30	3.71	4.45	6.18	2.75	2.05	**21.44**
	other hay	1.82	2.79	5.75	7.10	3.72	3.34	**24.52**
	irrigated pasture	1.09	1.83	4.03	5.01	4.20	3.48	**19.64**
1976	winter wheat	1.51	4.16	5.46	3.78	--	--	**14.91**
	spring wheat	1.23	3.29	5.59	4.21	--	--	**14.32**
	barley	1.49	4.18	6.47	5.58	1.75	0.92	**20.39**
	oats	1.59	4.46	6.90	5.96	1.87	0.99	**21.77**
	dry beans	0.75	1.01	4.51	6.94	2.80	0.87	**16.88**
	sugar beets	1.47	2.20	4.76	7.37	6.11	3.41	**25.32**
	corn	0.86	1.82	6.69	8.40	5.60	1.65	**25.02**
	alfalfa	1.83	3.59	3.94	5.35	2.36	1.51	**18.58**
	other hay	0.88	1.65	3.11	3.76	1.95	1.51	**12.86**
	irrigated pasture	0.53	1.09	2.18	2.66	2.20	1.57	**10.23**
1980	winter wheat	1.46	3.82	6.20	3.87	--	--	**15.35**
	spring wheat	1.14	2.91	6.10	4.14	--	--	**14.29**
	barley	1.30	3.47	6.65	5.17	1.63	0.91	**19.13**
	oats	1.68	4.48	8.57	6.67	2.10	1.17	**24.67**
	dry beans	0.90	1.15	6.37	8.84	3.58	1.17	**22.01**
	sugar beets	1.53	2.19	5.86	8.18	6.79	3.99	**28.54**
	corn	0.89	1.80	8.17	9.25	6.19	1.92	**28.22**
	alfalfa	2.15	4.02	5.44	6.68	2.95	1.99	**23.23**
	other hay	1.38	2.46	5.73	6.24	3.25	2.65	**21.71**
	irrigated pasture	0.83	1.62	4.02	4.42	3.67	2.75	**17.31**

Table 2.1.4.88 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - South Platte subbasin (cont)

Year	Crop	"Yield adjusted" evapotranspiration, ETC (inches, 1)						
		Apr	May	Jun	Jul	Aug	Sep	Total
1977	winter wheat	1.30	3.57	4.71	2.91	--	--	**12.49**
	spring wheat	1.22	3.25	5.55	3.72	--	--	**13.74**
	barley	1.12	3.14	4.88	3.76	1.13	0.73	**14.76**
	oats	1.01	2.83	4.40	3.39	1.02	0.66	**13.31**
	dry beans	0.87	1.16	5.25	7.18	2.78	1.05	**18.29**
	sugar beets	1.57	2.35	5.11	7.04	5.59	3.81	**25.47**
	corn	0.92	1.94	7.18	8.02	5.13	1.85	**25.04**
	alfalfa	2.15	4.22	4.64	5.63	2.37	1.86	**20.87**
	other hay	0.93	1.75	3.32	3.57	1.78	1.68	**13.03**
	irrigated pasture	0.56	1.15	2.32	2.52	2.00	1.75	**10.30**
1978	winter wheat	1.53	3.71	5.53	3.72	--	--	**14.49**
	spring wheat	1.16	2.73	5.27	3.85	--	--	**13.01**
	barley	1.57	3.88	6.81	5.70	1.79	1.01	**20.76**
	oats	1.67	4.12	7.24	6.06	1.90	1.07	**22.06**
	dry beans	0.71	0.84	4.27	6.38	2.56	0.85	**15.61**
	sugar beets	1.23	1.62	3.97	5.95	4.91	2.93	**20.61**
	corn	0.68	1.29	5.35	6.51	4.32	1.36	**19.51**
	alfalfa	1.88	3.26	4.06	5.35	2.35	1.61	**18.51**
	other hay	1.14	1.89	4.04	4.74	2.45	2.03	**16.29**
	irrigated pasture	0.68	1.25	2.84	3.35	2.76	2.11	**12.99**
1981	winter wheat	2.11	4.25	6.55	4.06	--	--	**16.97**
	spring wheat	1.47	2.89	5.75	3.88	--	--	**13.99**
	barley	1.61	3.29	5.97	4.62	1.49	0.86	**17.84**
	oats	2.08	4.26	7.73	5.98	1.93	1.12	**23.10**
	dry beans	1.13	1.11	5.85	8.07	3.34	1.14	**20.64**
	sugar beets	1.95	2.13	5.41	7.50	6.36	3.91	**27.26**
	corn	1.06	1.65	7.11	7.99	5.45	1.78	**25.04**
	alfalfa	2.62	3.76	4.83	5.88	2.66	1.88	**21.63**
	other hay	1.87	2.57	5.68	6.15	3.27	2.79	**22.33**
	irrigated pasture	1.12	1.69	3.98	4.35	3.68	2.90	**17.72**
1975	winter wheat	1.51	4.24	5.79	3.96	--	--	**15.50**
	spring wheat	1.14	3.12	5.53	4.11	--	--	**13.90**
	barley	1.36	3.89	6.27	5.35	1.90	0.94	**19.71**
	oats	1.18	3.38	5.44	4.64	1.65	0.82	**17.11**
	dry beans	0.73	1.01	4.70	7.14	3.26	0.95	**17.79**
	sugar beets	1.24	1.89	4.27	6.53	6.11	3.22	**23.26**
	corn	0.61	1.33	5.09	6.31	4.75	1.32	**19.41**
	alfalfa	1.83	3.68	4.19	5.64	2.81	1.70	**19.85**
	other hay	1.15	2.20	4.31	5.14	3.02	2.21	**18.03**
	irrigated pasture	0.69	1.44	3.02	3.63	3.40	2.29	**14.47**

Table 2.1.4.88 Summary – adjusted maximum crop evapotranspiration, ET_C - high, low, and normal or average stream flow years - South Platte subbasin (cont)

Year	Crop	"Yield adjusted" evapotranspiration, ETC (inches, 1)						
		Apr	May	Jun	Jul	Aug	Sep	Total
1991	winter wheat	1.58	4.51	5.75	3.69	--	--	**15.53**
	spring wheat	1.38	3.83	6.31	4.40	--	--	**15.92**
	barley	1.65	4.81	7.21	5.77	2.01	1.06	**22.51**
	oats	1.37	4.00	6.00	4.80	1.67	0.88	**18.72**
	dry beans	0.77	1.06	4.64	6.62	2.96	0.92	**16.97**
	sugar beets	1.12	1.74	3.65	5.24	4.80	2.68	**19.23**
	corn	0.85	1.87	6.66	7.74	5.71	1.68	**24.51**
	alfalfa	2.33	4.75	5.04	6.36	3.10	1.98	**23.56**
	other hay	1.77	3.45	6.30	7.06	4.06	3.13	**25.77**
	irrigated pasture	1.06	2.27	4.42	4.99	4.57	3.26	**20.57**
Notes:								
(1) See Tables 2.1.4.85, 2.1.4.86., and 2.1.4.87.								

2.1.4.8 Effective Precipitation, R_e, and Historical Basin Precipitation Data

Effective precipitation, R_e, is the portion of total precipitation that is retained by soil and can be utilized by crops. Higher effective precipitation, which provides correspondingly higher soil moisture, results in lower consumptive use of irrigation water by crops. Consumptive use of irrigation water by crops therefore equals the difference between yield-adjusted crop evapotranspiration, ET_C, and effective precipitation, R_e.

Total annual October through September water year effective precipitation, R_e, consists of two components–effective precipitation for the "before growing season" period, typically the months of October through March; and effective precipitation during the growing season, typically the months of April through September. Effective precipitation during the before growing season months provides water that is stored in the soil and is available for use by crops during the subsequent growing season. Effective precipitation during the growing season is immediately available for use by crops. In this study, the pre- or before growing season effective precipitation months in all seven Platte River Basin subbasins included the months of October through March. The months of April through September comprised the effective precipitation during growing season months for all subbasins in this study. Table 2.1.4.89 summarizes methods and "seasons" for determining effective precipitation, R_e , that were applied during this study.

Table 2.1.4.89 Summary - effective precipitation, R_e, calculation methods

Months before growing season - all crops		
Subbasin	**Months**	**R_e calculation method**
Above Pathfinder	Oct 1 - Mar 30	0.5 x total precipitation, R_t, up to 3 inches, maximum
Pathfinder to Guernsey	Oct 1 - Mar 30	0.5 x total precipitation, R_t, up to 3 inches, maximum
Guernsey to State Line	Oct 1 - Mar 30	0.5 x total precipitation, R_t, up to 3 inches, maximum
Upper Laramie	Oct 1 - Mar 30	0.5 x total precipitation, R_t, up to 3 inches, maximum
Lower Laramie	Oct 1 - Mar 30	0.5 x total precipitation, R_t, up to 3 inches, maximum
Horse Creek	Oct 1 - Mar 30	0.5 x total precipitation, R_t, up to 3 inches, maximum
South Platte	Oct 1 - Mar 30	0.5 x total precipitation, R_t, up to 3 inches, maximum
During growing season - alfalfa and other hay (forage crops) and irrigated pasture (2)		
Subbasin	**Months**	**R_e calculation method**
Above Pathfinder	Apr 1 - Sep 30	0.95 x total precipitation, R_t
Pathfinder to Guernsey	Apr 1 - Sep 30	0.95 x total precipitation, R_t
Guernsey to State Line	Apr 1 - Sep 30	0.95 x total precipitation, R_t
Upper Laramie	Apr 1 - Sep 30	0.95 x total precipitation, R_t
Lower Laramie	Apr 1 - Sep 30	0.95 x total precipitation, R_t
Horse Creek	Apr 1 - Sep 30	0.95 x total precipitation, R_t
South Platte	Apr 1 - Sep 30	0.95 x total precipitation, R_t
During growing season - barley, corn, dry beans, oats, spring wheat, sugar beets, and winter wheat		
Subbasin	**Months**	**R_e calculation method**
Above Pathfinder	Apr 1 - Sep 30	$R_e = f(D) \times (1.25 \times R_t^{0.824} - 2.93) \times (10^{0.000955\ ETc})$
Pathfinder to Guernsey	Apr 1 - Sep 30	where:
Guernsey to State Line	Apr 1 - Sep 30	$f(D)$ = varying depletion depth factor = 1.0 based on
Upper Laramie	Apr 1 - Sep 30	assumed constant 75 millimeter "depletion depth"
Lower Laramie	Apr 1 - Sep 30	R_t = total measured precipitation, in units of millimeters
Horse Creek	Apr 1 - Sep 30	ET_c = calculated monthly crop evapotranspiration, in
South Platte	Apr 1 - Sep 30	units of millimeters per acre per month

Notes:

(1) See Table 2.1.4.1.

(2) The Supreme Court (2001) method bases effective precipitation for forage crops below Pathfinder on 95 percent of total April through October precipitation; since this study considers the six-month long April through September irrigation season for all crops, forage crop effective precipitation below Pathfinder in this study equals 95 percent of April through September precipitation.

As shown in Table 2.1.4.89, calculation of the before growing season and during growing season components of effective precipitation, R_e, is accomplished in three ways. Before growing season effective precipitation for all crops and during growing season effective precipitation for alfalfa and other hay are calculated as percentages of total precipitation during the respective seasons. In subbasins for which data from more than one weather station were available, monthly and annual precipitation values used in R_e calculations were average values from all assessed weather stations in the subbasins. During growing season effective precipitation for other crops was calculated on the basis of an equation taken from Supreme Court (2001):

$R_e = f(D) \times (1.25 \times R_t^{0.824} - 2.93) \times (10^{0.000955\ ET_c})$, where: (Equation 5)

$f(D)$ = varying depletion depth factor = 1.0 based on an assumed constant 75 millimeter depletion soil depth;

R_t = total measured precipitation for the time period under consideration, in units of millimeters; and

ET_c = calculated yield-adjusted monthly crop evapotranspiration, in units of millimeters per acre per month.

Precipitation data for this study were obtained from the High Plains Regional Climate Center (HPRCC), Lincoln, Nebraska, as were temperature data that are described in Section 2.1.4.3 of this technical memorandum. Precipitation data were collected from the 14 Platte River Basin weather stations that are listed in Table 2.1.4.1. Appendix 2.1.4.E contains basin plan precipitation data. The first part of this appendix includes tabulation of precipitation data from the 14 Platte River Basin weather stations as received from HPRCC. The second part of the appendix, organized by subbasin, includes tabulated weather station data for the 1972 through 2001 period of study that were organized and assessed on the basis of before growing season months and during growing season months. The second portion of Appendix 2.1.4.E leaves blank months for which HPRCC weather station data were not available and includes numerals for months in which HPRCC weather station data were "flagged" with letters to indicate the absence of data from one or more days during that month.

2.1.4.9 Consumptive Use of Irrigation Water

Both unit consumptive use, CU_W in units of inches per year, and total consumptive use in units of acre-feet per year, were included in this basin plan study. As noted in the introduction to this technical memorandum, total study period annual consumptive use of irrigation water that is reported in this basin plan for the Above Pathfinder and Pathfinder to Guernsey subbasins were values taken directly from Supreme Court (2001) and subsequent Wyoming State Engineer's Office calculations for years 2000 and 2001. Annual consumptive use of irrigation water was calculated during this study for each crop under consideration during high, low, and normal or average stream flow years in the Guernsey to State Line, Upper Laramie, Lower Laramie, Horse Creek, and South Platte subbasins.

2.1.4.9.1 Consumptive Use of Irrigation Water – Above Pathfinder Subbasin

Table 2.1.4.90 through Table 2.1.4.119 contain basin plan unit consumptive use, CU_W in units of inches, calculation parameters and results for all crops under consideration during each high, low, and normal or average stream flow year in the Above Pathfinder subbasin. As noted in the introduction to this technical memorandum, total annual consumptive use values in units of acre-feet for the Above Pathfinder subbasin that are reported in this basin plan were taken directly from Supreme Court (2001) and subsequent year 2000 and 2001 Wyoming State Engineer's calculations. Supreme Court (2001) annual total consumptive use values, Supreme Court (2001) irrigated acreage values, a derived Supreme Court (2001) subbasin study period unit consumptive use value, and a calculated basin plan subbasin unit consumptive use value for the Above Pathfinder to Guernsey subbasin are summarized in Table 2.1.4.120.

Table 2.1.4.90 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	4.27	6.98	6.85	2.94	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.21	108.46	177.29	173.99	74.68	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.19			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.43	0.51	0.88	2.61	1.46	1.35
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	61.72	12.95	22.35	66.29	37.08	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	36.70	9.37	19.55	53.77	25.47	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.44	0.37	0.77	2.12	1.00	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.70			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.29			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			8.70			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.49**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.97	6.75	7.12	3.29	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	75.44	171.45	180.85	83.57	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.13			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.43	0.51	0.88	2.61	1.46	1.35
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	12.95	22.35	66.29	37.08	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	8.72	19.30	54.59	25.97	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	0.34	0.76	2.15	1.02	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.27			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.29			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			7.27			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.86**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.31	5.09	7.12	6.05	1.99	0.99
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.27	129.29	180.85	153.67	50.55	25.15
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.55			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.43	0.51	0.88	2.61	1.46	1.35
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	61.72	12.95	22.35	66.29	37.08	34.29
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	37.03	9.81	19.71	51.42	24.15	21.22
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.46	0.39	0.78	2.02	0.95	0.84
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.44			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.29			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.44			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.11**			

Table 2.1.4.90 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - Above Pathfinder subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.16	4.49	6.29	5.34	1.76	0.87
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.46	114.05	159.77	135.64	44.70	22.10
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.91			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.43	0.51	0.88	2.61	1.46	1.35
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	61.72	12.95	22.35	66.29	37.08	34.29
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	36.72	9.49	18.81	49.42	23.84	21.08
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.45	0.37	0.74	1.95	0.94	0.83
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.28			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.29			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.28			
L=C-K	**annual consumptive use of irrigation water (inches)**			**10.63**			
dry beans	Not cultivated						
sugar beets	Not cultivated						
corn	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.80	2.31	5.95	4.78	2.45	1.65
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.94			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.23			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.77			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.29			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			11.77			
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.17**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	3.01	6.14	4.47	3.29	2.21
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.19			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.23			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.77			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.29			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			11.77			
H=B-G	**annual consumptive use of irrigation water (inches)**			**8.42**			

Table 2.1.4.90 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - Above Pathfinder subbasin (cont)

	Crop							
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	2.79	4.45	4.79	2.83	1.90	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.83				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.23				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.77				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.29				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00				
G=D+F	total annual effective precipitation (inches)			11.77				
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.06**				

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.91 Consumptive use of irrigation water, CU_W, calculations - 1983 - high stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.04	3.19	6.07	6.20	2.83	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.42	81.03	154.18	157.48	71.88	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.33			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.10	1.58	1.87	1.50	0.98	0.57
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	53.34	40.13	47.50	38.10	24.89	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	31.99	27.80	38.13	31.34	17.26	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.26	1.09	1.50	1.23	0.68	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.76			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.92			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.46			
K=H+J	total annual effective precipitation (inches)			8.22			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.11**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.37	6.26	6.88	3.38	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	60.20	159.00	174.75	85.85	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.89			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.10	1.58	1.87	1.50	0.98	0.57
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	40.13	47.50	38.10	24.89	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	26.55	38.54	32.55	17.80	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	1.05	1.52	1.28	0.70	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.55			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.92			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.46			
K=H+J	total annual effective precipitation (inches)			7.01			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.88**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.18	3.80	6.18	5.48	1.92	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.97	96.52	156.97	139.19	48.77	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.57			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.10	1.58	1.87	1.50	0.98	0.57
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	53.34	40.13	47.50	38.10	24.89	14.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	32.24	28.76	38.36	30.10	16.41	8.86
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.27	1.13	1.51	1.19	0.65	0.35
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.10			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.92			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.46			
K=H+J	total annual effective precipitation (inches)			8.56			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.01**			

Table 2.1.4.91 Consumptive use of irrigation water, CU_W, calculations - 1983 - high stream flow year - Above Pathfinder subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.25	4.02	6.54	5.80	2.03	1.06
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	31.75	102.11	166.12	147.32	51.56	26.92
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.70			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.10	1.58	1.87	1.50	0.98	0.57
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	53.34	40.13	47.50	38.10	24.89	14.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	32.37	29.12	39.14	30.65	16.51	8.89
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.27	1.15	1.54	1.21	0.65	0.35
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.17			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.92			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.46			
K=H+J	total annual effective precipitation (inches)			8.63			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.07**			
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.91	2.15	6.43	5.37	2.93	2.08
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.87			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.18			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.92			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.46			
G=D+F	total annual effective precipitation (inches)			10.64			
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.23**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	2.43	5.78	4.39	3.43	2.44
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.52			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.18			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.92			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.46			
G=D+F	total annual effective precipitation (inches)			10.64			
H=B-G	**annual consumptive use of irrigation water (inches)**			**8.88**			

Table 2.1.4.91 Consumptive use of irrigation water, CU_W, calculations - 1983 - high stream flow year - Above Pathfinder subbasin (cont)

	Crop						
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	2.26	4.19	4.70	2.95	2.10
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.25			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.18			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.92			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.46			
G=D+F	total annual effective precipitation (inches)			10.64			
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.61**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.92 Consumptive use of irrigation water, CU_w, calculations - 1985 - high stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.63	4.34	7.53	6.79	3.14	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.40	110.24	191.26	172.47	79.76	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.43			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.17	0.65	0.81	1.41	0.17	1.13
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.72	16.51	20.57	35.81	4.32	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.19	12.32	18.53	30.56	1.48	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.76	0.49	0.73	1.20	0.06	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.24			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.25			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.63			
K=H+J	total annual effective precipitation (inches)			4.87			
L=C-K	**annual consumptive use of irrigation water (inches)**			**18.56**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	3.02	7.28	7.06	3.51	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	76.71	184.91	179.32	89.15	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.87			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.17	0.65	0.81	1.41	0.17	1.13
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	16.51	20.57	35.81	4.32	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	11.45	18.28	31.03	1.51	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	0.45	0.72	1.22	0.06	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.45			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.25			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.63			
K=H+J	total annual effective precipitation (inches)			4.08			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.79**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	4.66	6.92	5.41	1.92	0.83
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.42	118.36	175.77	137.41	48.77	21.08
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.41			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.17	0.65	0.81	1.41	0.17	1.13
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.72	16.51	20.57	35.81	4.32	28.70
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.23	12.54	17.91	28.29	1.38	17.74
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.76	0.49	0.71	1.11	0.05	0.70
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.82			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.25			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.63			
K=H+J	total annual effective precipitation (inches)			5.45			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.96**			

Table 2.1.4.92 Consumptive use of irrigation water, CU_W, calculations - 1985 - high stream flow year - Above Pathfinder subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.54	4.31	6.40	5.00	1.78	0.77
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.12	109.47	162.56	127.00	45.21	19.56
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.80			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.17	0.65	0.81	1.41	0.17	1.13
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.72	16.51	20.57	35.81	4.32	28.70
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.09	12.30	17.40	27.65	1.37	17.68
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.75	0.48	0.69	1.09	0.05	0.70
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.76			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.25			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.63			
K=H+J	total annual effective precipitation (inches)			5.39			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.41**			

dry beans	
	Not cultivated

sugar beets	
	Not cultivated

corn	
	Not cultivated

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	2.30	6.29	4.64	2.56	1.50
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.41			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.35			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.25			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.63			
G=D+F	total annual effective precipitation (inches)			6.71			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.70**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.52	3.05	6.62	4.44	3.50	2.06
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.19			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.35			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.25			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.63			
G=D+F	total annual effective precipitation (inches)			6.71			
H=B-G	**annual consumptive use of irrigation water (inches)**			**14.48**			

Table 2.1.4.92 Consumptive use of irrigation water, CU_W, calculations - 1985 - high stream flow year - Above Pathfinder subbasin (cont)

	Crop							
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.52	2.84	4.80	4.75	3.02	1.78	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.71				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.35				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.08				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.25				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.63				
G=D+F	total annual effective precipitation (inches)			6.71				
H=B-G	**annual consumptive use of irrigation water (inches)**			**12.00**				

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.93 Consumptive use of irrigation water, CU_W, calculations - 1986 - high stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.10	3.12	6.15	4.93	2.36	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.94	79.25	156.21	125.22	59.94	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.66			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.51	1.54	2.12	1.01	1.17	0.78
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.35	39.12	53.85	25.65	29.72	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.71	27.04	42.92	20.00	19.99	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.93	1.06	1.69	0.79	0.79	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.26			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.33			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.67			
K=H+J	total annual effective precipitation (inches)			7.93			
L=C-K	**annual consumptive use of irrigation water (inches)**			**9.73**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.77	7.58	6.55	3.38	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	70.36	192.53	166.37	85.85	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.28			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.51	1.54	2.12	1.01	1.17	0.78
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	39.12	53.85	25.65	29.72	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	26.52	46.49	21.89	21.16	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	1.04	1.83	0.86	0.83	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.56			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.33			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.67			
K=H+J	total annual effective precipitation (inches)			7.23			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.05**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.63	4.82	8.12	5.65	2.07	0.92
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.40	122.43	206.25	143.51	52.58	23.37
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.21			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.51	1.54	2.12	1.01	1.17	0.78
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.35	39.12	53.85	25.65	29.72	19.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.43	29.74	47.91	20.82	19.67	12.33
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.96	1.17	1.89	0.82	0.77	0.49
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.10			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.33			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.67			
K=H+J	total annual effective precipitation (inches)			8.77			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.44**			

Table 2.1.4.93 Consumptive use of irrigation water, CU_W, calculations - 1986 - high stream flow year - Above Pathfinder subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.63	4.82	8.12	5.65	2.07	0.92
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.40	122.43	206.25	143.51	52.58	23.37
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.21			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.51	1.54	2.12	1.01	1.17	0.78
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.35	39.12	53.85	25.65	29.72	19.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.43	29.74	47.91	20.82	19.67	12.33
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.96	1.17	1.89	0.82	0.77	0.49
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.10			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.33			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.67			
K=H+J	total annual effective precipitation (inches)			8.77			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.44**			
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.81	1.77	5.50	3.61	2.07	1.24
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.00			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.91			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.51			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.33			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.67			
G=D+F	total annual effective precipitation (inches)			10.18			
H=B-G	**annual consumptive use of irrigation water (inches)**			**4.82**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.20	2.56	6.31	3.77	3.08	1.86
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.78			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.91			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.51			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.33			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.67			
G=D+F	total annual effective precipitation (inches)			10.18			
H=B-G	**annual consumptive use of irrigation water (inches)**			**8.60**			

Table 2.1.4.93 Consumptive use of irrigation water, CU_W, calculations - 1986 - high stream flow year - Above Pathfinder subbasin (cont)

	Crop						
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.20	2.38	4.57	4.04	2.66	1.60
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.45			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.91			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.51			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.33			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.67			
G=D+F	total annual effective precipitation (inches)			10.18			
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.27**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.94 Consumptive use of irrigation water, CU_W, calculations - 1973 - high stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	3.87	7.18	6.39	3.04	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.67	98.30	182.37	162.31	77.22	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.53			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.45	0.80	0.65	2.54	0.57	1.89
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	62.23	20.32	16.51	64.52	14.48	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	36.76	14.92	14.44	51.16	9.93	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.45	0.59	0.57	2.01	0.39	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.01			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.41			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			8.01			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.52**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.55	6.57	6.30	3.22	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	64.77	166.88	160.02	81.79	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.64			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.45	0.80	0.65	2.54	0.57	1.89
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	20.32	16.51	64.52	14.48	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	13.86	13.96	50.90	10.03	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	0.55	0.55	2.00	0.39	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.49			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.41			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			6.49			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.15**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	4.38	6.96	5.36	1.96	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.96	111.25	176.78	136.14	49.78	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.74			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.45	0.80	0.65	2.54	0.57	1.89
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	62.23	20.32	16.51	64.52	14.48	48.01
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	36.95	15.35	14.26	48.30	9.35	28.91
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.45	0.60	0.56	1.90	0.37	1.14
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.02			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.41			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.02			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.72**			

Table 2.1.4.94 Consumptive use of irrigation water, CU_W, calculations - 1973 - high stream flow year - Above Pathfinder subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.20	4.60	7.32	5.64	2.06	0.99
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.48	116.84	185.93	143.26	52.32	25.15
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.81			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.45	0.80	0.65	2.54	0.57	1.89
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	62.23	20.32	16.51	64.52	14.48	48.01
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	37.07	15.54	14.55	49.06	9.40	28.99
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.46	0.61	0.57	1.93	0.37	1.14
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.08			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.41			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.08			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.73**			
dry beans	Not cultivated						
sugar beets	Not cultivated						
corn	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.69	1.96	5.73	4.17	2.37	1.54
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.46			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.90			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.46			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.41			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			11.46			
H=B-G	**annual consumptive use of irrigation water (inches)**			**5.00**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.91	2.53	5.87	3.89	3.16	2.05
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.41			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.90			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.46			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.41			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			11.46			
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.95**			

Table 2.1.4.94 Consumptive use of irrigation water, CU_W, calculations - 1973 - high stream flow year - Above Pathfinder subbasin (cont)

	Crop						
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.91	2.36	4.25	4.17	2.73	1.77
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.19			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.90			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.46			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.41			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			11.46			
H=B-G	**annual consumptive use of irrigation water (inches)**			**4.73**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.95 Consumptive use of irrigation water, CU_W, calculations - 1997 - high stream flow year - Above Pathfinder subbasin

	Crop							
winter wheat	Not cultivated							
spring wheat	Not cultivated							
barley	Not cultivated							
oats	Not cultivated							
dry beans	Not cultivated							
sugar beets	Not cultivated							
corn	Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.86	2.16	6.10	4.73	2.33	1.66	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.84				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.50				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.03				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.93				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.47				
G=D+F	total annual effective precipitation (inches)			11.50				
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.34**				
other hay		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.03	2.51	5.62	3.97	2.79	1.99	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.91				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.50				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.03				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.93				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.47				
G=D+F	total annual effective precipitation (inches)			11.50				
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.41**				
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.03	2.32	4.08	4.26	2.41	1.72	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.82				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.50				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.03				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.93				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.47				
G=D+F	total annual effective precipitation (inches)			11.50				
H=B-G	**annual consumptive use of irrigation water (inches)**			**4.32**				

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.

Table 2.1.4.96 Consumptive use of irrigation water, CU_W, calculations - 2001 - low stream flow year - Above Pathfinder subbasin

	Crop							
winter wheat								
	Not cultivated							
spring wheat								
	Not cultivated							
barley								
	Not cultivated							
oats								
	Not cultivated							
dry beans								
	Not cultivated							
sugar beets								
	Not cultivated							
corn								
	Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.93	2.08	5.89	4.70	2.41	1.70	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.71				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.62				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			4.39				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.27				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.14				
G=D+F	total annual effective precipitation (inches)			5.53				
H=B-G	**annual consumptive use of irrigation water (inches)**			**12.18**				
other hay		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.87	1.88	4.24	3.07	2.26	1.59	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.91				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.62				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			4.39				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.27				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.14				
G=D+F	total annual effective precipitation (inches)			5.53				
H=B-G	**annual consumptive use of irrigation water (inches)**			**8.38**				
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.87	1.75	3.07	3.29	1.94	1.37	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.29				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.62				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			4.39				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.27				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.14				
G=D+F	total annual effective precipitation (inches)			5.53				
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.76**				

Notes:

(1) See Table 2.1.4.58.

(2) See Appendix 2.1.4.E.

Table 2.1.4.97 Consumptive use of irrigation water, CU_W, calculations - 1987 - low stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.44	3.32	6.16	5.49	2.34	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.58	84.33	156.46	139.45	59.44	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.75			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.60	1.61	0.94	1.05	1.17	0.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.24	40.89	23.88	26.67	29.72	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.61	28.49	19.96	21.44	19.97	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.38	1.12	0.79	0.84	0.79	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.92			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.27			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.14			
K=H+J	total annual effective precipitation (inches)			6.06			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.69**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.26	5.82	5.58	2.57	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	57.40	147.83	141.73	65.28	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.23			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.60	1.61	0.94	1.05	1.17	0.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	40.89	23.88	26.67	29.72	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	26.85	19.58	21.54	20.22	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	1.06	0.77	0.85	0.80	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.48			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.27			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.14			
K=H+J	total annual effective precipitation (inches)			5.62			
L=C-K	**annual consumptive use of irrigation water (inches)**			**10.61**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.86	4.50	7.14	5.50	1.80	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.24	114.30	181.36	139.70	45.72	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.81			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.60	1.61	0.94	1.05	1.17	0.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.24	40.89	23.88	26.67	29.72	6.10
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.84	30.43	21.08	21.45	19.37	2.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.39	1.20	0.83	0.84	0.76	0.11
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.13			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.27			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.14			
K=H+J	total annual effective precipitation (inches)			6.27			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.54**			

Table 2.1.4.97 Consumptive use of irrigation water, CU_W, calculations - 1987 - low stream flow year - Above Pathfinder subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.99	4.82	7.65	5.90	1.93	1.08
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.55	122.43	194.31	149.86	49.02	27.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.37			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.60	1.61	0.94	1.05	1.17	0.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.24	40.89	23.88	26.67	29.72	6.10
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.91	30.98	21.69	21.93	19.51	2.78
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.39	1.22	0.85	0.86	0.77	0.11
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.20			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.27			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.14			
K=H+J	total annual effective precipitation (inches)			6.34			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.03**			
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.96	1.70	4.97	3.62	1.84	1.40
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.49			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.33			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.27			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.14			
G=D+F	total annual effective precipitation (inches)			7.47			
H=B-G	**annual consumptive use of irrigation water (inches)**			**7.02**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.63	2.84	6.59	4.36	3.18	2.40
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.00			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.33			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.27			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.14			
G=D+F	total annual effective precipitation (inches)			7.47			
H=B-G	**annual consumptive use of irrigation water (inches)**			**13.53**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.63	2.64	4.78	4.67	2.74	2.07
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.53			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.33			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.27			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.14			
G=D+F	total annual effective precipitation (inches)			7.47			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.06**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.98 Consumptive use of irrigation water, CU_W, calculations - 1981 - low stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.50	2.98	6.58	5.97	2.60	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.10	75.69	167.13	151.64	66.04	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.63			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.02	3.59	0.21	1.40	0.71	0.84
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.91	91.19	5.33	35.56	18.03	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.67	57.38	2.94	29.00	12.28	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.66	2.26	0.12	1.14	0.48	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.66			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			6.57			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.06**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	1.79	5.48	5.36	2.51	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	45.47	139.19	136.14	63.75	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.14			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.02	3.59	0.21	1.40	0.71	0.84
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	91.19	5.33	35.56	18.03	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	53.69	2.76	28.03	12.21	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	2.11	0.11	1.10	0.48	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.80			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			5.71			
L=C-K	**annual consumptive use of irrigation water (inches)**			**9.43**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.74	3.62	6.86	5.40	1.80	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.20	91.95	174.24	137.16	45.72	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.36			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.02	3.59	0.21	1.40	0.71	0.84
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.91	91.19	5.33	35.56	18.03	21.34
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.90	59.47	2.98	28.09	11.74	13.32
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.67	2.34	0.12	1.11	0.46	0.52
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.22			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			7.13			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.23**			

Table 2.1.4.98 Consumptive use of irrigation water, CU_w, calculations - 1981 - low stream flow year - Above Pathfinder subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.61	3.34	6.33	4.98	1.66	0.87
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.89	84.84	160.78	126.49	42.16	22.10
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.79			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.02	3.59	0.21	1.40	0.71	0.84
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.91	91.19	5.33	35.56	18.03	21.34
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.78	58.55	2.90	27.44	11.65	13.26
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.66	2.31	0.11	1.08	0.46	0.52
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.14			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			7.05			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.74**			
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.26	1.93	6.71	4.98	2.59	1.85
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.32			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.76			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.37			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.91			
G=D+F	total annual effective precipitation (inches)			9.28			
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.04**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.59	2.38	6.57	4.44	3.30	2.36
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.64			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.76			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.37			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.91			
G=D+F	total annual effective precipitation (inches)			9.28			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.36**			

Table 2.1.4.98 Consumptive use of irrigation water, CU_W, calculations - 1981 - low stream flow year - Above Pathfinder subbasin (cont)

	Crop						
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.59	2.21	4.76	4.76	2.85	2.03
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.20			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.76			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.37			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.91			
G=D+F	total annual effective precipitation (inches)			9.28			
H=B-G	**annual consumptive use of irrigation water (inches)**			**8.92**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.99 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.58	3.92	6.36	5.79	2.70	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.13	99.57	161.54	147.07	68.58	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.35			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.81	3.09	1.08	2.43	0.77	0.61
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	20.57	78.49	27.43	61.72	19.56	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.29	53.02	23.13	47.55	13.44	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.52	2.09	0.91	1.87	0.53	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.92			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.77			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.89			
K=H+J	total annual effective precipitation (inches)			7.81			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.54**			
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.66	4.32	6.00	4.73	1.70	0.89
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.16	109.73	152.40	120.14	43.18	22.61
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.30			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.81	3.09	1.08	2.43	0.77	0.61
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	20.57	78.49	27.43	61.72	19.56	15.49
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.35	54.22	22.67	44.82	12.71	9.48
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.53	2.13	0.89	1.76	0.50	0.37
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.18			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.77			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.89			
K=H+J	total annual effective precipitation (inches)			8.07			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.23**			
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						

Table 2.1.4.99 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - Above Pathfinder subbasin (cont)

	Crop						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	2.15	5.50	4.09	2.28	1.64
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.78			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.79			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.35			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.77			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.89			
G=D+F	total annual effective precipitation (inches)			10.24			
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.54**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.27	2.37	4.81	3.25	2.60	1.86
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.16			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.79			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.35			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.77			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.89			
G=D+F	total annual effective precipitation (inches)			10.24			
H=B-G	**annual consumptive use of irrigation water (inches)**			**5.92**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.27	2.20	3.48	3.48	2.24	1.60
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.27			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.79			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.35			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.77			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.89			
G=D+F	total annual effective precipitation (inches)			10.24			
H=B-G	**annual consumptive use of irrigation water (inches)**			**4.03**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.100 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.31	3.45	5.75	5.81	2.32	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.27	87.63	146.05	147.57	58.93	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.64			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.29	0.86	1.31	1.08	1.15	1.66
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	7.37	21.84	33.27	27.43	29.21	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	3.82	15.68	26.90	22.43	19.61	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.15	0.62	1.06	0.88	0.77	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.48			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.89			
K=H+J	total annual effective precipitation (inches)			5.37			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.27**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.62	6.07	6.61	2.83	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	66.55	154.18	167.89	71.88	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.13			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.29	0.86	1.31	1.08	1.15	1.66
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	21.84	33.27	27.43	29.21	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	14.97	27.39	23.45	20.18	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	0.59	1.08	0.92	0.79	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.38			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.89			
K=H+J	total annual effective precipitation (inches)			5.27			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.86**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.71	4.71	6.73	5.89	1.80	0.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.43	119.63	170.94	149.61	45.72	24.38
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.80			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.29	0.86	1.31	1.08	1.15	1.66
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	7.37	21.84	33.27	27.43	29.21	42.16
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	3.91	16.83	28.42	22.53	19.05	25.69
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.15	0.66	1.12	0.89	0.75	1.01
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.58			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.89			
K=H+J	total annual effective precipitation (inches)			6.47			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.33**			

Table 2.1.4.100 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Above Pathfinder subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.74	4.81	6.87	6.02	1.84	0.98
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.20	122.17	174.50	152.91	46.74	24.89
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.26			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.29	0.86	1.31	1.08	1.15	1.66
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	7.37	21.84	33.27	27.43	29.21	42.16
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	3.91	16.92	28.64	22.69	19.10	25.72
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.15	0.67	1.13	0.89	0.75	1.01
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.60			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.89			
K=H+J	total annual effective precipitation (inches)			6.49			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.77**			
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	2.29	6.01	4.97	2.37	1.71
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.47			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.34			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.02			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.78			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.89			
G=D+F	total annual effective precipitation (inches)			7.91			
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.56**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	1.70	3.55	2.67	1.82	1.32
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			11.91			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.34			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.02			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.78			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.89			
G=D+F	total annual effective precipitation (inches)			7.91			
H=B-G	**annual consumptive use of irrigation water (inches)**			**4.00**			

Table 2.1.4.100 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Above Pathfinder subbasin (cont)

	Crop						
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	1.58	2.57	2.86	1.57	1.13
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			10.56			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.34			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.02			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.78			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.89			
G=D+F	total annual effective precipitation (inches)			7.91			
H=B-G	**annual consumptive use of irrigation water (inches)**			**2.65**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.101 Consumptive use of irrigation water, CU_W, calculations - 1977 - low stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.44	3.81	7.46	6.26	2.59	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.58	96.77	189.48	159.00	65.79	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.56			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.75	2.98	0.38	1.64	1.28	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	44.45	75.69	9.65	41.66	32.51	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.71	51.03	7.83	34.16	22.06	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.09	2.01	0.31	1.34	0.87	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.62			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.29			
K=H+J	total annual effective precipitation (inches)			6.91			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.65**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.84	7.72	6.98	3.11	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	72.14	196.09	177.29	78.99	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.65			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.75	2.98	0.38	1.64	1.28	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	75.69	9.65	41.66	32.51	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	48.34	7.95	35.56	22.71	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	1.90	0.31	1.40	0.89	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.50			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.29			
K=H+J	total annual effective precipitation (inches)			5.79			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.86**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.86	5.15	8.63	6.28	1.99	1.12
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.24	130.81	219.20	159.51	50.55	28.45
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.03			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.75	2.98	0.38	1.64	1.28	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	44.45	75.69	9.65	41.66	32.51	10.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.36	55.00	8.36	34.20	21.33	6.24
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.12	2.17	0.33	1.35	0.84	0.25
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.06			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.29			
K=H+J	total annual effective precipitation (inches)			7.35			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.68**			

Table 2.1.4.101 Consumptive use of irrigation water, CU_W, calculations - 1977 - low stream flow year - Above Pathfinder subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.79	4.95	8.29	6.03	1.91	1.08
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.47	125.73	210.57	153.16	48.51	27.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.05			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.75	2.98	0.38	1.64	1.28	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	44.45	75.69	9.65	41.66	32.51	10.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.25	54.39	8.20	33.73	21.24	6.23
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.11	2.14	0.32	1.33	0.84	0.25
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.99			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.29			
K=H+J	total annual effective precipitation (inches)			7.28			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.77**			
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.90	1.84	5.67	3.89	1.93	1.47
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.70			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.45			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.03			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.29			
G=D+F	total annual effective precipitation (inches)			9.32			
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.38**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	2.28	5.57	3.48	2.47	1.87
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.81			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.45			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.03			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.29			
G=D+F	total annual effective precipitation (inches)			9.32			
H=B-G	**annual consumptive use of irrigation water (inches)**			**7.49**			

Table 2.1.4.101 Consumptive use of irrigation water, CU_W, calculations - 1977 - low stream flow year - Above Pathfinder subbasin (cont)

	Crop						
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	2.11	4.04	3.72	2.12	1.61
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.74			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.45			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.03			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.29			
G=D+F	total annual effective precipitation (inches)			9.32			
H=B-G	**annual consumptive use of irrigation water (inches)**			**5.42**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.102 Consumptive use of irrigation water, CU_W, calculations - 1995 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	1.82	5.70	4.83	2.79	1.76
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.90			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.83			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.24			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.28			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.14			
G=D+F	total annual effective precipitation (inches)			13.38			
H=B-G	**annual consumptive use of irrigation water (inches)**			**4.52**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.18	2.11	5.21	4.02	3.33	2.09
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.94			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.83			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.24			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.28			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.14			
G=D+F	total annual effective precipitation (inches)			13.38			
H=B-G	**annual consumptive use of irrigation water (inches)**			**4.56**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.18	1.96	3.78	4.31	2.87	1.80
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.90			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.83			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.24			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.28			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.14			
G=D+F	total annual effective precipitation (inches)			13.38			
H=B-G	**annual consumptive use of irrigation water (inches)**			**2.52**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.

Table 2.1.4.103 Consumptive use of irrigation water, CU_w, calculations - 1974 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	3.75	6.77	6.08	2.60	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.73	95.25	171.96	154.43	66.04	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.41			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.92	0.65	1.47	1.62	0.32	0.96
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	48.77	16.51	37.34	41.15	8.13	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.77	11.92	31.75	33.44	4.74	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.17	0.47	1.25	1.32	0.19	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.40			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.49			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.75			
K=H+J	total annual effective precipitation (inches)			7.15			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.26**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	3.00	7.50	7.26	3.34	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	76.20	190.50	184.40	84.84	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.10			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.92	0.65	1.47	1.62	0.32	0.96
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	16.51	37.34	41.15	8.13	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	11.43	33.07	35.71	4.94	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	0.45	1.30	1.41	0.19	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.49			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.75			
K=H+J	total annual effective precipitation (inches)			6.10			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.00**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.58	5.14	7.92	6.17	2.02	1.05
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.13	130.56	201.17	156.72	51.31	26.67
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.88			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.92	0.65	1.47	1.62	0.32	0.96
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	48.77	16.51	37.34	41.15	8.13	24.38
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.39	12.88	33.85	33.61	4.59	15.31
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.20	0.51	1.33	1.32	0.18	0.60
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.14			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.49			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.75			
K=H+J	total annual effective precipitation (inches)			7.89			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.99**			

oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.51	4.92	7.58	5.90	1.93	1.00
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.35	124.97	192.53	149.86	49.02	25.40
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.84			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.92	0.65	1.47	1.62	0.32	0.96
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	48.77	16.51	37.34	41.15	8.13	24.38
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.28	12.73	33.22	33.10	4.56	15.27
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.19	0.50	1.31	1.30	0.18	0.60
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.08			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.49			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.75			
K=H+J	total annual effective precipitation (inches)			7.83			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.01**			

Table 2.1.4.103 Consumptive use of irrigation water, CU_W, calculations - 1974 - normal or average stream flow year - Above Pathfinder subbasin (cont)

	Crop						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.90	2.16	6.13	4.50	2.30	1.61
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.60			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.93			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.58			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.49			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.75			
G=D+F	total annual effective precipitation (inches)			9.33			
H=B-G	**annual consumptive use of irrigation water (inches)**			**8.27**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	2.83	6.37	4.25	3.11	2.18
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.95			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.93			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.58			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.49			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.75			
G=D+F	total annual effective precipitation (inches)			9.33			
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.62**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	2.63	4.62	4.56	2.69	1.88
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.59			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.93			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.58			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.49			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.75			
G=D+F	total annual effective precipitation (inches)			9.33			
H=B-G	**annual consumptive use of irrigation water (inches)**			**8.26**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.104 Consumptive use of irrigation water, CU_w, calculations - 1980 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.19	3.38	6.88	6.15	2.58	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.23	85.85	174.75	156.21	65.53	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.18			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.58	1.78	0.01	0.31	1.00	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	14.73	45.21	0.25	7.87	25.40	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.13	31.36	0.00	5.52	17.37	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.36	1.23	0.00	0.22	0.68	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.49			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.44			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			5.49			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.69**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.34	6.61	6.36	2.87	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	59.44	167.89	161.54	72.90	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.18			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.58	1.78	0.01	0.31	1.00	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	45.21	0.25	7.87	25.40	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	29.59	0.00	5.58	17.65	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	1.16	0.00	0.22	0.69	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.07			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.44			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			5.07			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.11**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.56	4.62	8.06	6.25	2.01	1.07
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.62	117.35	204.72	158.75	51.05	27.18
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.57			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.58	1.78	0.01	0.31	1.00	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	14.73	45.21	0.25	7.87	25.40	19.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.32	33.61	0.00	5.55	16.82	12.27
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.37	1.32	0.00	0.22	0.66	0.48
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.05			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.44			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			6.05			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.52**			

oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.56	4.62	8.06	6.25	2.01	1.07
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.62	117.35	204.72	158.75	51.05	27.18
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.57			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.58	1.78	0.01	0.31	1.00	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	14.73	45.21	0.25	7.87	25.40	19.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.32	33.61	0.00	5.55	16.82	12.27
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.37	1.32	0.00	0.22	0.66	0.48
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.05			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.44			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			6.05			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.52**			

Table 2.1.4.104 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - Above Pathfinder subbasin (cont)

	Crop							
dry beans								
	Not cultivated							
sugar beets								
	Not cultivated							
corn								
	Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.94	2.04	6.55	4.80	2.40	1.74	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.47				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.45				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			4.23				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.44				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00				
G=D+F	total annual effective precipitation (inches)			7.23				
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.24**				
other hay		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.17	2.49	6.34	4.21	3.02	2.19	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.42				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.45				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			4.23				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.44				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00				
G=D+F	total annual effective precipitation (inches)			7.23				
H=B-G	**annual consumptive use of irrigation water (inches)**			**12.19**				
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.17	2.32	4.59	4.51	2.61	1.89	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.09				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.45				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			4.23				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.44				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00				
G=D+F	total annual effective precipitation (inches)			7.23				
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.86**				

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.105 Consumptive use of irrigation water, CU_w, calculations - 1982 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.40	3.66	6.67	6.57	2.95	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.56	92.96	169.42	166.88	74.93	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.25			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.53	1.37	1.31	1.66	0.36	2.45
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.46	34.80	33.27	42.16	9.14	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.35	24.98	28.32	35.14	5.67	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.33	0.98	1.11	1.38	0.22	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.02			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			5.93			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.32**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.51	6.38	6.76	3.27	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	63.75	162.05	171.70	83.06	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.92			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.53	1.37	1.31	1.66	0.36	2.45
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	34.80	33.27	42.16	9.14	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	23.42	27.87	35.52	5.77	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	0.92	1.10	1.40	0.23	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.65			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			5.56			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.36**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.64	4.46	6.98	5.96	2.05	0.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.66	113.28	177.29	151.38	52.07	23.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.02			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.53	1.37	1.31	1.66	0.36	2.45
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.46	34.80	33.27	42.16	9.14	62.23
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.46	26.12	28.82	33.97	5.39	36.52
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.33	1.03	1.13	1.34	0.21	1.44
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.48			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			7.39			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.63**			

oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.64	4.46	6.98	5.96	2.05	0.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.66	113.28	177.29	151.38	52.07	23.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.02			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.53	1.37	1.31	1.66	0.36	2.45
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.46	34.80	33.27	42.16	9.14	62.23
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.46	26.12	28.82	33.97	5.39	36.52
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.33	1.03	1.13	1.34	0.21	1.44
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.48			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			7.39			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.63**			

Table 2.1.4.105 Consumptive use of irrigation water, CU_w, calculations - 1982 - normal or average stream flow year - Above Pathfinder subbasin (cont)

	Crop							
dry beans								
	Not cultivated							
sugar beets								
	Not cultivated							
corn								
	Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.13	2.27	6.52	5.25	2.82	1.73	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.72				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.69				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.31				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.91				
G=D+F	total annual effective precipitation (inches)			9.22				
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.50**				
other hay		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.34	2.64	6.01	4.40	3.38	2.09	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.86				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.69				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.31				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.91				
G=D+F	total annual effective precipitation (inches)			9.22				
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.64**				
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.34	2.45	4.36	4.72	2.92	1.80	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.59				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.69				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.31				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.91				
G=D+F	total annual effective precipitation (inches)			9.22				
H=B-G	**annual consumptive use of irrigation water (inches)**			**8.37**				

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.106 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.41	3.47	6.72	6.70	2.72	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.81	88.14	170.69	170.18	69.09	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.02			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.67	2.97	0.47	0.52	0.80	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.02	75.44	11.94	13.21	20.32	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.81	49.93	9.78	10.98	13.99	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.43	1.97	0.39	0.43	0.55	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.77			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.79			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.90			
K=H+J	total annual effective precipitation (inches)			5.67			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.35**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.61	7.02	7.53	3.30	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	66.29	178.31	191.26	83.82	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.46			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.67	2.97	0.47	0.52	0.80	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	75.44	11.94	13.21	20.32	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	47.59	9.94	11.50	14.45	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	1.87	0.39	0.45	0.57	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.28			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.79			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.90			
K=H+J	total annual effective precipitation (inches)			5.18			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.28**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.77	4.54	7.53	6.51	2.03	1.09
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.96	115.32	191.26	165.35	51.56	27.69
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.47			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.67	2.97	0.47	0.52	0.80	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.02	75.44	11.94	13.21	20.32	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.03	53.00	10.23	10.87	13.46	11.95
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.43	2.09	0.40	0.43	0.53	0.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.79			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.90			
K=H+J	total annual effective precipitation (inches)			6.25			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.22**			

oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.77	4.54	7.53	6.51	2.03	1.09
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.96	115.32	191.26	165.35	51.56	27.69
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.47			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.67	2.97	0.47	0.52	0.80	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.02	75.44	11.94	13.21	20.32	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.03	53.00	10.23	10.87	13.46	11.95
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.43	2.09	0.40	0.43	0.53	0.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.79			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.90			
K=H+J	total annual effective precipitation (inches)			6.25			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.22**			

Table 2.1.4.106 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - Above Pathfinder subbasin (cont)

	Crop							
dry beans								
	Not cultivated							
sugar beets								
	Not cultivated							
corn								
	Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.88	1.67	5.07	4.14	2.01	1.46	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.23				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.17				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.86				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.79				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.90				
G=D+F	total annual effective precipitation (inches)			7.76				
H=B-G	**annual consumptive use of irrigation water (inches)**			**7.47**				
other hay		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.40	2.59	6.26	4.64	3.22	2.35	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.46				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.17				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.86				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.79				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.90				
G=D+F	total annual effective precipitation (inches)			7.76				
H=B-G	**annual consumptive use of irrigation water (inches)**			**12.70**				
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.40	2.40	4.53	4.97	2.78	2.03	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.11				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.17				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.86				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.79				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.90				
G=D+F	total annual effective precipitation (inches)			7.76				
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.35**				

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.107 Consumptive use of irrigation water, CU_W, calculations - 1996 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	2.04	6.27	4.77	2.56	1.59
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.22			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.08			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.78			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.28			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.14			
G=D+F	total annual effective precipitation (inches)			7.92			
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.30**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.18	2.38	5.80	4.01	3.07	1.91
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.35			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.08			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.78			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.28			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.14			
G=D+F	total annual effective precipitation (inches)			7.92			
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.43**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.18	2.22	4.20	4.30	2.65	1.65
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.20			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.08			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.78			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.28			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.14			
G=D+F	total annual effective precipitation (inches)			7.92			
H=B-G	**annual consumptive use of irrigation water (inches)**			**8.28**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.

Table 2.1.4.108 Consumptive use of irrigation water, CU_w, calculations - 1979 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.13	3.01	5.89	5.60	2.18	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.70	76.45	149.61	142.24	55.37	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.81			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.07	1.70	0.32	0.37	2.78	0.17
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	27.18	43.18	8.13	9.40	70.61	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	17.12	29.45	5.69	6.82	43.82	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.67	1.16	0.22	0.27	1.73	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.05			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.28			
K=H+J	total annual effective precipitation (inches)			6.33			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.48**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.67	7.28	7.44	3.11	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	67.82	184.91	188.98	78.99	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.50			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.07	1.70	0.32	0.37	2.78	0.17
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	43.18	8.13	9.40	70.61	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	28.89	6.15	7.56	46.15	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	1.14	0.24	0.30	1.82	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.50			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.28			
K=H+J	total annual effective precipitation (inches)			5.78			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.72**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.11	3.10	5.20	4.28	1.27	0.79
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.19	78.74	132.08	108.71	32.26	20.07
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.75			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.07	1.70	0.32	0.37	2.78	0.17
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	27.18	43.18	8.13	9.40	70.61	4.32
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	17.10	29.60	5.48	6.34	41.64	1.30
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.67	1.17	0.22	0.25	1.64	0.05
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.00			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.28			
K=H+J	total annual effective precipitation (inches)			6.28			
L=C-K	**annual consumptive use of irrigation water (inches)**			**9.47**			

oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.64	4.58	7.68	6.33	1.88	1.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.66	116.33	195.07	160.78	47.75	29.72
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.28			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.07	1.70	0.32	0.37	2.78	0.17
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	27.18	43.18	8.13	9.40	70.61	4.32
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	17.61	32.15	6.29	7.11	43.09	1.33
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.69	1.27	0.25	0.28	1.70	0.05
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.24			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.28			
K=H+J	total annual effective precipitation (inches)			6.52			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.76**			

Table 2.1.4.108 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - Above Pathfinder subbasin (cont)

	Crop							
dry beans								
	Not cultivated							
sugar beets								
	Not cultivated							
corn								
	Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	2.00	6.15	4.78	2.22	1.87	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.99				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.40				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.08				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.28				
G=D+F	total annual effective precipitation (inches)			8.36				
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.63**				
other hay		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.34	2.71	6.62	4.68	3.11	2.62	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.08				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.40				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.08				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.28				
G=D+F	total annual effective precipitation (inches)			8.36				
H=B-G	**annual consumptive use of irrigation water (inches)**			**12.72**				
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.34	2.51	4.80	5.01	2.68	2.26	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.60				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.40				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.08				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.28				
G=D+F	total annual effective precipitation (inches)			8.36				
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.24**				

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.109 Consumptive use of irrigation water, CU_W, calculations - 1999 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.86	2.02	5.94	4.86	2.45	1.61
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.74			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.71			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.37			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.30			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.15			
G=D+F	total annual effective precipitation (inches)			8.52			
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.22**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	2.29	5.33	3.96	2.86	1.88
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.32			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.71			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.37			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.30			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.15			
G=D+F	total annual effective precipitation (inches)			8.52			
H=B-G	**annual consumptive use of irrigation water (inches)**			**8.80**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	2.12	3.86	4.25	2.47	1.62
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.32			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.71			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.37			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.30			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.15			
G=D+F	total annual effective precipitation (inches)			8.52			
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.80**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.

Table 2.1.4.110 Consumptive use of irrigation water, CU_W, calculations - 1993 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.28	3.96	6.58	6.58	2.86	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.51	100.58	167.13	167.13	72.64	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.26			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.79	1.89	1.74	0.50	1.00	1.18
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	48.01	44.20	12.70	25.40	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.04	34.22	36.73	10.43	17.64	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.10	1.35	1.45	0.41	0.69	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.00			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.39			
K=H+J	total annual effective precipitation (inches)			7.39			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.87**			
spring wheat	Not cultivated						
barley	Not cultivated						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.40	4.53	6.43	5.57	1.86	0.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.56	115.06	163.32	141.48	47.24	24.38
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.75			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.79	1.89	1.74	0.50	1.00	1.18
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	48.01	44.20	12.70	25.40	29.97
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.22	35.33	36.42	9.85	16.68	18.63
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.11	1.39	1.43	0.39	0.66	0.73
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.71			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.39			
K=H+J	total annual effective precipitation (inches)			8.10			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.65**			
dry beans	Not cultivated						
sugar beets	Not cultivated						
corn	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	2.02	5.28	4.32	2.24	1.56
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.27			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.09			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.69			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.78			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.39			
G=D+F	total annual effective precipitation (inches)			10.08			
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.19**			

Table 2.1.4.110 Consumptive use of irrigation water, CU_W, calculations - 1993 - normal or average stream flow year - Above Pathfinder subbasin (cont)

	Crop							
other hay		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.19	2.79	5.78	4.30	3.19	2.22	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.47				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.09				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.69				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.78				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.39				
G=D+F	total annual effective precipitation (inches)			10.08				
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.39**				

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.19	2.59	4.19	4.60	2.75	1.92	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.24				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.09				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.69				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.78				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.39				
G=D+F	total annual effective precipitation (inches)			10.08				
H=B-G	**annual consumptive use of irrigation water (inches)**			**7.16**				

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.111 Consumptive use of irrigation water, CU_w, calculations - 1975 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.17	3.48	6.38	6.51	2.84	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.72	88.39	162.05	165.35	72.14	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.38					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.09	2.09	0.58	1.93	0.69	0.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	27.69	53.09	14.73	49.02	17.53	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	17.47	36.50	12.19	40.22	12.08	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.69	1.44	0.48	1.58	0.48	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	4.67					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.68					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.84					
K=H+J	total annual effective precipitation (inches)	7.51					
L=C-K	**annual consumptive use of irrigation water (inches)**	**12.87**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.47	6.29	6.89	3.24	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	62.74	159.77	175.01	82.30	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.89					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.09	2.09	0.58	1.93	0.69	0.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	53.09	14.73	49.02	17.53	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	34.50	12.13	41.08	12.35	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	1.36	0.48	1.62	0.49	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	3.95					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.68					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.84					
K=H+J	total annual effective precipitation (inches)	6.79					
L=C-K	**annual consumptive use of irrigation water (inches)**	**12.10**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.11	3.47	5.44	4.80	1.61	0.83
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.19	88.14	138.18	121.92	40.89	21.08
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.26					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.09	2.09	0.58	1.93	0.69	0.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	27.69	53.09	14.73	49.02	17.53	15.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	17.41	36.48	11.57	36.55	11.28	9.29
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.69	1.44	0.46	1.44	0.44	0.37
H	calculated effective precipitation, Re, Apr-Sep (inches)	4.84					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.68					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.84					
K=H+J	total annual effective precipitation (inches)	7.68					
L=C-K	**annual consumptive use of irrigation water (inches)**	**9.58**					
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.40	4.37	6.87	6.06	2.03	1.04
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.56	111.00	174.50	153.92	51.56	26.42
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.77					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.09	2.09	0.58	1.93	0.69	0.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	27.69	53.09	14.73	49.02	17.53	15.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	17.69	38.36	12.53	39.22	11.54	9.40
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.70	1.51	0.49	1.54	0.45	0.37
H	calculated effective precipitation, Re, Apr-Sep (inches)	5.06					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.68					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.84					
K=H+J	total annual effective precipitation (inches)	7.90					
L=C-K	**annual consumptive use of irrigation water (inches)**	**13.87**					

Table 2.1.4.111 Consumptive use of irrigation water, CU_W, calculations - 1975 - normal or average stream flow year - Above Pathfinder subbasin (cont)

	Crop						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	1.97	5.71	4.76	2.48	1.73
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.50					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	6.98					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.63					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	5.68					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.84					
G=D+F	total annual effective precipitation (inches)	9.47					
H=B-G	**annual consumptive use of irrigation water (inches)**	**8.03**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	2.25	5.16	3.91	2.91	2.03
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.26					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	6.98					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.63					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	5.68					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.84					
G=D+F	total annual effective precipitation (inches)	9.47					
H=B-G	**annual consumptive use of irrigation water (inches)**	**7.79**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	2.09	3.74	4.19	2.52	1.75
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	15.29					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	6.98					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.63					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	5.68					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.84					
G=D+F	total annual effective precipitation (inches)	9.47					
H=B-G	**annual consumptive use of irrigation water (inches)**	**5.82**					

Notes:

(1) See Table 2.1.4.58.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.112 Consumptive use of irrigation water, CU_W, calculations - 1998 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.98	2.25	5.22	4.79	2.46	1.85
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.55			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.58			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.15			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.71			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.86			
G=D+F	total annual effective precipitation (inches)			10.01			
H=B-G	**annual consumptive use of irrigation water (inches)**			**7.54**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.17	2.62	4.81	4.02	2.95	2.22
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.79			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.58			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.15			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.71			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.86			
G=D+F	total annual effective precipitation (inches)			10.01			
H=B-G	**annual consumptive use of irrigation water (inches)**			**7.78**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.17	2.43	3.49	4.30	2.54	1.92
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.85			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.58			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.15			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.71			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.86			
G=D+F	total annual effective precipitation (inches)			10.01			
H=B-G	**annual consumptive use of irrigation water (inches)**			**5.84**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.

Table 2.1.4.113 Consumptive use of irrigation water, CU_w, calculations - 1988 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.54	3.82	7.01	6.67	2.81	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.12	97.03	178.05	169.42	71.37	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.85			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.50	1.50	0.66	0.29	0.39	1.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	38.10	16.76	7.37	9.91	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.87	27.44	14.53	5.16	6.25	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	1.08	0.57	0.20	0.25	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.41			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.61			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.31			
K=H+J	total annual effective precipitation (inches)			4.72			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.13**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.33	5.94	6.08	2.76	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	59.18	150.88	154.43	70.10	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.11			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.50	1.50	0.66	0.29	0.39	1.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	38.10	16.76	7.37	9.91	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	25.25	13.69	4.99	6.23	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	0.99	0.54	0.20	0.25	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			1.98			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.61			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.31			
K=H+J	total annual effective precipitation (inches)			4.29			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.82**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.90	4.94	7.77	6.42	2.08	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.26	125.48	197.36	163.07	52.83	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.12			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.50	1.50	0.66	0.29	0.39	1.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	38.10	16.76	7.37	9.91	33.78
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.03	29.21	15.17	5.08	6.00	20.94
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.32	1.15	0.60	0.20	0.24	0.82
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.33			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.61			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.31			
K=H+J	total annual effective precipitation (inches)			5.64			
L=C-K	**annual consumptive use of irrigation water (inches)**			**18.48**			

oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.42	3.70	5.82	4.81	1.56	0.76
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.07	93.98	147.83	122.17	39.62	19.30
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.07			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.50	1.50	0.66	0.29	0.39	1.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	38.10	16.76	7.37	9.91	33.78
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.82	27.25	13.60	4.65	5.83	20.65
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	1.07	0.54	0.18	0.23	0.81
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.14			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.61			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.31			
K=H+J	total annual effective precipitation (inches)			5.45			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.62**			

Table 2.1.4.113 Consumptive use of irrigation water, CU_w, calculations - 1988 - normal or average stream flow year - Above Pathfinder subbasin (cont)

	Crop						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	2.16	6.23	4.85	2.44	1.61
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.41			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.66			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			4.43			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.61			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.31			
G=D+F	total annual effective precipitation (inches)			6.74			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.67**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.34	2.53	5.80	4.11	2.95	1.95
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.68			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.66			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			4.43			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.61			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.31			
G=D+F	total annual effective precipitation (inches)			6.74			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.94**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.34	2.35	4.20	4.40	2.55	1.68
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.52			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.66			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			4.43			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.61			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.31			
G=D+F	total annual effective precipitation (inches)			6.74			
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.78**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.114 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.35	3.98	6.48	6.70	2.69	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.29	101.09	164.59	170.18	68.33	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.20					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.20	1.20	1.38	1.47	0.98	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.48	30.48	35.05	37.34	24.89	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.36	22.42	29.44	31.62	17.13	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.76	0.88	1.16	1.24	0.67	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	4.71					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.06					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.53					
K=H+J	total annual effective precipitation (inches)	7.24					
L=C-K	**annual consumptive use of irrigation water (inches)**	**13.96**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.90	6.55	7.30	3.16	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	73.66	166.37	185.42	80.26	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.91					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.20	1.20	1.38	1.47	0.98	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	30.48	35.05	37.34	24.89	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	21.11	29.55	32.70	17.59	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	0.83	1.16	1.29	0.69	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	3.97					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.06					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.53					
K=H+J	total annual effective precipitation (inches)	6.50					
L=C-K	**annual consumptive use of irrigation water (inches)**	**13.41**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.65	5.10	7.10	6.37	1.96	1.07
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.91	129.54	180.34	161.80	49.78	27.18
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	23.25					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.20	1.20	1.38	1.47	0.98	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.48	30.48	35.05	37.34	24.89	7.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.68	23.87	30.47	31.05	16.45	3.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.77	0.94	1.20	1.22	0.65	0.15
H	calculated effective precipitation, Re, Apr-Sep (inches)	4.93					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.06					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.53					
K=H+J	total annual effective precipitation (inches)	7.46					
L=C-K	**annual consumptive use of irrigation water (inches)**	**15.79**					
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.65	5.10	7.10	6.37	1.96	1.07
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.91	129.54	180.34	161.80	49.78	27.18
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	23.25					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.20	1.20	1.38	1.47	0.98	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.48	30.48	35.05	37.34	24.89	7.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.68	23.87	30.47	31.05	16.45	3.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.77	0.94	1.20	1.22	0.65	0.15
H	calculated effective precipitation, Re, Apr-Sep (inches)	4.93					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.06					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.53					
K=H+J	total annual effective precipitation (inches)	7.46					
L=C-K	**annual consumptive use of irrigation water (inches)**	**15.79**					

Table 2.1.4.114 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - Above Pathfinder subbasin (cont)

Crop							
dry beans							
Not cultivated							
sugar beets							
Not cultivated							
corn							
Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.79	1.79	4.57	3.87	1.85	1.37
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	14.24					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	7.06					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.71					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	5.06					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.53					
G=D+F	total annual effective precipitation (inches)	9.24					
H=B-G	**annual consumptive use of irrigation water (inches)**	**5.00**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.25	2.77	5.63	4.33	2.97	2.19
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.14					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	7.06					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.71					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	5.06					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.53					
G=D+F	total annual effective precipitation (inches)	9.24					
H=B-G	**annual consumptive use of irrigation water (inches)**	**9.90**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.25	2.58	4.08	4.64	2.57	1.89
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.01					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	7.06					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.71					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	5.06					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.53					
G=D+F	total annual effective precipitation (inches)	9.24					
H=B-G	**annual consumptive use of irrigation water (inches)**	**7.77**					

Notes:

(1) See Table 2.1.4.58.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.115 Consumptive use of irrigation water, CU_w, calculations - 1972 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.50	4.13	7.28	6.99	3.03	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.10	104.90	184.91	177.55	76.96	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.93			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.35	1.00	1.60	0.48	1.22	1.06
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.29	25.40	40.64	12.19	30.99	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.83	18.94	35.34	10.17	21.60	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.86	0.75	1.39	0.40	0.85	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.25			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.77			
K=H+J	total annual effective precipitation (inches)			6.02			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.91**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	--	2.87	7.03	7.27	3.39	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	--	72.90	178.56	184.66	86.11	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.56			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.35	1.00	1.60	0.48	1.22	1.06
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	--	25.40	40.64	12.19	30.99	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	--	17.65	34.85	10.33	22.04	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	--	0.69	1.37	0.41	0.87	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.34			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.77			
K=H+J	total annual effective precipitation (inches)			5.11			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.45**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.71	4.92	7.42	6.18	2.05	1.02
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.43	124.97	188.47	156.97	52.07	25.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.30			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.35	1.00	1.60	0.48	1.22	1.06
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.29	25.40	40.64	12.19	30.99	26.92
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.09	19.79	35.62	9.72	20.45	16.85
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.87	0.78	1.40	0.38	0.81	0.66
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.90			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.77			
K=H+J	total annual effective precipitation (inches)			6.67			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.63**			

oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.71	4.92	7.42	6.18	2.05	1.02
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.43	124.97	188.47	156.97	52.07	25.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.30			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.35	1.00	1.60	0.48	1.22	1.06
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.29	25.40	40.64	12.19	30.99	26.92
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.09	19.79	35.62	9.72	20.45	16.85
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.87	0.78	1.40	0.38	0.81	0.66
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.90			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.77			
K=H+J	total annual effective precipitation (inches)			6.67			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.63**			

Table 2.1.4.115 Consumptive use of irrigation water, CU_w, calculations - 1972 - normal or average stream flow year - Above Pathfinder subbasin (cont)

	Crop							
dry beans								
	Not cultivated							
sugar beets								
	Not cultivated							
corn								
	Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	2.10	5.83	4.58	2.37	1.59	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.46				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.40				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.08				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.77				
G=D+F	total annual effective precipitation (inches)			7.85				
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.61**				
other hay		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.29	2.68	5.89	4.21	3.12	2.09	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.28				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.40				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.08				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.77				
G=D+F	total annual effective precipitation (inches)			7.85				
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.43**				
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.29	2.49	4.27	4.51	2.69	1.81	
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.06				
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.40				
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.08				
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53				
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.77				
G=D+F	total annual effective precipitation (inches)			7.85				
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.21**				

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.116 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.18	3.46	6.34	5.90	2.64	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.97	87.88	161.04	149.86	67.06	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.52			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.98	3.26	1.72	0.81	0.80	0.49
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.89	82.80	43.69	20.57	20.32	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.74	54.16	35.85	16.92	13.93	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.62	2.13	1.41	0.67	0.55	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.38			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.75			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.88			
K=H+J	total annual effective precipitation (inches)			7.26			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.26**			
spring wheat							
	Not cultivated						
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.42	4.33	6.79	5.47	1.88	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.07	109.98	172.47	138.94	47.75	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.83			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.98	3.26	1.72	0.81	0.80	0.49
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.89	82.80	43.69	20.57	20.32	12.45
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.96	56.86	36.77	16.52	13.35	7.43
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.63	2.24	1.45	0.65	0.53	0.29
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.79			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.75			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.88			
K=H+J	total annual effective precipitation (inches)			7.67			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.16**			
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.32	4.02	6.31	5.09	1.74	0.88
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.53	102.11	160.27	129.29	44.20	22.35
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.36			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.98	3.26	1.72	0.81	0.80	0.49
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.89	82.80	43.69	20.57	20.32	12.45
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.87	55.88	35.79	16.17	13.25	7.41
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.62	2.20	1.41	0.64	0.52	0.29
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.68			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.75			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.88			
K=H+J	total annual effective precipitation (inches)			7.56			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.80**			
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						

Table 2.1.4.116 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Above Pathfinder subbasin (cont)

	Crop						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.89	1.99	5.77	4.38	2.35	1.59
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.97			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.05			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.65			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.75			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.88			
G=D+F	total annual effective precipitation (inches)			9.53			
H=B-G	**annual consumptive use of irrigation water (inches)**			**7.44**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.08	2.37	5.44	3.76	2.88	1.96
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.49			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.05			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.65			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.75			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.88			
G=D+F	total annual effective precipitation (inches)			9.53			
H=B-G	**annual consumptive use of irrigation water (inches)**			**7.96**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.08	2.20	3.94	4.03	2.48	1.68
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.41			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.05			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.65			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.75			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.88			
G=D+F	total annual effective precipitation (inches)			9.53			
H=B-G	**annual consumptive use of irrigation water (inches)**			**5.88**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.117 Consumptive use of irrigation water, CU_W, calculations - 2000 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.08	2.19	6.03	4.80	2.44	1.53
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.07			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.41			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.09			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.16			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.08			
G=D+F	total annual effective precipitation (inches)			7.17			
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.90**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.33	2.65	5.78	4.18	3.04	1.91
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.89			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.41			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.09			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.16			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.08			
G=D+F	total annual effective precipitation (inches)			7.17			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.72**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.33	2.46	4.19	4.48	2.63	1.65
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.74			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.41			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.09			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.16			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.08			
G=D+F	total annual effective precipitation (inches)			7.17			
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.57**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.

Table 2.1.4.118 Consumptive use of irrigation water, CU_W, calculations - 1990 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.38	3.51	6.51	5.83	2.66	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.05	89.15	165.35	148.08	67.56	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.89			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.84	0.85	0.73	1.47	0.69	1.38
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	21.34	21.59	18.54	37.34	17.53	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.65	15.55	15.73	30.12	11.96	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.54	0.61	0.62	1.19	0.47	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.43			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.79			
K=H+J	total annual effective precipitation (inches)			5.22			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.67**			
spring wheat							
	Not cultivated						
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.72	4.59	7.29	5.65	1.98	1.08
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.69	116.59	185.17	143.51	50.29	27.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.31			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.84	0.85	0.73	1.47	0.69	1.38
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	21.34	21.59	18.54	37.34	17.53	35.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.91	16.52	16.43	29.82	11.51	21.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.55	0.65	0.65	1.17	0.45	0.86
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.33			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.79			
K=H+J	total annual effective precipitation (inches)			6.12			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.19**			
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.38	3.69	5.87	4.55	1.59	0.87
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.05	93.73	149.10	115.57	40.39	22.10
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.95			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.84	0.85	0.73	1.47	0.69	1.38
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	21.34	21.59	18.54	37.34	17.53	35.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.65	15.71	15.17	28.05	11.26	21.52
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.54	0.62	0.60	1.10	0.44	0.85
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.15			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.79			
K=H+J	total annual effective precipitation (inches)			5.94			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.01**			
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						

Table 2.1.4.118 Consumptive use of irrigation water, CU_W, calculations - 1990 - normal or average stream flow year - Above Pathfinder subbasin (cont)

	Crop						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.84	1.66	4.85	3.55	1.94	1.42
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.26			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.97			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.67			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.58			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.79			
G=D+F	total annual effective precipitation (inches)			7.46			
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.80**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	2.17	5.05	3.36	2.63	1.92
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.27			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.97			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.67			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.58			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.79			
G=D+F	total annual effective precipitation (inches)			7.46			
H=B-G	**annual consumptive use of irrigation water (inches)**			**8.81**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	2.02	3.66	3.60	2.26	1.66
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.34			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.97			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.67			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.58			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.79			
G=D+F	total annual effective precipitation (inches)			7.46			
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.88**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.119 Consumptive use of irrigation water, CU_W, calculations - 1994 - normal or average stream flow year - Above Pathfinder subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.54	4.64	8.17	7.16	3.21	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.12	117.86	207.52	181.86	81.53	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.72			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.03	0.50	0.81	0.95	0.66	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	26.16	12.70	20.57	24.13	16.76	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.87	9.36	19.21	21.32	11.76	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.66	0.37	0.76	0.84	0.46	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.09			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.44			
K=H+J	total annual effective precipitation (inches)			5.53			
L=C-K	**annual consumptive use of irrigation water (inches)**			**19.19**			
spring wheat	Not cultivated						
barley	Not cultivated						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.28	4.03	6.07	4.61	1.58	0.80
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.51	102.36	154.18	117.09	40.13	20.32
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.37			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.03	0.50	0.81	0.95	0.66	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	26.16	12.70	20.57	24.13	16.76	9.14
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.63	9.04	17.08	18.49	10.73	5.03
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.65	0.36	0.67	0.73	0.42	0.20
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.03			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.44			
K=H+J	total annual effective precipitation (inches)			5.47			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.90**			
dry beans	Not cultivated						
sugar beets	Not cultivated						
corn	Not cultivated						

Table 2.1.4.119 Consumptive use of irrigation water, CU_W, calculations - 1994 - normal or average stream flow year - Above Pathfinder subbasin (cont)

	Crop						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	2.24	6.22	4.46	2.38	1.64
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.91			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.31			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			4.09			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.88			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.44			
G=D+F	total annual effective precipitation (inches)			6.53			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.38**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.19	2.69	5.92	3.86	2.95	2.03
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.64			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.31			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			4.09			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.88			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.44			
G=D+F	total annual effective precipitation (inches)			6.53			
H=B-G	**annual consumptive use of irrigation water (inches)**			**12.11**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.19	2.50	4.28	4.13	2.55	1.75
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.40			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.31			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			4.09			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.88			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.44			
G=D+F	total annual effective precipitation (inches)			6.53			
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.87**			

Notes:
(1) See Table 2.1.4.58.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.120 Summary - unit consumptive use, CU_W (inches) and total consumptive use (acre-feet) - Above Pathfinder subbasin

Unit consumptive use calculation

Crop	Portion of total subbasin irrigated, harvested acreage
Alfalfa	0.09
Other hay	0.52
Irrigated pasture	0.39

No.	Year	Alfalfa	Other hay	Irrigated pasture	Area-weighted average annual subbasin unit consumptive use (inches)
1	1984	6.17	8.42	6.06	7.30
2	1983	9.23	8.88	6.61	8.03
3	1985	11.70	14.48	12.00	13.26
4	1986	4.82	8.60	6.27	7.35
5	1973	5.00	6.95	4.73	5.91
6	1997	6.34	6.41	4.32	5.59
7	1995	4.52	4.56	2.52	3.76
8	1974	8.27	10.62	8.26	9.49
9	1980	11.24	12.19	9.86	11.20
10	1982	10.50	10.64	8.37	9.74
11	1978	7.47	12.70	10.35	11.31
12	1996	10.30	10.43	8.28	9.58
13	1979	9.63	12.72	10.24	11.47
14	1999	9.22	8.80	6.80	8.06
15	1993	6.19	9.39	7.16	8.23
16	1975	8.03	7.79	5.82	7.04
17	1998	7.54	7.78	5.84	7.00
18	1988	11.67	11.94	9.78	11.07
19	1976	5.00	9.90	7.77	8.63
20	1972	9.61	11.43	9.21	10.40
21	1991	7.44	7.96	5.88	7.10
22	2000	10.90	11.72	9.57	10.81
23	1990	6.80	8.81	6.88	7.88
24	1994	11.38	12.11	9.87	11.17
25	2001	12.18	8.38	6.76	8.09
26	1987	7.02	13.53	11.06	11.98
27	1981	10.04	11.36	8.92	10.29
28	1992	6.54	5.92	4.03	5.24
29	1989	10.56	4.00	2.65	4.06
30	1977	6.38	7.49	5.42	6.58
				Average:	**8.59**

Table 2.1.4.120 Summary - unit consumptive use, CU_W (inches) and total consumptive use (acre-feet) - Above Pathfinder subbasin (cont)

A	B	C	D	E	F	G = C/F	H = G x 12
No.	Year (1) (2)	Annual consumptive use of irrigation water, CU_W (acre-feet) (3)			Total *Final Settlement Stipulation* irrigated acreage (4)	Derived average *Final Settlement Stipulation* unit consumptive use (acre-feet per acre)	Derived average *Final Settlement Stipulation* unit consumptive use (inches)
1	1984	90,762			145,024	0.63	7.56
2	1983	91,623			145,376	0.63	7.56
3	1985	150,079	**High stream flow years:**		141,648	1.06	12.72
4	1986	86,237	**Average:**	**94,777**	145,039	0.59	7.08
5	1973	62,936	**Maximum:**	**150,079**	141,897	0.44	5.28
6	1997	87,023	**Minimum:**	**62,936**	149,325	0.58	6.96
7	1995	51,761			148,879	0.35	4.20
8	1974	117,047			139,897	0.84	10.08
9	1980	138,079			140,396	0.98	11.76
10	1982	114,361			150,812	0.76	9.12
11	1978	126,337			139,746	0.90	10.80
12	1996	115,240			148,492	0.78	9.36
13	1979	144,623			140,771	1.03	12.36
14	1999	98,914			154,982	0.64	7.68
15	1993	92,834			141,502	0.66	7.92
16	1975	88,695			143,738	0.62	7.44
17	1998	115,974			150,997	0.77	9.24
18	1988	134,521			143,232	0.94	11.28
19	1976	108,213			145,004	0.75	9.00
20	1972	116,994	**Normal or average stream**		140,122	0.83	9.96
21	1991	80,412	**flow years:**		141,475	0.57	6.84
22	2000	127,564	**Average:**	**110,521**	147,593	0.86	10.32
23	1990	98,308	**Maximum:**	**144,623**	138,994	0.71	8.52
24	1994	119,497	**Minimum:**	**51,761**	136,537	0.88	10.56
25	2001	94,970			144,723	0.66	7.92
26	1987	142,525			143,963	0.99	11.88
27	1981	124,481	**Low stream flow years:**		146,486	0.85	10.20
28	1992	49,133	**Average:**	**85,920**	137,995	0.36	4.32
29	1989	43,889	**Maximum:**	**142,525**	129,047	0.34	4.08
30	1977	69,574	**Minimum:**	**43,889**	120,573	0.58	6.96
	Overall average:	**102,754**			**142,809**	**0.72**	**8.63**
					Calculated Platte River Basin Plan average subbasin unit consumptive use value (inches):		**8.59**

designates high stream flow year

designates low stream flow year

Notes:

(1) Years and consumptive use values that are neither shaded nor outlined are normal or average stream flow years and corresponding consumptive use values.

(2) High stream flow, normal or average stream flow, and low stream flow years from Table 3.1.1.5., Sorted stream flow gauge data for each subbasin - high, low, and normal or average flow years, in Technical Memorandum 3.1, Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year Determination

(3) Annual total CU_W values for years 1972 through 1998 from first data column, Table 8a, pg. 267 - "Calculated CU_W" - *Final Settlement Stipulation,* 2001 Modified Decree; these data represent CU_W values for actual irrigated acres; 1999, 2000, and 2001 CU_W values, which are not included in Table 8a, are from the 2004 *Decree Compliance Report* as submitted by the State of Wyoming to the North Platte Decree Committee

(4) Annual irrigated acreage values for years 1972 through 1999 are sums of the first, second, third, fifth, and sixth data columns, Table 5a, pg. 263 - "Irrigated Acreage Data Used in CU_W Calculations" - *Final Settlement Stipulation,* 2001 Modified Decree; these data represent actual irrigated acreages; i.e. acres for which crop CU_W values can be calculated; 2000 and 2001 annual irrigated acreage values, which are not included in Table 5a, are from the 2004 Decree Compliance Report as submitted by the State of Wyoming to the North Platte Decree Committee

2.1.4.9.2 Consumptive Use of Irrigation Water - Pathfinder to Guernsey Subbasin

Table 2.1.4.121 through Table 2.1.4.141 contain basin plan unit consumptive use, CU_W in units of inches, calculation parameters and results for all crops under consideration during each high, low, and normal or average stream flow year in the Pathfinder to Guernsey subbasin. As noted in the introduction to this technical memorandum, total annual consumptive use values in units of acre-feet for the Pathfinder to Guernsey subbasin that are reported in this basin plan were taken directly from Supreme Court (2001) and subsequent year 2000 and 2001 Wyoming State Engineer's calculations. Supreme Court (2001) annual total consumptive use values, Supreme Court (2001) irrigated acreage values, a derived Supreme Court (2001) subbasin study period unit consumptive use value, and a calculated basin plan subbasin unit consumptive use value for the Pathfinder to Guernsey subbasin are summarized in Table 2.1.4.142.

Table 2.1.4.121 Consumptive use of irrigation water, CU_W, calculations - 1983 - high stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	3.45	4.55	3.38	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.18	87.63	115.57	85.85	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.45			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.53	2.16	2.89	1.83	0.96	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.86	54.86	73.41	46.48	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.97	37.54	51.77	32.17	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.94	1.48	2.04	1.27	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.73			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.91			
K=H+J	total annual effective precipitation (inches)			8.64			
L=C-K	**annual consumptive use of irrigation water (inches)**			**3.81**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.89	2.75	4.70	3.80	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.61	69.85	119.38	96.52	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.14			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.53	2.16	2.89	1.83	0.96	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.86	54.86	73.41	46.48	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.73	36.10	52.20	32.93	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.93	1.42	2.06	1.30	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.71			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.91			
K=H+J	total annual effective precipitation (inches)			8.62			
L=C-K	**annual consumptive use of irrigation water (inches)**			**3.52**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.40	4.55	7.07	6.55	2.29	1.15
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.56	115.57	179.58	166.37	58.17	29.21
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.01			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.53	2.16	2.89	1.83	0.96	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.86	54.86	73.41	46.48	24.38	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.41	39.92	59.59	38.40	16.41	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.96	1.57	2.35	1.51	0.65	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.04			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.91			
K=H+J	total annual effective precipitation (inches)			9.95			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.06**			

Table 2.1.4.121 Consumptive use of irrigation water, CU_w, calculations - 1983 - high stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.34	4.36	6.77	6.28	2.19	1.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.04	110.74	171.96	159.51	55.63	27.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.04			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.53	2.16	2.89	1.83	0.96	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.86	54.86	73.41	46.48	24.38	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.33	39.49	58.60	37.82	16.32	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.96	1.55	2.31	1.49	0.64	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.95			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.91			
K=H+J	total annual effective precipitation (inches)			9.86			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.18**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.62	0.97	4.37	7.21	3.23	0.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	15.75	24.64	111.00	183.13	82.04	24.38
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.36			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.53	2.16	2.89	1.83	0.96	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.86	54.86	73.41	46.48	24.38	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.37	32.68	51.25	39.84	17.30	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.92	1.29	2.02	1.57	0.68	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.48			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.91			
K=H+J	total annual effective precipitation (inches)			9.39			
L=C-K	**annual consumptive use of irrigation water (inches)**			**7.97**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.92	1.60	3.47	5.76	5.30	2.82
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.37	40.64	88.14	146.30	134.62	71.63
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.87			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.53	2.16	2.89	1.83	0.96	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.86	54.86	73.41	46.48	24.38	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.77	33.85	48.74	36.74	19.42	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.94	1.33	1.92	1.45	0.76	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.40			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.91			
K=H+J	total annual effective precipitation (inches)			9.31			
L=C-K	**annual consumptive use of irrigation water (inches)**			**10.56**			

Table 2.1.4.121 Consumptive use of irrigation water, CU_w, calculations - 1983 - high stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.70	1.73	6.40	8.62	6.38	1.80
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	17.78	43.94	162.56	218.95	162.05	45.72
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.63			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.53	2.16	2.89	1.83	0.96	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.86	54.86	73.41	46.48	24.38	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.48	34.10	57.40	43.10	20.62	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.92	1.34	2.26	1.70	0.81	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.03			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.91			
K=H+J	total annual effective precipitation (inches)			9.94			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.69**			

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.10	4.80	5.27	7.70	2.91	1.93
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.71			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.47			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.00			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.82			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.91			
G=D+F	total annual effective precipitation (inches)			11.91			
H=B-G	**annual consumptive use of irrigation water (inches)**			**12.80**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.50	3.27	6.18	8.02	3.17	2.34
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.48			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.47			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.00			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.82			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.91			
G=D+F	total annual effective precipitation (inches)			11.91			
H=B-G	**annual consumptive use of irrigation water (inches)**			**12.57**			

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.90	2.15	4.33	5.67	3.57	2.44
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.06			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.47			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.00			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.82			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.91			
G=D+F	total annual effective precipitation (inches)			11.91			
H=B-G	**annual consumptive use of irrigation water (inches)**			**7.15**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.122 Consumptive use of irrigation water, CU_W, calculations - 1973 - high stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.20	4.40	6.09	3.79	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.48	111.76	154.69	96.27	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.48			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	4.24	0.81	0.57	3.68	0.40	3.13
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	107.70	20.57	14.48	93.47	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	60.04	15.56	11.77	61.34	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.36	0.61	0.46	2.41	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.84			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			7.24			
L=C-K	**annual consumptive use of irrigation water (inches)**			**8.24**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	3.04	5.46	3.69	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.59	77.22	138.68	93.73	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.04			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	4.24	0.81	0.57	3.68	0.40	3.13
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	107.70	20.57	14.48	93.47	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	58.88	14.42	11.37	61.00	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.32	0.57	0.45	2.40	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.74			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			7.14			
L=C-K	**annual consumptive use of irrigation water (inches)**			**5.90**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.28	4.78	7.81	6.05	2.19	0.91
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.51	121.41	198.37	153.67	55.63	23.11
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.02			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	4.24	0.81	0.57	3.68	0.40	3.13
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	107.70	20.57	14.48	93.47	10.16	79.50
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	60.31	15.90	12.96	69.60	6.23	45.32
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.37	0.63	0.51	2.74	0.25	1.78
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.28			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			9.68			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.34**			

Table 2.1.4.122 Consumptive use of irrigation water, CU_w, calculations - 1973 - high stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.35	5.01	8.19	6.35	2.30	0.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.29	127.25	208.03	161.29	58.42	24.38
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.16			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	4.24	0.81	0.57	3.68	0.40	3.13
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	107.70	20.57	14.48	93.47	10.16	79.50
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	60.55	16.10	13.24	70.77	6.27	45.45
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.38	0.63	0.52	2.79	0.25	1.79
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.36			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			9.76			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.40**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.71	1.28	6.04	8.33	3.88	0.95
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	18.03	32.51	153.42	211.58	98.55	24.13
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.19			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	4.24	0.81	0.57	3.68	0.40	3.13
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	107.70	20.57	14.48	93.47	10.16	79.50
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	58.42	13.07	11.74	79.05	6.85	45.42
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.30	0.51	0.46	3.11	0.27	1.79
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.44			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			9.84			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.35**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.19	2.36	5.40	7.50	7.15	3.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.23	59.94	137.16	190.50	181.61	80.52
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.77			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	4.24	0.81	0.57	3.68	0.40	3.13
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	107.70	20.57	14.48	93.47	10.16	79.50
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	60.01	13.89	11.33	75.47	8.22	51.42
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.36	0.55	0.45	2.97	0.32	2.02
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.67			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			10.07			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.70**			

Table 2.1.4.122 Consumptive use of irrigation water, CU_w, calculations - 1973 - high stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.69	1.97	7.66	8.62	6.62	1.55
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	17.53	50.04	194.56	218.95	168.15	39.37
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.11			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	4.24	0.81	0.57	3.68	0.40	3.13
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	107.70	20.57	14.48	93.47	10.16	79.50
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	58.36	13.59	12.85	80.34	7.98	46.97
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.30	0.54	0.51	3.16	0.31	1.85
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.67			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			10.07			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.04**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.03	5.30	6.13	7.48	2.93	1.61
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.48			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.83			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.19			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
G=D+F	total annual effective precipitation (inches)			13.59			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.89**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.45	3.62	7.19	7.79	3.19	1.96
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.20			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.83			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.19			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
G=D+F	total annual effective precipitation (inches)			13.59			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.61**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.87	2.37	5.04	5.50	3.60	2.04
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.42			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.83			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.19			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.40			
G=D+F	total annual effective precipitation (inches)			13.59			
H=B-G	**annual consumptive use of irrigation water (inches)**			**5.83**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.123 Consumptive use of irrigation water, CU_W, calculations - 1981 - low stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.43	2.99	4.74	3.10	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.32	75.95	120.40	78.74	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.26			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.56	3.51	0.30	1.56	0.42	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	39.62	89.15	7.62	39.62	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.90	56.29	4.86	27.33	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.98	2.22	0.19	1.08	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.47			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.12			
K=H+J	total annual effective precipitation (inches)			5.59			
L=C-K	**annual consumptive use of irrigation water (inches)**			**6.67**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	2.15	4.40	3.13	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.92	54.61	111.76	79.50	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			10.74			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.56	3.51	0.30	1.56	0.42	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	39.62	89.15	7.62	39.62	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.39	53.71	4.77	27.38	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.96	2.11	0.19	1.08	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.34			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.12			
K=H+J	total annual effective precipitation (inches)			5.46			
L=C-K	**annual consumptive use of irrigation water (inches)**			**5.28**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.76	3.74	6.96	5.68	1.86	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.70	95.00	176.78	144.27	47.24	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.01			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.56	3.51	0.30	1.56	0.42	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	39.62	89.15	7.62	39.62	10.67	5.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.36	58.70	5.51	31.57	6.50	2.56
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.00	2.31	0.22	1.24	0.26	0.10
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.13			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.12			
K=H+J	total annual effective precipitation (inches)			6.25			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.76**			

Table 2.1.4.123 Consumptive use of irrigation water, CU_W, calculations - 1981 - low stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.79	3.80	7.08	5.77	1.89	1.02
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.47	96.52	179.83	146.56	48.01	25.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.35			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.56	3.51	0.30	1.56	0.42	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	39.62	89.15	7.62	39.62	10.67	5.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.40	58.89	5.54	31.73	6.52	2.56
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.00	2.32	0.22	1.25	0.26	0.10
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.15			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.12			
K=H+J	total annual effective precipitation (inches)			6.27			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.08**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	1.08	5.83	8.49	3.58	1.13
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.92	27.43	148.08	215.65	90.93	28.70
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.17			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.56	3.51	0.30	1.56	0.42	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	39.62	89.15	7.62	39.62	10.67	5.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.39	50.59	5.17	36.93	7.16	2.58
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.96	1.99	0.20	1.45	0.28	0.10
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.98			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.12			
K=H+J	total annual effective precipitation (inches)			6.10			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.07**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.90	2.15	5.61	8.21	7.08	4.07
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.26	54.61	142.49	208.53	179.83	103.38
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.02			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.56	3.51	0.30	1.56	0.42	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	39.62	89.15	7.62	39.62	10.67	5.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.56	53.71	5.11	36.36	8.71	3.04
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.01	2.11	0.20	1.43	0.34	0.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.21			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.12			
K=H+J	total annual effective precipitation (inches)			6.33			
L=C-K	**annual consumptive use of irrigation water (inches)**			**22.69**			

Table 2.1.4.123 Consumptive use of irrigation water, CUW, calculations - 1981 - low stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	1.71	7.59	9.00	6.26	1.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.92	43.43	192.79	228.60	159.00	48.26
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.52			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.56	3.51	0.30	1.56	0.42	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	39.62	89.15	7.62	39.62	10.67	5.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.39	52.40	5.70	38.00	8.32	2.69
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.96	2.06	0.22	1.50	0.33	0.11
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.18			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.12			
K=H+J	total annual effective precipitation (inches)			6.30			
L=C-K	**annual consumptive use of irrigation water (inches)**			**21.22**			

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.99	4.46	5.88	7.57	2.69	1.91
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.50			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.57			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.19			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.12			
G=D+F	total annual effective precipitation (inches)			8.31			
H=B-G	**annual consumptive use of irrigation water (inches)**			**17.19**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.12	3.01	6.84	7.82	2.90	2.30
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.99			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.57			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.19			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.12			
G=D+F	total annual effective precipitation (inches)			8.31			
H=B-G	**annual consumptive use of irrigation water (inches)**			**16.68**			

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.27	1.99	4.80	5.52	3.27	2.40
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.25			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.57			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.19			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.12			
G=D+F	total annual effective precipitation (inches)			8.31			
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.94**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.124 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.61	4.15	4.81	2.94	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.89	105.41	122.17	74.68	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.51			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.20	1.95	2.16	1.55	0.76	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	5.08	49.53	54.86	39.37	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	2.01	35.58	40.50	26.93	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.08	1.40	1.59	1.06	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.13			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.17			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.59			
K=H+J	total annual effective precipitation (inches)			5.72			
L=C-K	**annual consumptive use of irrigation water (inches)**			**7.79**			

spring wheat							
	Not cultivated						
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.13	5.58	7.62	5.82	2.05	1.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	54.10	141.73	193.55	147.83	52.07	29.72
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.37			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.20	1.95	2.16	1.55	0.76	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	5.08	49.53	54.86	39.37	19.30	10.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	2.07	38.54	47.38	31.63	12.78	6.26
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.08	1.52	1.87	1.25	0.50	0.25
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.47			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.17			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.59			
K=H+J	total annual effective precipitation (inches)			7.06			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.31**			

oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.74	4.56	6.23	4.75	1.68	0.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.20	115.82	158.24	120.65	42.67	24.38
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.92			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.20	1.95	2.16	1.55	0.76	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	5.08	49.53	54.86	39.37	19.30	10.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	2.03	36.41	43.84	29.80	12.52	6.19
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.08	1.43	1.73	1.17	0.49	0.24
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.14			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.17			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.59			
K=H+J	total annual effective precipitation (inches)			6.73			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.19**			

Table 2.1.4.124 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.04	1.30	5.16	7.03	3.19	1.07
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.42	33.02	131.06	178.56	81.03	27.18
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.79			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.20	1.95	2.16	1.55	0.76	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	5.08	49.53	54.86	39.37	19.30	10.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	1.95	30.35	41.30	33.84	13.62	6.22
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.08	1.19	1.63	1.33	0.54	0.24
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.01			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.17			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.59			
K=H+J	total annual effective precipitation (inches)			6.60			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.19**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.69	2.35	4.51	6.17	5.75	3.47
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.93	59.69	114.55	156.72	146.05	88.14
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.94			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.20	1.95	2.16	1.55	0.76	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	5.08	49.53	54.86	39.37	19.30	10.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	2.02	32.18	39.83	32.26	15.72	7.12
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.08	1.27	1.57	1.27	0.62	0.28
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.09			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.17			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.59			
K=H+J	total annual effective precipitation (inches)			6.68			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.26**			

corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.89	1.76	5.74	6.37	4.78	1.53
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.61	44.70	145.80	161.80	121.41	38.86
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.07			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.20	1.95	2.16	1.55	0.76	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	5.08	49.53	54.86	39.37	19.30	10.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	1.93	31.14	42.66	32.62	14.89	6.39
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.08	1.23	1.68	1.28	0.59	0.25
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.11			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.17			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.59			
K=H+J	total annual effective precipitation (inches)			6.70			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.37**			

Table 2.1.4.124 Consumptive use of irrigation water, CUW, calculations - 1992 - low stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.73	5.01	4.84	5.82	2.23	1.67
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.30			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.05			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.70			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.17			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.59			
G=D+F	total annual effective precipitation (inches)			8.29			
H=B-G	**annual consumptive use of irrigation water (inches)**			**14.01**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.58	2.77	4.61	4.92	1.97	1.64
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.49			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.05			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.70			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.17			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.59			
G=D+F	total annual effective precipitation (inches)			8.29			
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.20**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.95	1.82	3.23	3.48	2.22	1.71
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.41			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.05			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.70			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.17			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.59			
G=D+F	total annual effective precipitation (inches)			8.29			
H=B-G	**annual consumptive use of irrigation water (inches)**			**5.12**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.125 Consumptive use of irrigation water, CU_W, calculations - 1985 - low stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.38	3.77	4.57	3.16	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.05	95.76	116.08	80.26	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.88			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.19	1.31	1.33	1.46	0.27	1.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.23	33.27	33.78	37.08	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.24	24.09	25.55	25.78	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.76	0.95	1.01	1.01	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.73			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.18			
K=H+J	total annual effective precipitation (inches)			4.91			
L=C-K	**annual consumptive use of irrigation water (inches)**			**7.97**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.16	3.07	4.83	3.62	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.46	77.98	122.68	91.95	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.68			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.19	1.31	1.33	1.46	0.27	1.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.23	33.27	33.78	37.08	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.00	23.16	25.93	26.45	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.75	0.91	1.02	1.04	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.72			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.18			
K=H+J	total annual effective precipitation (inches)			4.90			
L=C-K	**annual consumptive use of irrigation water (inches)**			**7.78**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.94	5.36	7.66	6.60	2.19	0.88
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.28	136.14	194.56	167.64	55.63	22.35
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.63			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.19	1.31	1.33	1.46	0.27	1.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.23	33.27	33.78	37.08	6.86	30.23
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.85	26.32	30.37	31.24	3.59	18.71
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.78	1.04	1.20	1.23	0.14	0.74
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.13			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.18			
K=H+J	total annual effective precipitation (inches)			6.31			
L=C-K	**annual consumptive use of irrigation water (inches)**			**18.32**			

Table 2.1.4.125 Consumptive use of irrigation water, CU_W, calculations - 1985 - low stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.74	4.83	6.91	5.95	1.97	0.79
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.20	122.68	175.51	151.13	50.04	20.07
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.19			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.19	1.31	1.33	1.46	0.27	1.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.23	33.27	33.78	37.08	6.86	30.23
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.63	25.56	29.12	30.13	3.55	18.61
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.77	1.01	1.15	1.19	0.14	0.73
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.99			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.18			
K=H+J	total annual effective precipitation (inches)			6.17			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.02**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.98	1.30	5.39	8.27	3.52	0.83
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.89	33.02	136.91	210.06	89.41	21.08
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.29			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.19	1.31	1.33	1.46	0.27	1.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.23	33.27	33.78	37.08	6.86	30.23
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.81	20.98	26.75	34.30	3.87	18.65
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.74	0.83	1.05	1.35	0.15	0.73
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.85			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.18			
K=H+J	total annual effective precipitation (inches)			6.03			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.26**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.84	2.72	5.44	8.40	7.34	3.13
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.74	69.09	138.18	213.36	186.44	79.50
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.87			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.19	1.31	1.33	1.46	0.27	1.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.23	33.27	33.78	37.08	6.86	30.23
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.74	22.71	26.83	34.55	4.79	21.21
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.78	0.89	1.06	1.36	0.19	0.84
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.12			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.18			
K=H+J	total annual effective precipitation (inches)			6.30			
L=C-K	**annual consumptive use of irrigation water (inches)**			**22.57**			

Table 2.1.4.125 Consumptive use of irrigation water, CUW, calculations - 1985 - low stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.91	1.92	6.54	8.18	5.75	1.30
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.11	48.77	166.12	207.77	146.05	33.02
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.60			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.19	1.31	1.33	1.46	0.27	1.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.23	33.27	33.78	37.08	6.86	30.23
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.74	21.72	28.52	34.13	4.38	19.15
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.74	0.86	1.12	1.34	0.17	0.75
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.98			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.18			
K=H+J	total annual effective precipitation (inches)			6.16			
L=C-K	**annual consumptive use of irrigation water (inches)**			**18.44**			

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.89	3.68	3.72	5.05	1.81	0.96
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.11			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.75			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.41			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.35			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.18			
G=D+F	total annual effective precipitation (inches)			7.59			
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.52**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.85	3.45	6.00	7.23	2.71	1.60
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.84			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.75			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.41			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.35			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.18			
G=D+F	total annual effective precipitation (inches)			7.59			
H=B-G	**annual consumptive use of irrigation water (inches)**			**15.25**			

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.11	2.26	4.20	5.11	3.06	1.67
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.41			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.75			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.41			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.35			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.18			
G=D+F	total annual effective precipitation (inches)			7.59			
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.82**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.126 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.35	3.50	4.40	3.22	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.29	88.90	111.76	81.79	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.47			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.33	2.14	1.68	0.62	1.35	3.08
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	54.36	42.67	15.75	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.35	37.33	31.48	11.00	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.84	1.47	1.24	0.43	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.98			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			5.32			
L=C-K	**annual consumptive use of irrigation water (inches)**			**7.15**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.13	2.86	4.65	3.71	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.70	72.64	118.11	94.23	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.35			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.33	2.14	1.68	0.62	1.35	3.08
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	54.36	42.67	15.75	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.09	36.02	31.92	11.30	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.83	1.42	1.26	0.44	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.95			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			5.29			
L=C-K	**annual consumptive use of irrigation water (inches)**			**7.06**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.58	4.18	6.20	5.66	1.74	0.86
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.13	106.17	157.48	143.76	44.20	21.84
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.22			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.33	2.14	1.68	0.62	1.35	3.08
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	54.36	42.67	15.75	34.29	78.23
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.62	38.78	34.81	12.61	22.13	44.56
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.85	1.53	1.37	0.50	0.87	1.75
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.87			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			8.21			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.01**			

Table 2.1.4.126 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.43	3.78	5.60	5.12	1.57	0.78
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.32	96.01	142.24	130.05	39.88	19.81
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.28			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.33	2.14	1.68	0.62	1.35	3.08
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	54.36	42.67	15.75	34.29	78.23
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.44	37.92	33.66	12.23	21.92	44.36
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.84	1.49	1.33	0.48	0.86	1.75
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.75			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			8.09			
L=C-K	**annual consumptive use of irrigation water (inches)**			**10.19**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.94	1.18	5.09	8.29	3.28	0.95
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.88	29.97	129.29	210.57	83.31	24.13
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.73			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.33	2.14	1.68	0.62	1.35	3.08
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	54.36	42.67	15.75	34.29	78.23
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.86	32.80	32.72	14.60	24.12	44.78
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.82	1.29	1.29	0.57	0.95	1.76
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.68			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			8.02			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.71**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.60	2.25	4.67	7.64	6.21	3.24
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.64	57.15	118.62	194.06	157.73	82.30
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.61			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.33	2.14	1.68	0.62	1.35	3.08
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	54.36	42.67	15.75	34.29	78.23
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.65	34.82	31.96	14.08	28.40	50.89
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.85	1.37	1.26	0.55	1.12	2.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.15			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			8.49			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.12**			

Table 2.1.4.126 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	1.94	6.80	9.04	5.91	1.63
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.64	49.28	172.72	229.62	150.11	41.40
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.29			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.33	2.14	1.68	0.62	1.35	3.08
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	54.36	42.67	15.75	34.29	78.23
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.90	34.22	36.00	15.23	27.93	46.52
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.82	1.35	1.42	0.60	1.10	1.83
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.12			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			8.46			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.83**			

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.31	4.29	4.50	6.48	2.16	1.40
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.14			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.19			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.68			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
G=D+F	total annual effective precipitation (inches)			11.02			
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.12**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	1.90	3.42	4.38	1.53	1.10
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.40			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.19			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.68			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.34			
G=D+F	total annual effective precipitation (inches)			11.02			
H=B-G	**annual consumptive use of irrigation water (inches)**			**2.38**			

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.64	1.24	2.40	3.09	1.72	1.15
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			10.24			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.19			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.68			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.34			
G=D+F	total annual effective precipitation (inches)			11.02			
H=B-G	**annual consumptive use of irrigation water (inches)**			**0.00**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.127 Consumptive use of irrigation water, CU_w, calculations - 1984 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	4.05	4.97	3.40	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.96	102.87	126.24	86.36	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.56			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.79	1.46	0.82	1.89	0.51	0.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	37.08	20.83	48.01	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.82	27.10	16.27	33.17	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.10	1.07	0.64	1.31	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.12			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.85			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.43			
K=H+J	total annual effective precipitation (inches)			6.55			
L=C-K	**annual consumptive use of irrigation water (inches)**			**7.01**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.92	3.18	5.04	3.75	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.37	80.77	128.02	95.25	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.89			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.79	1.46	0.82	1.89	0.51	0.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	37.08	20.83	48.01	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.48	25.81	16.34	33.82	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.08	1.02	0.64	1.33	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.07			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.85			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.43			
K=H+J	total annual effective precipitation (inches)			6.50			
L=C-K	**annual consumptive use of irrigation water (inches)**			**6.39**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.47	5.33	7.71	6.58	2.24	1.00
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.34	135.38	195.83	167.13	56.90	25.40
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.33			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.79	1.46	0.82	1.89	0.51	0.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	37.08	20.83	48.01	12.95	13.72
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.34	29.10	18.96	39.62	8.37	8.34
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.12	1.15	0.75	1.56	0.33	0.33
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.24			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.85			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.43			
K=H+J	total annual effective precipitation (inches)			7.67			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.66**			

Table 2.1.4.127 Consumptive use of irrigation water, CU_w, calculations - 1984 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.26	4.56	6.59	5.63	1.92	0.86
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.00	115.82	167.39	143.00	48.77	21.84
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.82			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.79	1.46	0.82	1.89	0.51	0.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	37.08	20.83	48.01	12.95	13.72
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.00	27.88	17.81	37.57	8.22	8.27
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.10	1.10	0.70	1.48	0.32	0.33
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.03			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.85			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.43			
K=H+J	total annual effective precipitation (inches)			7.46			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.36**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.79	1.37	5.72	8.71	3.81	1.00
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.07	34.80	145.29	221.23	96.77	25.40
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.40			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.79	1.46	0.82	1.89	0.51	0.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	37.08	20.83	48.01	12.95	13.72
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.28	23.33	16.97	44.62	9.13	8.34
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.07	0.92	0.67	1.76	0.36	0.33
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.11			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.85			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.43			
K=H+J	total annual effective precipitation (inches)			7.54			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.86**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	2.22	4.49	6.87	6.15	2.92
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.96	56.39	114.05	174.50	156.21	74.17
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.79			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.79	1.46	0.82	1.89	0.51	0.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	37.08	20.83	48.01	12.95	13.72
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.82	24.46	15.84	40.26	10.41	9.28
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.10	0.96	0.62	1.59	0.41	0.37
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.05			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.85			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.43			
K=H+J	total annual effective precipitation (inches)			7.48			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.31**			

Table 2.1.4.127 Consumptive use of irrigation water, CU_w, calculations - 1984 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.69	1.90	6.52	8.09	5.83	1.46
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	17.53	48.26	165.61	205.49	148.08	37.08
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.49			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.79	1.46	0.82	1.89	0.51	0.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	37.08	20.83	48.01	12.95	13.72
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.13	24.03	17.74	43.10	10.23	8.56
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.07	0.95	0.70	1.70	0.40	0.34
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.16			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.85			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.43			
K=H+J	total annual effective precipitation (inches)			7.59			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.90**			

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.93	4.90	5.01	6.74	2.48	1.47
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.53			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.00			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.65			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.85			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.43			
G=D+F	total annual effective precipitation (inches)			9.08			
H=B-G	**annual consumptive use of irrigation water (inches)**			**13.45**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.44	3.48	6.13	7.33	2.82	1.85
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.05			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.00			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.65			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.85			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.43			
G=D+F	total annual effective precipitation (inches)			9.08			
H=B-G	**annual consumptive use of irrigation water (inches)**			**13.97**			

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.86	2.29	4.29	5.17	3.17	1.93
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.71			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.00			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.65			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.85			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.43			
G=D+F	total annual effective precipitation (inches)			9.08			
H=B-G	**annual consumptive use of irrigation water (inches)**			**8.63**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.128 Consumptive use of irrigation water, CU_W, calculations - 1986 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.28	3.65	5.15	3.14	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.51	92.71	130.81	79.76	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.22			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.01	1.26	3.68	0.98	0.27	1.17
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.05	32.00	93.47	24.89	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	31.16	23.06	66.19	17.57	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.23	0.91	2.61	0.69	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.44			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.47			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.74			
K=H+J	total annual effective precipitation (inches)			7.18			
L=C-K	**annual consumptive use of irrigation water (inches)**			**6.04**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	3.20	5.84	3.87	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.21	81.28	148.34	98.30	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.06			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.01	1.26	3.68	0.98	0.27	1.17
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.05	32.00	93.47	24.89	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.93	22.48	68.79	18.30	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.22	0.89	2.71	0.72	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.54			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.47			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.74			
K=H+J	total annual effective precipitation (inches)			7.28			
L=C-K	**annual consumptive use of irrigation water (inches)**			**6.78**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.72	4.98	8.27	6.29	2.18	0.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.69	126.49	210.06	159.77	55.37	22.86
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.34			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.01	1.26	3.68	0.98	0.27	1.17
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.05	32.00	93.47	24.89	6.86	29.72
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	31.93	24.84	78.79	20.94	3.59	18.42
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.26	0.98	3.10	0.82	0.14	0.73
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.03			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.47			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.74			
K=H+J	total annual effective precipitation (inches)			8.77			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.57**			

Table 2.1.4.128 Consumptive use of irrigation water, CU_W, calculations - 1986 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.64	4.73	7.85	5.98	2.07	0.85
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.66	120.14	199.39	151.89	52.58	21.59
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.12			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.01	1.26	3.68	0.98	0.27	1.17
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.05	32.00	93.47	24.89	6.86	29.72
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	31.79	24.49	76.96	20.58	3.57	18.37
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.25	0.96	3.03	0.81	0.14	0.72
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.91			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.47			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.74			
K=H+J	total annual effective precipitation (inches)			8.65			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.47**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.88	1.21	5.86	7.92	3.53	0.85
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.35	30.73	148.84	201.17	89.66	21.59
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.25			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.01	1.26	3.68	0.98	0.27	1.17
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.05	32.00	93.47	24.89	6.86	29.72
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.47	20.12	68.86	22.94	3.87	18.37
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.20	0.79	2.71	0.90	0.15	0.72
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.47			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.47			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.74			
K=H+J	total annual effective precipitation (inches)			8.21			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.04**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.63	2.51	5.84	7.95	7.27	3.16
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.40	63.75	148.34	201.93	184.66	80.26
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.36			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.01	1.26	3.68	0.98	0.27	1.17
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.05	32.00	93.47	24.89	6.86	29.72
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	31.77	21.63	68.79	22.98	4.77	20.90
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.25	0.85	2.71	0.90	0.19	0.82
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.72			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.47			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.74			
K=H+J	total annual effective precipitation (inches)			8.46			
L=C-K	**annual consumptive use of irrigation water (inches)**			**19.90**			

Table 2.1.4.128 Consumptive use of irrigation water, CU_W, calculations - 1986 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.86	1.89	7.44	8.22	6.05	1.39
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.84	48.01	188.98	208.79	153.67	35.31
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.85			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.01	1.26	3.68	0.98	0.27	1.17
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.05	32.00	93.47	24.89	6.86	29.72
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.43	20.90	75.22	23.33	4.46	18.94
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.20	0.82	2.96	0.92	0.18	0.75
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.83			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.47			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.74			
K=H+J	total annual effective precipitation (inches)			8.57			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.28**			

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.39	4.86	5.72	6.84	2.57	1.39
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.77			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.37			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.90			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.47			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.74			
G=D+F	total annual effective precipitation (inches)			10.64			
H=B-G	**annual consumptive use of irrigation water (inches)**			**13.13**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.72	3.35	6.78	7.21	2.83	1.71
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.60			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.37			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.90			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.47			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.74			
G=D+F	total annual effective precipitation (inches)			10.64			
H=B-G	**annual consumptive use of irrigation water (inches)**			**12.96**			

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.03	2.20	4.74	5.09	3.19	1.78
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.03			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.37			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.90			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.47			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.74			
G=D+F	total annual effective precipitation (inches)			10.64			
H=B-G	**annual consumptive use of irrigation water (inches)**			**7.39**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.129 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.57	3.98	5.79	3.56	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.88	101.09	147.07	90.42	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.90			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.35	1.26	0.51	0.82	0.34	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.89	32.00	12.95	20.83	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	5.06	23.49	10.20	15.04	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.20	0.92	0.40	0.59	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.11			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.57			
K=H+J	total annual effective precipitation (inches)			3.68			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.22**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.22	3.01	5.66	3.79	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.99	76.45	143.76	96.27	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.68			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.35	1.26	0.51	0.82	0.34	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.89	32.00	12.95	20.83	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.96	22.25	10.13	15.24	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.20	0.88	0.40	0.60	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.08			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.57			
K=H+J	total annual effective precipitation (inches)			3.65			
L=C-K	**annual consumptive use of irrigation water (inches)**			**10.03**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.37	3.54	6.07	4.66	1.51	0.72
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.80	89.92	154.18	118.36	38.35	18.29
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.87			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.35	1.26	0.51	0.82	0.34	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.89	32.00	12.95	20.83	8.64	19.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	5.00	22.92	10.36	15.99	4.85	12.03
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.20	0.90	0.41	0.63	0.19	0.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.80			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.57			
K=H+J	total annual effective precipitation (inches)			4.37			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.50**			

Table 2.1.4.129 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.27	3.30	5.65	4.34	1.40	0.67
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.26	83.82	143.51	110.24	35.56	17.02
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.63			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.35	1.26	0.51	0.82	0.34	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.89	32.00	12.95	20.83	8.64	19.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.98	22.61	10.12	15.71	4.82	12.00
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.20	0.89	0.40	0.62	0.19	0.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.77			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.57			
K=H+J	total annual effective precipitation (inches)			4.34			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.29**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	1.42	7.07	9.68	4.02	1.12
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.21	36.07	179.58	245.87	102.11	28.45
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.46			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.35	1.26	0.51	0.82	0.34	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.89	32.00	12.95	20.83	8.64	19.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.94	20.36	10.96	21.17	5.58	12.30
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.19	0.80	0.43	0.83	0.22	0.48
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.95			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.57			
K=H+J	total annual effective precipitation (inches)			4.52			
L=C-K	**annual consumptive use of irrigation water (inches)**			**19.94**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.97	2.73	6.54	9.00	7.67	3.84
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.04	69.34	166.12	228.60	194.82	97.54
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.75			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.35	1.26	0.51	0.82	0.34	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.89	32.00	12.95	20.83	8.64	19.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	5.17	21.90	10.64	20.38	6.84	14.32
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.20	0.86	0.42	0.80	0.27	0.56
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.11			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.57			
K=H+J	total annual effective precipitation (inches)			4.68			
L=C-K	**annual consumptive use of irrigation water (inches)**			**27.07**			

Table 2.1.4.129 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	2.25	9.18	10.25	7.03	1.86
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.21	57.15	233.17	260.35	178.56	47.24
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.72			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.35	1.26	0.51	0.82	0.34	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.89	32.00	12.95	20.83	8.64	19.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.94	21.32	12.33	21.85	6.60	12.82
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.19	0.84	0.49	0.86	0.26	0.50
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.14			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.57			
K=H+J	total annual effective precipitation (inches)			4.71			
L=C-K	**annual consumptive use of irrigation water (inches)**			**27.01**			

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.31	4.19	5.08	6.15	2.15	1.34
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.22			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.05			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			3.85			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.14			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.57			
G=D+F	total annual effective precipitation (inches)			5.42			
H=B-G	**annual consumptive use of irrigation water (inches)**			**15.80**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.70	2.95	6.14	6.61	2.42	1.68
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.50			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.05			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			3.85			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.14			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.57			
G=D+F	total annual effective precipitation (inches)			5.42			
H=B-G	**annual consumptive use of irrigation water (inches)**			**16.08**			

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.02	1.94	4.31	4.66	2.73	1.74
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.40			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			4.05			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			3.85			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.14			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.57			
G=D+F	total annual effective precipitation (inches)			5.42			
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.98**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.130 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	2.80	4.08	2.81	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.40	71.12	103.63	71.37	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			10.69			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.51	5.88	2.11	0.44	0.55	0.58
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.35	149.35	53.59	11.18	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.58	87.02	38.07	7.26	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.93	3.43	1.50	0.29	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.15			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.74			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.37			
K=H+J	total annual effective precipitation (inches)			7.52			
L=C-K	**annual consumptive use of irrigation water (inches)**			**3.17**			

spring wheat							
	Not cultivated						
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.43	4.08	6.99	6.02	2.01	0.97
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.32	103.63	177.55	152.91	51.05	24.64
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.50			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.51	5.88	2.11	0.44	0.55	0.58
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.35	149.35	53.59	11.18	13.97	14.73
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.16	93.47	44.79	8.69	9.00	9.01
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.95	3.68	1.76	0.34	0.35	0.35
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.43			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.74			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.37			
K=H+J	total annual effective precipitation (inches)			8.80			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.70**			

oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.47	4.18	7.17	6.17	2.07	0.99
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.34	106.17	182.12	156.72	52.58	25.15
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.05			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.51	5.88	2.11	0.44	0.55	0.58
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.35	149.35	53.59	11.18	13.97	14.73
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.21	93.99	45.24	8.76	9.04	9.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.95	3.70	1.78	0.34	0.36	0.36
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.49			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.74			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.37			
K=H+J	total annual effective precipitation (inches)			8.86			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.19**			

Table 2.1.4.130 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.75	1.01	5.03	7.71	3.31	0.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	19.05	25.65	127.76	195.83	84.07	23.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.74			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.51	5.88	2.11	0.44	0.55	0.58
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.35	149.35	53.59	11.18	13.97	14.73
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.25	78.74	40.14	9.55	9.68	8.99
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.92	3.10	1.58	0.38	0.38	0.35
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.71			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.74			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.37			
K=H+J	total annual effective precipitation (inches)			8.08			
L=C-K	**annual consumptive use of irrigation water (inches)**			**10.66**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.24	1.87	4.50	6.94	6.12	3.12
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	31.50	47.50	114.30	176.28	155.45	79.25
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.79			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.51	5.88	2.11	0.44	0.55	0.58
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.35	149.35	53.59	11.18	13.97	14.73
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.90	82.61	38.97	9.15	11.33	10.16
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.94	3.25	1.53	0.36	0.45	0.40
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.93			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.74			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.37			
K=H+J	total annual effective precipitation (inches)			8.30			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.49**			

corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.81	1.74	7.11	8.89	6.31	1.71
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.57	44.20	180.59	225.81	160.27	43.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.57			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.51	5.88	2.11	0.44	0.55	0.58
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.35	149.35	53.59	11.18	13.97	14.73
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.33	82.02	45.09	10.20	11.45	9.39
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.92	3.23	1.78	0.40	0.45	0.37
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.15			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.74			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.37			
K=H+J	total annual effective precipitation (inches)			8.52			
L=C-K	**annual consumptive use of irrigation water (inches)**			**18.05**			

Table 2.1.4.130 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.17	4.32	5.25	7.12	2.58	1.63
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.07			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.07			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.52			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.74			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.37			
G=D+F	total annual effective precipitation (inches)			11.89			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.18**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	3.18	6.64	8.00	3.03	2.14
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.66			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.07			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.52			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.74			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.37			
G=D+F	total annual effective precipitation (inches)			11.89			
H=B-G	**annual consumptive use of irrigation water (inches)**			**12.77**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	2.09	4.66	5.65	3.41	2.23
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.04			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.07			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.52			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.74			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.37			
G=D+F	total annual effective precipitation (inches)			11.89			
H=B-G	**annual consumptive use of irrigation water (inches)**			**7.15**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.131 Consumptive use of irrigation water, CU_W, calculations - 1972 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	4.62	6.49	4.09	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.42	117.35	164.85	103.89	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.87			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.91	1.72	1.88	1.26	2.27	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	48.51	43.69	47.75	32.00	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.40	32.57	39.22	23.63	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.20	1.28	1.54	0.93	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.95			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.23			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			6.57			
L=C-K	**annual consumptive use of irrigation water (inches)**			**10.30**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.23	3.30	5.99	4.11	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	31.24	83.82	152.15	104.39	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.63			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.91	1.72	1.88	1.26	2.27	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	48.51	43.69	47.75	32.00	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.66	30.25	38.14	23.66	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.17	1.19	1.50	0.93	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.79			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.23			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			6.41			
L=C-K	**annual consumptive use of irrigation water (inches)**			**8.22**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.77	4.98	8.24	6.48	2.14	1.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.96	126.49	209.30	164.59	54.36	27.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.71			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.91	1.72	1.88	1.26	2.27	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	48.51	43.69	47.75	32.00	57.66	15.75
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.57	33.23	43.25	27.01	36.49	9.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.20	1.31	1.70	1.06	1.44	0.38
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.09			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.23			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			8.71			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.00**			

Table 2.1.4.131 Consumptive use of irrigation water, CU_W, calculations - 1972 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.77	4.98	8.24	6.48	2.14	1.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.96	126.49	209.30	164.59	54.36	27.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.71			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.91	1.72	1.88	1.26	2.27	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	48.51	43.69	47.75	32.00	57.66	15.75
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.57	33.23	43.25	27.01	36.49	9.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.20	1.31	1.70	1.06	1.44	0.38
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.09			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.23			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			8.71			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.00**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.95	1.28	6.13	8.59	3.65	1.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.13	32.51	155.70	218.19	92.71	27.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.70			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.91	1.72	1.88	1.26	2.27	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	48.51	43.69	47.75	32.00	57.66	15.75
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.20	27.03	38.44	30.38	39.70	9.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.15	1.06	1.51	1.20	1.56	0.38
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.86			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.23			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			8.48			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.22**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.63	2.45	5.67	7.99	6.95	3.78
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.40	62.23	144.02	202.95	176.53	96.01
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.47			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.91	1.72	1.88	1.26	2.27	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	48.51	43.69	47.75	32.00	57.66	15.75
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.33	28.85	37.47	29.38	47.73	11.35
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.19	1.14	1.48	1.16	1.88	0.45
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.30			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.23			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			8.92			
L=C-K	**annual consumptive use of irrigation water (inches)**			**19.55**			

Table 2.1.4.131 Consumptive use of irrigation water, CUW, calculations - 1972 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.90	1.92	7.56	8.64	6.06	1.74
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.86	48.77	192.02	219.46	153.92	44.20
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.82			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.91	1.72	1.88	1.26	2.27	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	48.51	43.69	47.75	32.00	57.66	15.75
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.12	28.01	41.64	30.47	45.42	10.13
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.15	1.10	1.64	1.20	1.79	0.40
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.28			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.23			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			8.90			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.92**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.64	5.21	6.09	7.56	2.70	1.83
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.03			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.66			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.18			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.23			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
G=D+F	total annual effective precipitation (inches)			10.80			
H=B-G	**annual consumptive use of irrigation water (inches)**			**15.23**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.75	3.30	6.65	7.32	2.73	2.07
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.82			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.66			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.18			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.23			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.62			
G=D+F	total annual effective precipitation (inches)			10.80			
H=B-G	**annual consumptive use of irrigation water (inches)**			**13.02**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	2.17	4.66	5.16	3.08	2.15
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.27			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.66			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.18			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.23			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.62			
G=D+F	total annual effective precipitation (inches)			10.80			
H=B-G	**annual consumptive use of irrigation water (inches)**			**7.47**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.132 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.33	3.22	5.03	3.27	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.78	81.79	127.76	83.06	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.85			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.26	5.62	0.85	1.70	1.10	0.18
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.00	142.75	21.59	43.18	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.25	85.70	16.93	29.88	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.80	3.37	0.67	1.18	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.02			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.58			
K=H+J	total annual effective precipitation (inches)			7.60			
L=C-K	**annual consumptive use of irrigation water (inches)**			**5.25**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.02	2.42	4.89	3.47	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.91	61.47	124.21	88.14	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			11.80			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.26	5.62	0.85	1.70	1.10	0.18
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.00	142.75	21.59	43.18	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.91	81.95	16.80	30.22	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.78	3.23	0.66	1.19	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.86			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.58			
K=H+J	total annual effective precipitation (inches)			7.44			
L=C-K	**annual consumptive use of irrigation water (inches)**			**4.36**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.42	3.49	6.43	5.22	1.66	0.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.07	88.65	163.32	132.59	42.16	23.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.15			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.26	5.62	0.85	1.70	1.10	0.18
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.00	142.75	21.59	43.18	27.94	4.57
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.36	87.00	18.31	33.32	18.11	1.52
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.80	3.43	0.72	1.31	0.71	0.06
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.03			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.58			
K=H+J	total annual effective precipitation (inches)			8.61			
L=C-K	**annual consumptive use of irrigation water (inches)**			**10.54**			

Table 2.1.4.132 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.76	4.34	7.98	6.48	2.06	1.15
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.70	110.24	202.69	164.59	52.32	29.21
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.77			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.26	5.62	0.85	1.70	1.10	0.18
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.00	142.75	21.59	43.18	27.94	4.57
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.75	91.23	19.97	35.75	18.52	1.54
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.82	3.59	0.79	1.41	0.73	0.06
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.40			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.58			
K=H+J	total annual effective precipitation (inches)			8.98			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.79**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.82	0.97	5.20	7.54	3.07	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.83	24.64	132.08	191.52	77.98	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.61			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.26	5.62	0.85	1.70	1.10	0.18
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.00	142.75	21.59	43.18	27.94	4.57
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.69	75.58	17.09	37.93	19.59	1.53
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.78	2.98	0.67	1.49	0.77	0.06
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.75			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.58			
K=H+J	total annual effective precipitation (inches)			8.33			
L=C-K	**annual consumptive use of irrigation water (inches)**			**10.28**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.51	1.99	5.13	7.47	6.24	3.70
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.35	50.55	130.30	189.74	158.50	93.98
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.04			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.26	5.62	0.85	1.70	1.10	0.18
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.00	142.75	21.59	43.18	27.94	4.57
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.46	80.01	17.03	37.78	23.39	1.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.81	3.15	0.67	1.49	0.92	0.07
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.11			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.58			
K=H+J	total annual effective precipitation (inches)			8.69			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.35**			

Table 2.1.4.132 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.90	1.68	7.36	8.68	5.84	1.83
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.86	42.67	186.94	220.47	148.34	46.48
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.29			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.26	5.62	0.85	1.70	1.10	0.18
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.00	142.75	21.59	43.18	27.94	4.57
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.77	78.63	19.29	40.42	22.87	1.60
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.78	3.10	0.76	1.59	0.90	0.06
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.19			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.58			
K=H+J	total annual effective precipitation (inches)			8.77			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.52**			

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.34	4.05	5.27	6.75	2.32	1.71
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.44			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.71			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.17			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.16			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.58			
G=D+F	total annual effective precipitation (inches)			11.75			
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.69**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.57	2.61	5.83	6.63	2.38	1.95
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.97			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.71			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.17			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.16			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.58			
G=D+F	total annual effective precipitation (inches)			11.75			
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.22**			

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.94	1.71	4.08	4.68	2.68	2.04
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.13			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.71			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.17			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.16			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.58			
G=D+F	total annual effective precipitation (inches)			11.75			
H=B-G	**annual consumptive use of irrigation water (inches)**			**4.38**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.133 Consumptive use of irrigation water, CU_w, calculations - 1980 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.22	3.06	4.76	3.14	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.99	77.72	120.90	79.76	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.18			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.30	3.17	0.03	0.81	0.93	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	7.62	80.52	0.76	20.57	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.00	51.68	-2.52	14.50	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.16	2.03	0.00	0.57	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.76			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.81			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			4.67			
L=C-K	**annual consumptive use of irrigation water (inches)**			**7.51**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	2.60	5.25	3.76	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.18	66.04	133.35	95.50	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.68			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.30	3.17	0.03	0.81	0.93	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	7.62	80.52	0.76	20.57	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	3.96	50.37	-2.59	15.02	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.16	1.98	0.00	0.59	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.73			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.81			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			4.64			
L=C-K	**annual consumptive use of irrigation water (inches)**			**8.04**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.48	3.77	6.92	5.69	1.71	0.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.59	95.76	175.77	144.53	43.43	23.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.50			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.30	3.17	0.03	0.81	0.93	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	7.62	80.52	0.76	20.57	23.62	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.05	53.77	-2.85	16.72	15.40	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.16	2.12	0.00	0.66	0.61	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.55			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.81			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			5.46			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.04**			

Table 2.1.4.133 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.76	4.49	8.23	6.77	2.04	1.11
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.70	114.05	209.04	171.96	51.82	28.19
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.40			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.30	3.17	0.03	0.81	0.93	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	7.62	80.52	0.76	20.57	23.62	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.12	55.98	-3.06	17.76	15.68	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.16	2.20	0.00	0.70	0.62	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.68			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.81			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			5.59			
L=C-K	**annual consumptive use of irrigation water (inches)**			**18.81**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	1.20	6.40	9.37	3.62	1.16
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.15	30.48	162.56	238.00	91.95	29.46
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.74			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.30	3.17	0.03	0.81	0.93	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	7.62	80.52	0.76	20.57	23.62	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	3.94	46.58	-2.76	20.54	17.13	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.16	1.83	0.00	0.81	0.67	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.47			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.81			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			5.38			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.36**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.58	2.15	5.53	8.15	6.46	3.72
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.13	54.61	140.46	207.01	164.08	94.49
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.59			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.30	3.17	0.03	0.81	0.93	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	7.62	80.52	0.76	20.57	23.62	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.08	49.12	-2.63	19.19	20.07	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.16	1.93	0.00	0.76	0.79	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.64			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.81			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			5.55			
L=C-K	**annual consumptive use of irrigation water (inches)**			**22.04**			

Table 2.1.4.133 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	1.91	8.31	9.92	6.34	1.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.15	48.51	211.07	251.97	161.04	49.02
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.40			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.30	3.17	0.03	0.81	0.93	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	7.62	80.52	0.76	20.57	23.62	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	3.94	48.47	-3.07	21.18	19.94	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.16	1.91	0.00	0.83	0.79	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.69			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.81			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			5.60			
L=C-K	**annual consumptive use of irrigation water (inches)**			**23.80**			

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.57	4.61	5.98	7.75	2.53	1.81
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.25			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.35			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.81			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
G=D+F	total annual effective precipitation (inches)			6.99			
H=B-G	**annual consumptive use of irrigation water (inches)**			**18.26**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.74	2.97	6.64	7.64	2.60	2.07
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.66			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.35			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.81			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.91			
G=D+F	total annual effective precipitation (inches)			6.99			
H=B-G	**annual consumptive use of irrigation water (inches)**			**16.67**			

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.04	1.95	4.65	5.39	2.93	2.16
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.12			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.35			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.81			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.91			
G=D+F	total annual effective precipitation (inches)			6.99			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.13**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.134 Consumptive use of irrigation water, CU_W, calculations - 1974 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.42	4.32	5.95	3.84	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.07	109.73	151.13	97.54	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.53			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.39	0.38	0.60	0.50	0.86	0.78
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	60.71	9.65	15.24	12.70	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	36.71	6.57	12.36	8.95	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.45	0.26	0.49	0.35	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.55			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.16			
K=H+J	total annual effective precipitation (inches)			3.71			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.82**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	3.13	5.60	3.93	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.92	79.50	142.24	99.82	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.72			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.39	0.38	0.60	0.50	0.86	0.78
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	60.71	9.65	15.24	12.70	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	35.98	6.15	12.12	8.99	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.42	0.24	0.48	0.35	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.49			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.16			
K=H+J	total annual effective precipitation (inches)			3.65			
L=C-K	**annual consumptive use of irrigation water (inches)**			**10.07**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.58	4.86	7.91	6.36	1.99	0.98
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.13	123.44	200.91	161.54	50.55	24.89
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.68			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.39	0.38	0.60	0.50	0.86	0.78
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	60.71	9.65	15.24	12.70	21.84	19.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	37.04	6.77	13.79	10.30	14.46	12.37
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.46	0.27	0.54	0.41	0.57	0.49
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.74			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.16			
K=H+J	total annual effective precipitation (inches)			4.90			
L=C-K	**annual consumptive use of irrigation water (inches)**			**18.78**			

Table 2.1.4.134 Consumptive use of irrigation water, CU_W, calculations - 1974 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.34	4.14	6.73	5.41	1.69	0.84
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.04	105.16	170.94	137.41	42.93	21.34
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.15			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.39	0.38	0.60	0.50	0.86	0.78
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	60.71	9.65	15.24	12.70	21.84	19.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	36.55	6.51	12.91	9.77	14.22	12.27
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.44	0.26	0.51	0.38	0.56	0.48
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.63			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.16			
K=H+J	total annual effective precipitation (inches)			4.79			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.36**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.89	1.32	6.24	8.93	3.59	1.04
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.61	33.53	158.50	226.82	91.19	26.42
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.01			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.39	0.38	0.60	0.50	0.86	0.78
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	60.71	9.65	15.24	12.70	21.84	19.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	35.64	5.56	12.56	11.89	15.81	12.41
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.40	0.22	0.49	0.47	0.62	0.49
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.69			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.16			
K=H+J	total annual effective precipitation (inches)			4.85			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.16**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.55	2.55	5.81	8.38	6.90	3.62
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.37	64.77	147.57	212.85	175.26	91.95
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.81			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.39	0.38	0.60	0.50	0.86	0.78
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	60.71	9.65	15.24	12.70	21.84	19.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	36.98	5.95	12.26	11.53	19.02	14.33
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.46	0.23	0.48	0.45	0.75	0.56
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.93			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.16			
K=H+J	total annual effective precipitation (inches)			5.09			
L=C-K	**annual consumptive use of irrigation water (inches)**			**23.72**			

Table 2.1.4.134 Consumptive use of irrigation water, CU_W, calculations - 1974 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.74	1.73	6.72	7.85	5.20	1.45
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	18.80	43.94	170.69	199.39	132.08	36.83
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.69			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.39	0.38	0.60	0.50	0.86	0.78
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	60.71	9.65	15.24	12.70	21.84	19.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	35.34	5.69	12.90	11.19	17.29	12.70
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.39	0.22	0.51	0.44	0.68	0.50
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.74			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.16			
K=H+J	total annual effective precipitation (inches)			4.90			
L=C-K	**annual consumptive use of irrigation water (inches)**			**18.79**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.42	5.23	6.03	7.64	2.58	1.68
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.58			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.51			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.23			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.16			
G=D+F	total annual effective precipitation (inches)			6.39			
H=B-G	**annual consumptive use of irrigation water (inches)**			**19.19**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.66	3.42	6.78	7.64	2.70	1.96
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.16			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.51			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.23			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.16			
G=D+F	total annual effective precipitation (inches)			6.39			
H=B-G	**annual consumptive use of irrigation water (inches)**			**17.77**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	2.25	4.75	5.39	3.04	2.04
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.46			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.51			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.23			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.16			
G=D+F	total annual effective precipitation (inches)			6.39			
H=B-G	**annual consumptive use of irrigation water (inches)**			**12.07**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.135 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.26	3.76	4.56	3.17	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.00	95.50	115.82	80.52	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.75			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.75	3.21	1.63	0.98	0.18	1.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	81.53	41.40	24.89	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	41.22	54.33	30.89	17.60	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.62	2.14	1.22	0.69	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.67			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			6.75			
L=C-K	**annual consumptive use of irrigation water (inches)**			**6.00**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	3.30	5.17	3.91	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.96	83.82	131.32	99.31	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.52			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.75	3.21	1.63	0.98	0.18	1.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	81.53	41.40	24.89	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	40.95	52.96	31.96	18.34	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.61	2.09	1.26	0.72	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.68			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			6.76			
L=C-K	**annual consumptive use of irrigation water (inches)**			**6.76**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.73	5.25	7.50	6.51	2.18	1.28
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.94	133.35	190.50	165.35	55.37	32.51
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.45			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.75	3.21	1.63	0.98	0.18	1.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	81.53	41.40	24.89	4.57	35.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	42.32	59.05	36.40	21.20	1.63	22.47
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.67	2.32	1.43	0.83	0.06	0.88
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.19			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			8.27			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.18**			

Table 2.1.4.135 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.73	5.25	7.50	6.51	2.18	1.28
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.94	133.35	190.50	165.35	55.37	32.51
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.45			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.75	3.21	1.63	0.98	0.18	1.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	81.53	41.40	24.89	4.57	35.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	42.32	59.05	36.40	21.20	1.63	22.47
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.67	2.32	1.43	0.83	0.06	0.88
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.19			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			8.27			
L=C-K	**annual consumptive use of irrigation water (inches)**			**16.18**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.84	1.21	5.03	7.78	3.34	1.15
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.34	30.73	127.76	197.61	84.84	29.21
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.35			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.75	3.21	1.63	0.98	0.18	1.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	81.53	41.40	24.89	4.57	35.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	40.27	47.12	31.71	22.76	1.74	22.30
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.59	1.86	1.25	0.90	0.07	0.88
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.55			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			7.63			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.72**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.59	2.58	5.16	8.02	7.06	4.40
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.39	65.53	131.06	203.71	179.32	111.76
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.81			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.75	3.21	1.63	0.98	0.18	1.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	81.53	41.40	24.89	4.57	35.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	41.99	50.87	31.94	23.07	2.14	26.74
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.65	2.00	1.26	0.91	0.08	1.05
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.95			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			8.03			
L=C-K	**annual consumptive use of irrigation water (inches)**			**20.78**			

Table 2.1.4.135 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.82	1.89	6.42	8.09	5.74	1.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.83	48.01	163.07	205.49	145.80	48.26
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.86			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.75	3.21	1.63	0.98	0.18	1.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	81.53	41.40	24.89	4.57	35.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	40.22	48.95	34.27	23.16	1.99	23.26
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.58	1.93	1.35	0.91	0.08	0.92
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.77			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			7.85			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.01**			

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.59	5.53	5.59	7.65	2.77	2.15
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.28			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.17			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.66			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.15			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
G=D+F	total annual effective precipitation (inches)			10.74			
H=B-G	**annual consumptive use of irrigation water (inches)**			**15.54**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.52	3.10	5.40	6.56	2.48	2.14
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.20			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.17			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.66			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.15			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.08			
G=D+F	total annual effective precipitation (inches)			10.74			
H=B-G	**annual consumptive use of irrigation water (inches)**			**10.46**			

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.91	2.04	3.78	4.63	2.80	2.23
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.39			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.17			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.66			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.15			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.08			
G=D+F	total annual effective precipitation (inches)			10.74			
H=B-G	**annual consumptive use of irrigation water (inches)**			**5.65**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.136 Consumptive use of irrigation water, CU_W, calculations - 1975 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.27	3.91	5.28	3.85	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.26	99.31	134.11	97.79	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.31			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.50	2.60	1.07	0.58	0.76	0.56
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	66.04	27.18	14.73	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.75	45.48	21.58	10.59	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	1.79	0.85	0.42	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.37			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.27			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.64			
K=H+J	total annual effective precipitation (inches)			5.01			
L=C-K	**annual consumptive use of irrigation water (inches)**			**9.30**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.95	2.87	5.01	3.98	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.13	72.90	127.25	101.09	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.81			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.50	2.60	1.07	0.58	0.76	0.56
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	66.04	27.18	14.73	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.61	42.91	21.26	10.66	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.30	1.69	0.84	0.42	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.25			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.27			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.64			
K=H+J	total annual effective precipitation (inches)			4.89			
L=C-K	**annual consumptive use of irrigation water (inches)**			**7.92**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.29	4.05	6.43	5.87	1.90	0.97
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.77	102.87	163.32	149.10	48.26	24.64
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.51			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.50	2.60	1.07	0.58	0.76	0.56
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	66.04	27.18	14.73	19.30	14.22
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.76	45.83	23.01	11.85	12.67	8.67
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	1.80	0.91	0.47	0.50	0.34
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.33			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.27			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.64			
K=H+J	total annual effective precipitation (inches)			5.97			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.54**			

Table 2.1.4.136 Consumptive use of irrigation water, CU_W, calculations - 1975 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.35	4.22	6.70	6.11	1.98	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.29	107.19	170.18	155.19	50.29	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.37			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.50	2.60	1.07	0.58	0.76	0.56
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	66.04	27.18	14.73	19.30	14.22
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.78	46.27	23.36	12.01	12.73	8.69
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	1.82	0.92	0.47	0.50	0.34
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.36			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.27			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.64			
K=H+J	total annual effective precipitation (inches)			6.00			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.37**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.71	1.06	4.90	7.95	3.31	0.99
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	18.03	26.92	124.46	201.93	84.07	25.15
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.92			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.50	2.60	1.07	0.58	0.76	0.56
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	66.04	27.18	14.73	19.30	14.22
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.51	38.78	21.13	13.31	13.71	8.68
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.30	1.53	0.83	0.52	0.54	0.34
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.06			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.27			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.64			
K=H+J	total annual effective precipitation (inches)			5.70			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.22**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.36	2.28	5.07	8.27	7.06	3.83
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.54	57.91	128.78	210.06	179.32	97.28
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.87			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.50	2.60	1.07	0.58	0.76	0.56
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	66.04	27.18	14.73	19.30	14.22
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.79	41.52	21.33	13.55	16.91	10.17
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	1.63	0.84	0.53	0.67	0.40
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.38			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.27			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.64			
K=H+J	total annual effective precipitation (inches)			6.02			
L=C-K	**annual consumptive use of irrigation water (inches)**			**21.85**			

Table 2.1.4.136 Consumptive use of irrigation water, CU_W, calculations - 1975 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.70	1.66	6.26	8.29	5.70	1.64
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	17.78	42.16	159.00	210.57	144.78	41.66
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.25			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.50	2.60	1.07	0.58	0.76	0.56
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	66.04	27.18	14.73	19.30	14.22
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.51	40.11	22.79	13.57	15.67	9.00
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.30	1.58	0.90	0.53	0.62	0.35
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.28			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.27			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.64			
K=H+J	total annual effective precipitation (inches)			5.92			
L=C-K	**annual consumptive use of irrigation water (inches)**			**18.33**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.22	4.89	5.49	7.89	2.77	1.86
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.12			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.07			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.77			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.27			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.64			
G=D+F	total annual effective precipitation (inches)			7.41			
H=B-G	**annual consumptive use of irrigation water (inches)**			**17.71**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.38	2.88	5.58	7.11	2.60	1.95
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.50			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.07			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.77			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.27			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.64			
G=D+F	total annual effective precipitation (inches)			7.41			
H=B-G	**annual consumptive use of irrigation water (inches)**			**14.09**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.82	1.89	3.91	5.03	2.94	2.03
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.62			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.07			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.77			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.27			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.64			
G=D+F	total annual effective precipitation (inches)			7.41			
H=B-G	**annual consumptive use of irrigation water (inches)**			**9.21**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.137 Consumptive use of irrigation water, CU_W, calculations - 1977 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.13	3.02	4.32	2.55	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.70	76.71	109.73	64.77	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			11.02			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.63	1.92	0.21	2.77	0.89	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.40	48.77	5.33	70.36	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.50	32.94	2.59	44.59	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.00	1.30	0.10	1.76	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.16			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.59			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.80			
K=H+J	total annual effective precipitation (inches)			4.96			
L=C-K	**annual consumptive use of irrigation water (inches)**			**6.06**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.19	3.09	5.71	3.68	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.23	78.49	145.03	93.47	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.67			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.63	1.92	0.21	2.77	0.89	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.40	48.77	5.33	70.36	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.59	33.07	2.80	47.50	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.01	1.30	0.11	1.87	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.29			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.59			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.80			
K=H+J	total annual effective precipitation (inches)			5.09			
L=C-K	**annual consumptive use of irrigation water (inches)**			**8.58**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.31	3.57	6.02	4.44	1.44	0.82
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.27	90.68	152.91	112.78	36.58	20.83
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.60			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.63	1.92	0.21	2.77	0.89	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.40	48.77	5.33	70.36	22.61	6.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.76	33.97	2.85	49.56	14.52	2.93
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.01	1.34	0.11	1.95	0.57	0.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.10			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.59			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.80			
K=H+J	total annual effective precipitation (inches)			5.90			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.70**			

Table 2.1.4.137 Consumptive use of irrigation water, CU_W, calculations - 1977 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.44	3.93	6.62	4.89	1.58	0.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.58	99.82	168.15	124.21	40.13	22.86
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.36			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.63	1.92	0.21	2.77	0.89	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.40	48.77	5.33	70.36	22.61	6.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.95	34.66	2.94	50.82	14.63	2.95
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.02	1.36	0.12	2.00	0.58	0.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.20			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.59			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.80			
K=H+J	total annual effective precipitation (inches)			6.00			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.36**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.82	1.07	5.22	6.88	2.86	0.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.83	27.18	132.59	174.75	72.64	24.38
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.81			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.63	1.92	0.21	2.77	0.89	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.40	48.77	5.33	70.36	22.61	6.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.07	29.54	2.72	56.79	15.72	2.96
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.99	1.16	0.11	2.24	0.62	0.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.24			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.59			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.80			
K=H+J	total annual effective precipitation (inches)			6.04			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.77**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.49	2.16	5.09	6.73	5.75	3.47
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.85	54.86	129.29	170.94	146.05	88.14
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.69			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.63	1.92	0.21	2.77	0.89	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.40	48.77	5.33	70.36	22.61	6.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.02	31.40	2.70	56.32	18.47	3.40
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.02	1.24	0.11	2.22	0.73	0.13
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.45			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.59			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.80			
K=H+J	total annual effective precipitation (inches)			6.25			
L=C-K	**annual consumptive use of irrigation water (inches)**			**18.44**			

Table 2.1.4.137 Consumptive use of irrigation water, CU_W, calculations - 1977 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.89	1.83	7.36	7.89	5.43	1.73
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.61	46.48	186.94	200.41	137.92	43.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.13			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.63	1.92	0.21	2.77	0.89	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.40	48.77	5.33	70.36	22.61	6.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.16	30.82	3.07	60.09	18.14	3.09
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.99	1.21	0.12	2.37	0.71	0.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.52			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.59			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.80			
K=H+J	total annual effective precipitation (inches)			6.32			
L=C-K	**annual consumptive use of irrigation water (inches)**			**18.81**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.39	4.56	5.44	6.33	2.22	1.67
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.61			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.67			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.29			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.59			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.80			
G=D+F	total annual effective precipitation (inches)			8.09			
H=B-G	**annual consumptive use of irrigation water (inches)**			**14.52**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.48	2.69	5.51	5.70	2.08	1.74
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.20			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.67			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.29			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.59			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.80			
G=D+F	total annual effective precipitation (inches)			8.09			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.11**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.88	1.77	3.86	4.03	2.35	1.82
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.71			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.67			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.29			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.59			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.80			
G=D+F	total annual effective precipitation (inches)			8.09			
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.62**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.138 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.30	3.40	4.21	3.30	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.02	86.36	106.93	83.82	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.21			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.52	2.64	3.54	1.74	0.64	1.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	67.06	89.92	44.20	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.13	44.81	60.71	30.58	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.95	1.76	2.39	1.20	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.30			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.82			
K=H+J	total annual effective precipitation (inches)			7.12			
L=C-K	**annual consumptive use of irrigation water (inches)**			**5.09**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.08	2.74	4.40	3.75	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.43	69.60	111.76	95.25	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			11.97			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.52	2.64	3.54	1.74	0.64	1.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	67.06	89.92	44.20	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.84	43.19	61.36	31.36	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.94	1.70	2.42	1.23	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.29			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.82			
K=H+J	total annual effective precipitation (inches)			7.11			
L=C-K	**annual consumptive use of irrigation water (inches)**			**4.86**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.58	4.18	6.12	5.98	2.14	0.89
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.13	106.17	155.45	151.89	54.36	22.61
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.89			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.52	2.64	3.54	1.74	0.64	1.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	67.06	89.92	44.20	16.26	46.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.51	46.80	67.55	35.52	10.72	28.27
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.96	1.84	2.66	1.40	0.42	1.11
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.39			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.82			
K=H+J	total annual effective precipitation (inches)			9.21			
L=C-K	**annual consumptive use of irrigation water (inches)**			**11.68**			

Table 2.1.4.138 Consumptive use of irrigation water, CU_w, calculations - 1982 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.73	4.59	6.72	6.56	2.35	0.98
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.94	116.59	170.69	166.62	59.69	24.89
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.93			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.52	2.64	3.54	1.74	0.64	1.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	67.06	89.92	44.20	16.26	46.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.72	47.89	69.85	36.69	10.85	28.41
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.97	1.89	2.75	1.44	0.43	1.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.60			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.82			
K=H+J	total annual effective precipitation (inches)			9.42			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.51**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.78	0.99	4.18	7.29	3.34	0.82
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	19.81	25.15	106.17	185.17	84.84	20.83
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.40			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.52	2.64	3.54	1.74	0.64	1.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	67.06	89.92	44.20	16.26	46.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.44	39.16	60.61	38.21	11.46	28.16
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.92	1.54	2.39	1.50	0.45	1.11
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.91			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.82			
K=H+J	total annual effective precipitation (inches)			8.73			
L=C-K	**annual consumptive use of irrigation water (inches)**			**8.67**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.56	2.22	4.54	7.95	7.48	3.32
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.62	56.39	115.32	201.93	189.99	84.33
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.07			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.52	2.64	3.54	1.74	0.64	1.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	67.06	89.92	44.20	16.26	46.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.48	41.95	61.84	39.65	14.44	32.38
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.96	1.65	2.43	1.56	0.57	1.27
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.44			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.82			
K=H+J	total annual effective precipitation (inches)			9.26			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.81**			

Table 2.1.4.138 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.92	1.85	6.41	9.09	6.89	1.62
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.37	46.99	162.81	230.89	175.01	41.15
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.78			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.52	2.64	3.54	1.74	0.64	1.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	67.06	89.92	44.20	16.26	46.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.63	41.09	68.65	42.26	13.98	29.45
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.93	1.62	2.70	1.66	0.55	1.16
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.62			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.82			
K=H+J	total annual effective precipitation (inches)			9.44			
L=C-K	**annual consumptive use of irrigation water (inches)**			**17.34**			

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.59	4.84	5.01	7.71	2.98	1.65
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.78			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.92			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.32			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.63			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.82			
G=D+F	total annual effective precipitation (inches)			12.14			
H=B-G	**annual consumptive use of irrigation water (inches)**			**12.64**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.85	3.30	5.87	8.03	3.25	2.00
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.30			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.92			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.32			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.63			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.82			
G=D+F	total annual effective precipitation (inches)			12.14			
H=B-G	**annual consumptive use of irrigation water (inches)**			**12.16**			

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.11	2.17	4.12	5.67	3.66	2.08
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.81			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.92			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.32			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.63			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.82			
G=D+F	total annual effective precipitation (inches)			12.14			
H=B-G	**annual consumptive use of irrigation water (inches)**			**6.67**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.139 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.09	2.69	3.92	2.70	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.69	68.33	99.57	68.58	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			10.40			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.87	1.61	1.22	1.80	1.63	0.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.10	40.89	30.99	45.72	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.91	27.51	22.70	30.50	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.55	1.08	0.89	1.20	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.72			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			5.12			
L=C-K	**annual consumptive use of irrigation water (inches)**			**5.28**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.36	3.30	6.21	4.66	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.54	83.82	157.73	118.36	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.53			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.87	1.61	1.22	1.80	1.63	0.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.10	40.89	30.99	45.72	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.12	28.46	25.80	34.03	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.56	1.12	1.02	1.34	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.04			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			5.44			
L=C-K	**annual consumptive use of irrigation water (inches)**			**10.09**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.47	3.71	6.36	5.48	1.58	0.99
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.34	94.23	161.54	139.19	40.13	25.15
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.59			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.87	1.61	1.22	1.80	1.63	0.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.10	40.89	30.99	45.72	41.40	10.41
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.21	29.12	26.02	35.63	26.15	6.01
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.56	1.15	1.02	1.40	1.03	0.24
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.40			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			6.80			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.79**			

Table 2.1.4.139 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.69	4.28	7.34	6.32	1.82	1.14
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.93	108.71	186.44	160.53	46.23	28.96
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.59			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.87	1.61	1.22	1.80	1.63	0.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.10	40.89	30.99	45.72	41.40	10.41
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.39	30.06	27.48	37.34	26.51	6.06
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.57	1.18	1.08	1.47	1.04	0.24
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.58			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			6.98			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.61**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	1.20	5.95	9.14	3.39	1.25
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.15	30.48	151.13	232.16	86.11	31.75
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.92			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.87	1.61	1.22	1.80	1.63	0.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.10	40.89	30.99	45.72	41.40	10.41
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.84	25.31	25.43	43.71	28.93	6.10
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.54	1.00	1.00	1.72	1.14	0.24
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.64			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			7.04			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.88**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	2.26	5.42	8.37	6.36	4.24
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.42	57.40	137.67	212.60	161.54	107.70
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.32			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.87	1.61	1.22	1.80	1.63	0.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.10	40.89	30.99	45.72	41.40	10.41
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.37	26.85	24.69	41.87	34.15	7.21
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.57	1.06	0.97	1.65	1.34	0.28
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.87			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			7.27			
L=C-K	**annual consumptive use of irrigation water (inches)**			**21.05**			

Table 2.1.4.139 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.94	1.81	7.37	9.24	5.64	1.99
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.88	45.97	187.20	234.70	143.26	50.55
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.99			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.87	1.61	1.22	1.80	1.63	0.41
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.10	40.89	30.99	45.72	41.40	10.41
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.80	26.19	27.53	43.95	32.81	6.35
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.54	1.03	1.08	1.73	1.29	0.25
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.92			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
K=H+J	total annual effective precipitation (inches)			7.32			
L=C-K	**annual consumptive use of irrigation water (inches)**			**19.67**			

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.62	4.64	5.63	7.65	2.39	1.98
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.91			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.55			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.17			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.40			
G=D+F	total annual effective precipitation (inches)			8.57			
H=B-G	**annual consumptive use of irrigation water (inches)**			**16.34**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.56	2.65	5.52	6.66	2.17	2.00
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.56			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.55			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.17			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.40			
G=D+F	total annual effective precipitation (inches)			8.57			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.99**			

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.94	1.73	3.87	4.71	2.45	2.09
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.79			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.55			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.17			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.40			
G=D+F	total annual effective precipitation (inches)			8.57			
H=B-G	**annual consumptive use of irrigation water (inches)**			**7.22**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.140 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.59	3.87	5.09	3.24	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.39	98.30	129.29	82.30	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.79			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.62	1.89	0.64	1.28	1.21	0.69
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	48.01	16.26	32.51	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.04	34.05	12.64	22.88	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.40	1.34	0.50	0.90	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.14			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.19			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.10			
K=H+J	total annual effective precipitation (inches)			5.24			
L=C-K	**annual consumptive use of irrigation water (inches)**			**8.55**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.26	2.99	5.08	3.52	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.00	75.95	129.03	89.41	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.85			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.62	1.89	0.64	1.28	1.21	0.69
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	48.01	16.26	32.51	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.86	32.42	12.63	23.24	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.39	1.28	0.50	0.91	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.08			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.19			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.10			
K=H+J	total annual effective precipitation (inches)			5.18			
L=C-K	**annual consumptive use of irrigation water (inches)**			**7.67**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.71	4.24	6.57	5.23	1.61	0.88
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.43	107.70	166.88	132.84	40.89	22.35
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.24			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.62	1.89	0.64	1.28	1.21	0.69
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	48.01	16.26	32.51	30.73	17.53
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.11	34.76	13.73	25.57	19.79	10.83
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.40	1.37	0.54	1.01	0.78	0.43
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.53			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.19			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.10			
K=H+J	total annual effective precipitation (inches)			6.63			
L=C-K	**annual consumptive use of irrigation water (inches)**			**13.61**			

Table 2.1.4.140 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.80	4.46	6.91	5.50	1.69	0.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.72	113.28	175.51	139.70	42.93	23.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.29			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.62	1.89	0.64	1.28	1.21	0.69
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	48.01	16.26	32.51	30.73	17.53
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.16	35.19	13.99	25.95	19.88	10.86
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.40	1.39	0.55	1.02	0.78	0.43
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.57			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.19			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.10			
K=H+J	total annual effective precipitation (inches)			6.67			
L=C-K	**annual consumptive use of irrigation water (inches)**			**14.62**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	1.35	6.09	8.64	3.41	1.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.21	34.29	154.69	219.46	86.61	27.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.74			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.62	1.89	0.64	1.28	1.21	0.69
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	48.01	16.26	32.51	30.73	17.53
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.80	29.58	13.37	30.93	21.89	10.96
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.39	1.16	0.53	1.22	0.86	0.43
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.59			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.19			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.10			
K=H+J	total annual effective precipitation (inches)			6.69			
L=C-K	**annual consumptive use of irrigation water (inches)**			**15.05**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.90	2.50	5.43	7.75	6.27	3.63
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.26	63.50	137.92	196.85	159.26	92.20
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.48			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.62	1.89	0.64	1.28	1.21	0.69
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	48.01	16.26	32.51	30.73	17.53
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.22	31.54	12.88	29.43	25.68	12.62
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.40	1.24	0.51	1.16	1.01	0.50
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.82			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.19			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.10			
K=H+J	total annual effective precipitation (inches)			6.92			
L=C-K	**annual consumptive use of irrigation water (inches)**			**20.56**			

Table 2.1.4.140 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.11	2.07	7.62	8.82	5.75	1.76
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.19	52.58	193.55	224.03	146.05	44.70
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.13			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.62	1.89	0.64	1.28	1.21	0.69
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	48.01	16.26	32.51	30.73	17.53
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.78	30.79	14.56	31.24	24.94	11.37
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.39	1.21	0.57	1.23	0.98	0.45
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.83			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.19			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.10			
K=H+J	total annual effective precipitation (inches)			6.93			
L=C-K	**annual consumptive use of irrigation water (inches)**			**20.20**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.67	4.64	5.09	6.38	2.12	1.53
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.43			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.33			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.01			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.19			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.10			
G=D+F	total annual effective precipitation (inches)			8.11			
H=B-G	**annual consumptive use of irrigation water (inches)**			**14.32**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.27	3.77	7.11	7.91	2.75	2.21
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.02			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.33			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.01			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.19			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.10			
G=D+F	total annual effective precipitation (inches)			8.11			
H=B-G	**annual consumptive use of irrigation water (inches)**			**17.91**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.36	2.48	4.97	5.59	3.10	2.30
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.80			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.33			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.01			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.19			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.10			
G=D+F	total annual effective precipitation (inches)			8.11			
H=B-G	**annual consumptive use of irrigation water (inches)**			**11.69**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.141 Consumptive use of irrigation water, CU_W, calculations - 1990 - normal or average stream flow year - Pathfinder to Guernsey subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.31	3.52	5.26	3.06	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.27	89.41	133.60	77.72	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.15			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.62	1.79	0.98	2.76	1.15	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.15	45.47	24.89	70.10	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.62	31.77	19.77	45.73	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.01	1.25	0.78	1.80	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.84			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.77			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.39			
K=H+J	total annual effective precipitation (inches)			6.23			
L=C-K	**annual consumptive use of irrigation water (inches)**			**6.92**			

spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	2.21	4.28	2.71	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.59	56.13	108.71	68.83	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			10.05			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.62	1.79	0.98	2.76	1.15	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.15	45.47	24.89	70.10	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.97	29.53	18.72	44.84	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.98	1.16	0.74	1.77	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.65			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.77			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.39			
K=H+J	total annual effective precipitation (inches)			6.04			
L=C-K	**annual consumptive use of irrigation water (inches)**			**4.01**			

barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.40	3.85	6.78	4.92	1.71	0.92
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.56	97.79	172.21	124.97	43.43	23.37
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.58			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.62	1.79	0.98	2.76	1.15	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.15	45.47	24.89	70.10	29.21	10.16
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.75	32.36	21.53	50.74	18.96	5.81
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.01	1.27	0.85	2.00	0.75	0.23
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.11			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.77			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.39			
K=H+J	total annual effective precipitation (inches)			7.50			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.08**			

Table 2.1.4.141 Consumptive use of irrigation water, CU_W, calculations - 1990 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.41	3.86	6.80	4.94	1.72	0.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.81	98.04	172.72	125.48	43.69	23.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.66			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.62	1.79	0.98	2.76	1.15	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.15	45.47	24.89	70.10	29.21	10.16
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.76	32.38	21.55	50.79	18.97	5.81
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.01	1.27	0.85	2.00	0.75	0.23
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.11			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.77			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.39			
K=H+J	total annual effective precipitation (inches)			7.50			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.16**			

dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.88	1.14	5.83	7.55	3.37	1.07
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.35	28.96	148.08	191.77	85.60	27.18
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.84			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.62	1.79	0.98	2.76	1.15	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.15	45.47	24.89	70.10	29.21	10.16
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.01	27.82	20.41	58.76	20.80	5.85
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.98	1.10	0.80	2.31	0.82	0.23
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.24			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.77			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.39			
K=H+J	total annual effective precipitation (inches)			7.63			
L=C-K	**annual consumptive use of irrigation water (inches)**			**12.21**			

sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.61	2.36	5.80	7.55	6.91	3.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.89	59.94	147.32	191.77	175.51	100.58
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.19			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.62	1.79	0.98	2.76	1.15	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.15	45.47	24.89	70.10	29.21	10.16
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.05	29.78	20.38	58.76	25.35	6.88
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.03	1.17	0.80	2.31	1.00	0.27
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.58			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.77			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.39			
K=H+J	total annual effective precipitation (inches)			7.97			
L=C-K	**annual consumptive use of irrigation water (inches)**			**20.22**			

Table 2.1.4.141 Consumptive use of irrigation water, CU_W, calculations - 1990 - normal or average stream flow year - Pathfinder to Guernsey subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.96	1.98	8.29	8.76	6.45	1.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.38	50.29	210.57	222.50	163.83	49.78
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.40			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.62	1.79	0.98	2.76	1.15	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	41.15	45.47	24.89	70.10	29.21	10.16
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.12	29.15	23.42	62.87	24.70	6.15
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.99	1.15	0.92	2.48	0.97	0.24
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.75			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.77			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.39			
K=H+J	total annual effective precipitation (inches)			8.14			
L=C-K	**annual consumptive use of irrigation water (inches)**			**20.26**			

alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.37	4.54	5.66	6.49	2.43	1.74
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.23			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.69			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.26			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.77			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.39			
G=D+F	total annual effective precipitation (inches)			9.65			
H=B-G	**annual consumptive use of irrigation water (inches)**			**13.58**			

other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.30	2.39	5.13	5.21	2.05	1.62
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.70			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.69			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.26			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.77			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.39			
G=D+F	total annual effective precipitation (inches)			9.65			
H=B-G	**annual consumptive use of irrigation water (inches)**			**8.05**			

irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.78	1.57	3.59	3.69	2.31	1.69
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.63			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.69			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.26			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.77			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.39			
G=D+F	total annual effective precipitation (inches)			9.65			
H=B-G	**annual consumptive use of irrigation water (inches)**			**3.98**			

Notes:
(1) See Table 2.1.4.63.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.142 Summary - unit consumptive use, CU_W (inches) and total consumptive use (acre-feet) - Pathfinder to Guernsey subbasin

Unit consumptive use calculation

Crop	Portion of total subbasin
Winter wheat	0.01
Spring wheat	0.00
Barley	0.02
Oats	0.03
Dry beans	0.01
Sugar beets	0.01
Corn	0.02
Alfalfa	0.46
Other hay	0.22
Irrigated pasture	0.23

No.	Year	Winter wheat	Spring wheat	Barley	Oats	Dry beans	Sugar beets	Corn	Alfalfa	Other hay	Irrigated pasture	Area-weighted average annual subbasin unit consumptive use (inches)
1.00	1983.00	3.81	3.52	13.06	12.18	7.97	10.56	15.69	12.80	12.57	7.15	11.46
2.00	1973.00	8.24	5.90	13.34	14.40	11.35	16.70	17.04	11.89	11.61	5.83	10.77
3.00	1984.00	7.01	6.39	16.66	13.36	13.86	16.31	16.90	13.45	13.97	8.63	12.69
4.00	1986.00	6.04	6.78	15.57	14.47	12.04	19.90	17.28	13.13	12.96	7.39	12.06
5.00	1988.00	11.22	10.03	13.50	12.29	19.94	27.07	27.01	15.80	16.08	10.98	15.09
6.00	1991.00	3.17		12.70	13.19	10.66	15.49	18.05	11.18	12.77	7.15	10.90
7.00	1972.00	10.30	8.22	16.00	16.00	13.22	19.55	17.92	15.23	13.02	7.47	13.18
8.00	1978.00	5.25	4.36	10.54	14.79	10.28	17.35	17.52	10.69	9.22	4.38	9.29
9.00	1980.00	7.51	8.04	15.04	18.81	17.36	22.04	23.80	18.26	16.67	11.13	16.44
10.00	1974.00	11.82	10.07	18.78	15.36	17.16	23.72	18.79	19.19	17.77	12.07	17.25
11.00	1976.00	6.00	6.76	16.18	16.18	11.72	20.78	17.01	15.54	10.46	5.65	12.28
12.00	1975.00	9.30	7.92	14.54	15.37	13.22	21.85	18.33	17.71	14.09	9.21	14.93
13.00	1977.00	6.06	8.58	11.70	13.36	11.77	18.44	18.81	14.52	11.11	6.62	12.02
14.00	1982.00	5.09	4.86	11.68	13.51	8.67	17.81	17.34	12.64	12.16	6.67	11.33
15.00	1979.00	5.28	10.09	12.79	15.61	14.88	21.05	19.67	16.34	11.99	7.22	13.34
16.00	1987.00	8.55	7.67	13.61	14.62	15.05	20.56	20.20	14.32	17.91	11.69	14.77
17.00	1990.00	6.92	4.01	12.08	12.16	12.21	20.22	20.26	13.58	8.05	3.98	10.34
18.00	1981.00	6.67	5.28	14.76	15.08	15.07	22.69	21.22	17.19	16.68	10.94	15.71
19.00	1992.00	7.79		17.31	13.19	12.19	17.26	14.37	14.01	9.20	5.12	11.05
20.00	1985.00	7.97	7.78	18.32	16.02	14.26	22.57	18.44	9.52	15.25	9.82	11.66
21.00	1989.00	7.15	7.06	12.01	10.19	11.71	17.12	17.83	10.12	2.38	0.00	6.44
											Average:	**12.52**

Table 2.1.4.142 Summary – unit consumptive use, CU_W (inches) and total consumptive use (acre-feet) - Pathfinder to Guernsey subbasin (cont)

A	B	C	D	E	F	G = C/F	H = G x 12
No.	Year (1) (2)	Annual consumptive use of irrigation water, CU_W (acre-feet) (3)	High stream flow years:		Total *Final Settlement Stipulation* irrigated acreage (4)	Derived average *Final Settlement Stipulation* unit consumptive use (acre-feet per acre)	Derived average *Final Settlement Stipulation* unit consumptive use (inches)
1	1983	74,475	**Average:**	**71,084**	73,531	1.01	12.12
2	1973	67,693	**Maximum:**	**74,475**	70,290	0.96	11.52
3	1984	69,928	**Minimum:**	**67,693**	71,461	0.98	11.76
4	1986	77,058			76,975	1.00	12.00
5	1988	97,065			81,299	1.19	14.28
6	1991	70,454			81,168	0.87	10.44
7	1972	71,568			69,302	1.03	12.36
8	1978	60,060			79,347	0.76	9.12
9	1980	104,511			78,225	1.34	16.08
10	1974	98,269			69,894	1.41	16.92
11	1976	72,013			72,032	1.00	12.00
12	1975	85,029			71,155	1.19	14.28
13	1977	69,528	**Normal or average**		73,614	0.94	11.28
14	1982	69,207	**stream flow years:**		72,649	0.95	11.40
15	1979	79,493	**Average:**	**79,574**	78,452	1.01	12.12
16	1987	103,733	**Maximum:**	**104,511**	80,000	1.30	15.60
17	1990	65,692	**Minimum:**	**60,060**	82,411	0.80	9.60
18	1981	98,135	**Low stream flow years:**		79,527	1.23	14.76
19	1992	62,637	**Average:**	**63,323**	70,000	0.89	10.68
20	1985	55,501	**Maximum:**	**98,135**	63,833	0.87	10.44
21	1989	37,019	**Minimum:**	**37,019**	78,172	0.47	5.64
Overall average:		**75,670**			**74,921**	**1.01**	**12.11**
Calculated Platte River Basin Plan average subbasin unitconsumptive use value (inches):							**12.52**

designates high flow year and flow volume

designates low flow year and flow volume

Notes:

(1) Years and consumptive use values that are neither shaded nor outlined are normal or average stream flow years and corresponding consumptive use values.

(2) High stream flow, normal or average stream flow, and low stream flow years from Table 3.1.1.5., Sorted stream flow gauge data for each subbasin - high, low, and normal or average flow years, in Technical Memorandum 3.1, Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year Determination

(3) Annual total CU_W values for years 1972 through 1998 from first data column, Table 8a, pg. 267 - "Calculated CU_W" - *Final Settlement Stipulation,* 2001 Modified Decree; these data represent CU_W values for actual irrigated acres; 1999, 2000, and 2001 CU_W values, which are not included in Table 8a, are from the 2004 *Decree Compliance Report* as submitted by the State of Wyoming to the North Platte Decree Committee

(4) Annual irrigated acreage values for years 1972 through 1999 are sums of the first, second, third, fifth, and sixth data columns, Table 5a, pg. 263 - "Irrigated Acreage Data Used in CU_W Calculations" - *Final Settlement Stipulation,* 2001 Modified Decree; these data represent actual irrigated acreages; i.e. acres for which crop CU_W values can be calculated; 2000 and 2001 annual irrigated acreage values, which are not included in Table 5a, are from the 2004 Decree Compliance Report as submitted by the State of Wyoming to the North Platte Decree Committee

2.1.4.9.3 Consumptive Use of Irrigation Water – Guernsey to State Line Subbasin

Table 2.1.4.143 through Table 2.1.4.163 contain unit and annual consumptive use calculation parameters and results for all crops under consideration during each high, low, and normal or average stream flow year in the Guernsey to State Line subbasin. Annual consumptive use values for the Guernsey to State Line subbasin are summarized in Table 2.1.4.164.

Table 2.1.4.143 Consumptive use of irrigation water, CU_W, calculations - 1986 - high stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.96	5.46	7.51	4.76	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.78	138.68	190.75	120.90	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.69			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.75	1.50	2.92	1.56	1.59	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	38.10	74.17	39.62	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	42.87	30.07	61.63	29.99	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.69	1.18	2.43	1.18	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.48			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.65			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.83			
K=H+J	total annual effective precipitation (inches)			9.31			
L=C-K	annual consumptive use of irrigation water (inches)			10.38			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**769.85**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.73	4.69	8.37	5.76	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.94	119.13	212.60	146.30	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.55			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.75	1.50	2.92	1.56	1.59	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	38.10	74.17	39.62	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	42.32	28.80	64.67	31.71	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.67	1.13	2.55	1.25	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.60			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.65			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.83			
K=H+J	total annual effective precipitation (inches)			9.43			
L=C-K	annual consumptive use of irrigation water (inches)			11.12			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**0.93**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.84	5.21	8.46	6.68	2.28	1.00
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.74	132.33	214.88	169.67	57.91	25.40
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.47			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.75	1.50	2.92	1.56	1.59	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	38.10	74.17	39.62	40.39	30.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	42.58	29.65	64.99	33.38	26.58	18.98
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.68	1.17	2.56	1.31	1.05	0.75
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.52			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.65			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.83			
K=H+J	total annual effective precipitation (inches)			11.35			
L=C-K	annual consumptive use of irrigation water (inches)			14.12			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,095.64**			

Table 2.1.4.143 Consumptive use of irrigation water, CU_W, calculations - 1986 - high stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.73	4.88	7.93	6.26	2.14	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.94	123.95	201.42	159.00	54.36	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.88			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.75	1.50	2.92	1.56	1.59	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	38.10	74.17	39.62	40.39	30.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	42.32	29.11	63.10	32.61	26.37	18.92
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.67	1.15	2.48	1.28	1.04	0.74
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.36			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.65			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.83			
K=H+J	total annual effective precipitation (inches)			11.19			
L=C-K	annual consumptive use of irrigation water (inches)			12.69			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**942.23**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.92	1.23	5.82	8.19	3.60	0.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.37	31.24	147.83	208.03	91.44	23.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.69			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.75	1.50	2.92	1.56	1.59	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	38.10	74.17	39.62	40.39	30.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	40.45	23.74	56.08	36.32	28.61	18.91
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.59	0.93	2.21	1.43	1.13	0.74
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.03			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.65			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.83			
K=H+J	total annual effective precipitation (inches)			10.86			
L=C-K	annual consumptive use of irrigation water (inches)			9.83			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,824.28**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.69	2.56	5.81	8.23	7.41	3.42
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.93	65.02	147.57	209.04	188.21	86.87
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.12			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.75	1.50	2.92	1.56	1.59	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	38.10	74.17	39.62	40.39	30.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	42.23	25.57	56.05	36.40	35.40	21.73
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.66	1.01	2.21	1.43	1.39	0.86
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.56			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.65			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.83			
K=H+J	total annual effective precipitation (inches)			11.39			
L=C-K	annual consumptive use of irrigation water (inches)			17.73			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,445.52**			

Table 2.1.4.143 Consumptive use of irrigation water, CU_W, calculations - 1986 - high stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	2.12	8.17	9.37	6.80	1.66
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.15	53.85	207.52	238.00	172.72	42.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.11			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.75	1.50	2.92	1.56	1.59	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	69.85	38.10	74.17	39.62	40.39	30.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	40.61	24.95	63.95	38.80	34.21	19.69
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.60	0.98	2.52	1.53	1.35	0.78
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.76			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.65			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.83			
K=H+J	total annual effective precipitation (inches)			11.59			
L=C-K	annual consumptive use of irrigation water (inches)			17.52			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**29,845.32**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.76	5.48	6.30	7.85	3.76	1.99
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.14			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.52			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.94			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.65			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.83			
G=D+F	total annual effective precipitation (inches)			13.77			
H=B-G	annual consumptive use of irrigation water (inches)			14.37			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**28,762.75**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.97	3.74	7.39	8.18	4.62	2.95
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.85			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.52			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.94			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.65			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.83			
G=D+F	total annual effective precipitation (inches)			13.77			
H=B-G	annual consumptive use of irrigation water (inches)			15.08			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,063.39**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.18	2.46	5.18	5.77	5.20	3.07
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.86			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.52			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.94			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.65			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.83			
G=D+F	total annual effective precipitation (inches)			13.77			
H=B-G	annual consumptive use of irrigation water (inches)			9.09			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,449.61**			
Total Guernsey to State Line consumptive use of irrigation water during 1986 (acre-feet)				**104,200**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.144 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.52	5.76	6.88	4.52	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.61	146.30	174.75	114.81	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.68			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.48	1.43	1.53	2.86	0.79	0.32
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	88.39	36.32	38.86	72.64	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	51.46	29.24	33.16	51.20	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.03	1.15	1.31	2.02	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.51			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			8.67			
L=C-K	annual consumptive use of irrigation water (inches)			10.01			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**742.41**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.39	5.15	7.95	5.68	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.31	130.81	201.93	144.27	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.17			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.48	1.43	1.53	2.86	0.79	0.32
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	88.39	36.32	38.86	72.64	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	51.09	28.26	35.20	54.63	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.01	1.11	1.39	2.15	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.66			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			8.82			
L=C-K	annual consumptive use of irrigation water (inches)			11.35			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**0.95**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.48	5.72	8.04	6.59	2.31	1.06
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.59	145.29	204.22	167.39	58.67	26.92
C	total "yield-adjusted" evapotranspiration, ET_C (inche, Apr-Sep)(1)			25.20			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.48	1.43	1.53	2.86	0.79	0.32
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	88.39	36.32	38.86	72.64	20.07	8.13
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	51.35	29.17	35.38	57.48	13.50	4.35
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.02	1.15	1.39	2.26	0.53	0.17
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.52			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			9.68			
L=C-K	annual consumptive use of irrigation water (inches)			15.52			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,303.43**			

Table 2.1.4.144 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.25	4.84	6.80	5.58	1.95	0.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	31.75	122.94	172.72	141.73	49.53	22.86
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.32			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.48	1.43	1.53	2.86	0.79	0.32
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	88.39	36.32	38.86	72.64	20.07	8.13
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	50.69	27.77	33.01	54.33	13.23	4.31
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.00	1.09	1.30	2.14	0.52	0.17
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.22			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			9.38			
L=C-K	annual consumptive use of irrigation water (inches)			11.94			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**886.55**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.79	1.46	5.98	8.73	3.94	1.06
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.07	37.08	151.89	221.74	100.08	26.92
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.96			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.48	1.43	1.53	2.86	0.79	0.32
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	88.39	36.32	38.86	72.64	20.07	8.13
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	49.41	23.00	31.53	64.78	14.79	4.35
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.95	0.91	1.24	2.55	0.58	0.17
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.40			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			9.56			
L=C-K	annual consumptive use of irrigation water (inches)			12.40			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,347.00**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.32	2.72	5.35	7.86	7.26	3.54
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.53	69.09	135.89	199.64	184.40	89.92
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.05			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.48	1.43	1.53	2.86	0.79	0.32
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	88.39	36.32	38.86	72.64	20.07	8.13
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	50.89	24.67	30.44	61.70	17.80	4.99
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.00	0.97	1.20	2.43	0.70	0.20
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.50			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			9.66			
L=C-K	annual consumptive use of irrigation water (inches)			18.39			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,983.25**			

Table 2.1.4.144 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.75	2.20	7.36	8.78	6.53	1.68
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	19.05	55.88	186.94	223.01	165.86	42.67
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.30			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.48	1.43	1.53	2.86	0.79	0.32
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	88.39	36.32	38.86	72.64	20.07	8.13
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	49.30	23.97	34.06	64.96	17.09	4.50
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.94	0.94	1.34	2.56	0.67	0.18
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.63			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			9.79			
L=C-K	annual consumptive use of irrigation water (inches)			17.51			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**29,828.29**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.17	5.89	5.87	7.58	3.73	2.09
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.33			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.41			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.89			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
G=D+F	total annual effective precipitation (inches)			12.05			
H=B-G	annual consumptive use of irrigation water (inches)			15.28			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**30,584.19**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.59	4.11	7.03	8.07	4.67	3.15
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.62			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.41			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.89			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.16			
G=D+F	total annual effective precipitation (inches)			12.05			
H=B-G	annual consumptive use of irrigation water (inches)			16.57			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,057.71**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.95	2.70	4.93	5.70	5.27	3.28
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.83			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.41			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.89			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.16			
G=D+F	total annual effective precipitation (inches)			12.05			
H=B-G	annual consumptive use of irrigation water (inches)			10.78			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,578.31**			
Total Guernsey to State Line consumptive use of irrigation water during 1984 (acre-feet)				**111,312**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.145 Consumptive use of irrigation water, CU_W, calculations - 1985 - high stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.82	4.98	5.86	3.90	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.23	126.49	148.84	99.06	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.56			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.13	0.97	1.51	1.08	0.41	2.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	54.10	24.64	38.35	27.43	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	33.84	19.27	30.94	20.16	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.33	0.76	1.22	0.79	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.10			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.71			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.36			
K=H+J	total annual effective precipitation (inches)			5.46			
L=C-K	annual consumptive use of irrigation water (inches)			11.10			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**823.25**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.65	4.39	6.69	4.83	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.91	111.51	169.93	122.68	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.56			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.13	0.97	1.51	1.08	0.41	2.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	54.10	24.64	38.35	27.43	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	33.52	18.65	32.40	21.23	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.32	0.73	1.28	0.84	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.17			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.71			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.36			
K=H+J	total annual effective precipitation (inches)			5.53			
L=C-K	annual consumptive use of irrigation water (inches)			12.03			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1.00**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.13	5.93	8.22	6.82	2.26	1.02
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	54.10	150.62	208.79	173.23	57.40	25.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.38			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.13	0.97	1.51	1.08	0.41	2.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	54.10	24.64	38.35	27.43	10.41	62.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	34.43	20.32	35.30	23.73	6.45	36.83
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.36	0.80	1.39	0.93	0.25	1.45
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.18			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.71			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.36			
K=H+J	total annual effective precipitation (inches)			7.54			
L=C-K	annual consumptive use of irrigation water (inches)			18.84			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,796.17**			

Table 2.1.4.145 Consumptive use of irrigation water, CU_W, calculations - 1985 - high stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.97	5.49	7.61	6.31	2.09	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.04	139.45	193.29	160.27	53.09	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)				24.41		
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.13	0.97	1.51	1.08	0.41	2.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	54.10	24.64	38.35	27.43	10.41	62.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	34.13	19.83	34.11	23.06	6.39	36.67
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.34	0.78	1.34	0.91	0.25	1.44
H	calculated effective precipitation, Re, Apr-Sep (inches)				6.06		
I	average total precipitation, R_t, Oct - Mar (inches) (2)				2.71		
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)				1.36		
K=H+J	total annual effective precipitation (inches)				7.42		
L=C-K	annual consumptive use of irrigation water (inches)				16.99		
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)				891		
N	**consumptive use of irrigation water (acre-feet per irrigation season)**				**1,261.51**		
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.11	1.47	5.91	8.75	3.73	0.99
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.19	37.34	150.11	222.25	94.74	25.15
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)				21.96		
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.13	0.97	1.51	1.08	0.41	2.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	54.10	24.64	38.35	27.43	10.41	62.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	32.53	15.84	31.02	26.43	7.00	36.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.28	0.62	1.22	1.04	0.28	1.45
H	calculated effective precipitation, Re, Apr-Sep (inches)				5.89		
I	average total precipitation, R_t, Oct - Mar (inches) (2)				2.71		
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)				1.36		
K=H+J	total annual effective precipitation (inches)				7.25		
L=C-K	annual consumptive use of irrigation water (inches)				14.71		
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)				7,110		
N	**consumptive use of irrigation water (acre-feet per irrigation season)**				**8,715.68**		
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.00	2.98	5.77	8.59	7.50	3.57
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.80	75.69	146.56	218.19	190.50	90.68
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)				30.41		
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.13	0.97	1.51	1.08	0.41	2.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	54.10	24.64	38.35	27.43	10.41	62.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	34.18	17.24	30.78	26.20	8.64	42.47
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.35	0.68	1.21	1.03	0.34	1.67
H	calculated effective precipitation, Re, Apr-Sep (inches)				6.28		
I	average total precipitation, R_t, Oct - Mar (inches) (2)				2.71		
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)				1.36		
K=H+J	total annual effective precipitation (inches)				7.64		
L=C-K	annual consumptive use of irrigation water (inches)				22.77		
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)				9,777		
N	**consumptive use of irrigation water (acre-feet per irrigation season)**				**18,551.86**		

Table 2.1.4.145 Consumptive use of irrigation water, CU_W, calculations - 1985 - high stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	2.21	7.28	8.79	6.17	1.55
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.67	56.13	184.91	223.27	156.72	39.37
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.05			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.13	0.97	1.51	1.08	0.41	2.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	54.10	24.64	38.35	27.43	10.41	62.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	32.42	16.51	33.49	26.49	8.03	37.94
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.28	0.65	1.32	1.04	0.32	1.49
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.10			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.71			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.36			
K=H+J	total annual effective precipitation (inches)			7.46			
L=C-K	annual consumptive use of irrigation water (inches)			19.59			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**33,371.57**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.47	4.82	4.73	6.19	2.88	1.57
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.66			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.56			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.13			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.71			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.36			
G=D+F	total annual effective precipitation (inches)			9.49			
H=B-G	annual consumptive use of irrigation water (inches)			13.17			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**26,360.85**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.01	3.75	6.32	7.36	4.02	2.65
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.11			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.56			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.13			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.71			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.36			
G=D+F	total annual effective precipitation (inches)			9.49			
H=B-G	annual consumptive use of irrigation water (inches)			16.62			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,091.08**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	2.46	4.44	5.20	4.54	2.76
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.61			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.56			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.13			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.71			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.36			
G=D+F	total annual effective precipitation (inches)			9.49			
H=B-G	annual consumptive use of irrigation water (inches)			11.12			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,006.57**			
Total Guernsey to State Line consumptive use of irrigation water during 1985 (acre-feet)				**116,980**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.146 Consumptive use of irrigation water, CU_W, calculations - 1973 - high stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.39	6.93	8.23	5.38	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	60.71	176.02	209.04	136.65	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.93			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.83	0.26	2.45	2.88	0.11	4.71
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.48	6.60	62.23	73.15	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.44	4.40	54.90	54.06	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.20	0.17	2.16	2.13	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.66			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.96			
K=H+J	total annual effective precipitation (inches)			6.62			
L=C-K	annual consumptive use of irrigation water (inches)			16.31			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1209.66**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.85	5.21	8.02	5.69	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.99	132.33	203.71	144.53	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.77			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.83	0.26	2.45	2.88	0.11	4.71
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.48	6.60	62.23	73.15	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.53	4.00	54.26	55.00	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.16	0.16	2.14	2.17	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.63			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.96			
K=H+J	total annual effective precipitation (inches)			6.59			
L=C-K	annual consumptive use of irrigation water (inches)			14.18			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1.18**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.96	5.79	8.10	6.60	2.32	1.04
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.78	147.07	205.74	167.64	58.93	26.42
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.81			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.83	0.26	2.45	2.88	0.11	4.71
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.48	6.60	62.23	73.15	2.79	119.63
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.71	4.13	54.50	57.87	-0.02	65.17
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.17	0.16	2.15	2.28	0.00	2.57
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.33			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.96			
K=H+J	total annual effective precipitation (inches)			9.29			
L=C-K	annual consumptive use of irrigation water (inches)			16.52			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,451.84**			

Table 2.1.4.146 Consumptive use of irrigation water, CU_W, calculations - 1973 - high stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.76	5.20	7.28	5.93	2.09	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.70	132.08	184.91	150.62	53.09	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.20			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.83	0.26	2.45	2.88	0.11	4.71
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.48	6.60	62.23	73.15	2.79	119.63
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.38	4.00	52.06	55.74	-0.02	64.81
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.16	0.16	2.05	2.19	0.00	2.55
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.11			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.96			
K=H+J	total annual effective precipitation (inches)			9.07			
L=C-K	annual consumptive use of irrigation water (inches)			14.13			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,049.15**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.11	1.56	6.35	9.22	4.17	1.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.19	39.62	161.29	234.19	105.92	27.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.51			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.83	0.26	2.45	2.88	0.11	4.71
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.48	6.60	62.23	73.15	2.79	119.63
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.34	3.26	49.43	66.99	-0.02	65.39
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.12	0.13	1.95	2.64	0.00	2.57
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.41			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.96			
K=H+J	total annual effective precipitation (inches)			9.37			
L=C-K	annual consumptive use of irrigation water (inches)			14.14			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,377.95**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.90	3.00	5.87	8.57	7.95	3.78
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.26	76.20	149.10	217.68	201.93	96.01
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.07			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.83	0.26	2.45	2.88	0.11	4.71
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.48	6.60	62.23	73.15	2.79	119.63
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.61	3.53	48.12	64.60	-0.03	75.95
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.17	0.14	1.89	2.54	0.00	2.99
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.73			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.96			
K=H+J	total annual effective precipitation (inches)			9.69			
L=C-K	annual consumptive use of irrigation water (inches)			21.38			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,419.36**			

Table 2.1.4.146 Consumptive use of irrigation water, CU_W, calculations - 1973 - high stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.11	2.48	8.25	9.76	7.30	1.83
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.19	62.99	209.55	247.90	185.42	46.48
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.73			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.83	0.26	2.45	2.88	0.11	4.71
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.48	6.60	62.23	73.15	2.79	119.63
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.34	3.43	54.96	69.04	-0.03	68.11
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.12	0.14	2.16	2.72	0.00	2.68
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.82			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.96			
K=H+J	total annual effective precipitation (inches)			9.78			
L=C-K	annual consumptive use of irrigation water (inches)			20.95			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**35,688.33**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.10	6.40	6.35	8.15	4.02	2.19
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.21			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.24			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.63			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.91			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.96			
G=D+F	total annual effective precipitation (inches)			12.59			
H=B-G	annual consumptive use of irrigation water (inches)			17.62			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**35,267.90**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.81	3.57	6.09	6.93	4.03	2.66
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.09			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.24			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.63			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.91			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.96			
G=D+F	total annual effective precipitation (inches)			12.59			
H=B-G	annual consumptive use of irrigation water (inches)			12.50			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,341.67**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.08	2.35	4.26	4.90	4.55	2.76
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.90			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.24			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.63			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.91			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.96			
G=D+F	total annual effective precipitation (inches)			12.59			
H=B-G	annual consumptive use of irrigation water (inches)			7.31			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,207.55**			
Total Guernsey to State Line consumptive use of irrigation water during 1973 (acre-feet)				**119,015**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.147 Consumptive use of irrigation water, CU_W, calculations - 1972 - low stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.37	6.52	8.41	5.20	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	60.20	165.61	213.61	132.08	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.50			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.96	0.89	1.46	2.17	2.57	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.18	22.61	37.08	55.12	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	46.81	19.28	34.57	41.57	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.84	0.76	1.36	1.64	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.60			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.46			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.23			
K=H+J	total annual effective precipitation (inches)			6.83			
L=C-K	annual consumptive use of irrigation water (inches)			15.67			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,162.19**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.93	5.17	8.63	5.81	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.02	131.32	219.20	147.57	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.54			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.96	0.89	1.46	2.17	2.57	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.18	22.61	37.08	55.12	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	45.67	17.88	34.99	43.01	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.80	0.70	1.38	1.69	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.57			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.46			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.23			
K=H+J	total annual effective precipitation (inches)			6.80			
L=C-K	annual consumptive use of irrigation water (inches)			14.74			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1.23**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.96	5.49	8.36	6.45	2.17	1.19
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.78	139.45	212.34	163.83	55.12	30.23
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.62			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.96	0.89	1.46	2.17	2.57	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.18	22.61	37.08	55.12	65.28	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	45.75	18.20	34.47	44.58	40.84	12.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.80	0.72	1.36	1.76	1.61	0.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.72			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.46			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.23			
K=H+J	total annual effective precipitation (inches)			8.95			
L=C-K	annual consumptive use of irrigation water (inches)			16.67			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,474.11**			

Table 2.1.4.147 Consumptive use of irrigation water, CU_W, calculations - 1972 - low stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.05	5.73	8.72	6.73	2.26	1.24
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	52.07	145.54	221.49	170.94	57.40	31.50
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.73			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.96	0.89	1.46	2.17	2.57	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.18	22.61	37.08	55.12	65.28	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	45.98	18.45	35.17	45.28	41.05	12.05
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.81	0.73	1.38	1.78	1.62	0.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.79			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.46			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.23			
K=H+J	total annual effective precipitation (inches)			9.02			
L=C-K	annual consumptive use of irrigation water (inches)			17.71			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,314.97**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.10	1.47	6.48	8.92	3.85	1.24
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.94	37.34	164.59	226.57	97.79	31.50
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.06			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.96	0.89	1.46	2.17	2.57	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.18	22.61	37.08	55.12	65.28	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	43.60	14.54	31.03	51.17	44.86	12.05
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.72	0.57	1.22	2.01	1.77	0.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.76			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.46			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.23			
K=H+J	total annual effective precipitation (inches)			8.99			
L=C-K	annual consumptive use of irrigation water (inches)			14.07			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,336.48**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.88	2.82	5.99	8.29	7.34	4.27
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.75	71.63	152.15	210.57	186.44	108.46
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.59			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.96	0.89	1.46	2.17	2.57	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.18	22.61	37.08	55.12	65.28	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	45.55	15.68	30.20	49.40	54.52	14.27
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.79	0.62	1.19	1.94	2.15	0.56
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.25			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.46			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.23			
K=H+J	total annual effective precipitation (inches)			9.48			
L=C-K	annual consumptive use of irrigation water (inches)			21.11			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,199.37**			

Table 2.1.4.147 Consumptive use of irrigation water, CU_W, calculations - 1972 - low stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.10	2.33	8.42	9.45	6.73	2.07
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.94	59.18	213.87	240.03	170.94	52.58
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.10			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.96	0.89	1.46	2.17	2.57	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.18	22.61	37.08	55.12	65.28	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	43.60	15.26	34.59	52.71	52.69	12.62
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.72	0.60	1.36	2.08	2.07	0.50
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.33			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.46			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.23			
K=H+J	total annual effective precipitation (inches)			9.56			
L=C-K	annual consumptive use of irrigation water (inches)			20.54			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**34,989.89**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.95	5.81	6.25	7.60	3.58	2.38
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.57			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.80			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.26			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.46			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.23			
G=D+F	total annual effective precipitation (inches)			11.49			
H=B-G	annual consumptive use of irrigation water (inches)			17.08			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**34,187.04**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.80	3.38	6.25	6.76	3.75	3.02
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.96			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.80			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.26			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.46			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.23			
G=D+F	total annual effective precipitation (inches)			11.49			
H=B-G	annual consumptive use of irrigation water (inches)			13.47			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,988.98**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	2.22	4.38	4.77	4.22	3.14
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.80			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.80			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.26			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.46			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.23			
G=D+F	total annual effective precipitation (inches)			11.49			
H=B-G	annual consumptive use of irrigation water (inches)			8.31			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,467.14**			
	Total Guernsey to State Line consumptive use of irrigation water during 1972 (acre-feet)			**119,121**			

Notes:

(1) See Table 2.1.4.68.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.148 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.04	5.28	7.04	4.62	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	51.82	134.11	178.82	117.35	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.98			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.33	1.90	1.04	0.22	0.83	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	48.26	26.42	5.59	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.19	37.02	23.16	2.89	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.87	1.46	0.91	0.11	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.71			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.86			
K=H+J	total annual effective precipitation (inches)			4.21			
L=C-K	annual consumptive use of irrigation water (inches)			14.77			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,095.44**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.69	4.25	7.34	5.24	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.93	107.95	186.44	133.10	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.52			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.33	1.90	1.04	0.22	0.83	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	48.26	26.42	5.59	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.76	34.95	23.55	2.99	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.86	1.38	0.93	0.12	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.29			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.71			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.86			
K=H+J	total annual effective precipitation (inches)			4.15			
L=C-K	annual consumptive use of irrigation water (inches)			14.37			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1.20**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.85	4.88	7.68	6.28	1.97	0.97
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.99	123.95	195.07	159.51	50.04	24.64
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.63			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.33	1.90	1.04	0.22	0.83	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	48.26	26.42	5.59	21.08	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.95	36.20	24.00	3.17	13.93	26.28
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.86	1.43	0.94	0.12	0.55	1.03
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.93			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.71			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.86			
K=H+J	total annual effective precipitation (inches)			5.79			
L=C-K	annual consumptive use of irrigation water (inches)			17.84			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,647.75**			

Table 2.1.4.148 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.53	4.02	6.32	5.17	1.62	0.80
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.86	102.11	160.53	131.32	41.15	20.32
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.46			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.33	1.90	1.04	0.22	0.83	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	48.26	26.42	5.59	21.08	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.56	34.50	22.25	2.98	13.66	26.03
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.85	1.36	0.88	0.12	0.54	1.02
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.77			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.71			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.86			
K=H+J	total annual effective precipitation (inches)			5.63			
L=C-K	annual consumptive use of irrigation water (inches)			13.83			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,026.88**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	1.33	6.07	8.86	3.57	1.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.92	33.78	154.18	225.04	90.68	26.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.92			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.33	1.90	1.04	0.22	0.83	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	48.26	26.42	5.59	21.08	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.00	29.69	21.94	3.66	15.23	26.37
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.83	1.17	0.86	0.14	0.60	1.04
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.64			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.71			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.86			
K=H+J	total annual effective precipitation (inches)			5.50			
L=C-K	annual consumptive use of irrigation water (inches)			16.42			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,728.85**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.72	2.42	5.30	7.78	6.42	3.34
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.69	61.47	134.62	197.61	163.07	84.84
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.98			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.33	1.90	1.04	0.22	0.83	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	48.26	26.42	5.59	21.08	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.79	31.55	21.01	3.45	17.86	30.00
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.86	1.24	0.83	0.14	0.70	1.18
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.95			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.71			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.86			
K=H+J	total annual effective precipitation (inches)			5.81			
L=C-K	annual consumptive use of irrigation water (inches)			21.17			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,248.26**			

Table 2.1.4.148 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.95	1.90	7.09	8.43	5.61	1.54
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.13	48.26	180.09	214.12	142.49	39.12
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.52			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.33	1.90	1.04	0.22	0.83	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.78	48.26	26.42	5.59	21.08	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.87	30.65	23.22	3.57	17.07	27.13
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.82	1.21	0.91	0.14	0.67	1.07
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.82			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.71			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.86			
K=H+J	total annual effective precipitation (inches)			5.68			
L=C-K	annual consumptive use of irrigation water (inches)			19.84			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**33,797.44**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.08	5.69	6.32	8.16	3.58	2.14
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.97			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.02			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.67			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.71			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.86			
G=D+F	total annual effective precipitation (inches)			7.53			
H=B-G	annual consumptive use of irrigation water (inches)			21.44			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**42,913.95**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.73	3.06	5.85	6.70	3.47	2.50
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.31			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.02			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.67			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.71			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.86			
G=D+F	total annual effective precipitation (inches)			7.53			
H=B-G	annual consumptive use of irrigation water (inches)			15.78			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,530.52**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.04	2.01	4.10	4.74	3.91	2.60
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.40			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.02			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.67			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.71			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.86			
G=D+F	total annual effective precipitation (inches)			7.53			
H=B-G	annual consumptive use of irrigation water (inches)			10.87			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,691.67**			
	Total Guernsey to State Line consumptive use of irrigation water during 1989 (acre-feet)			**132,682**			

Notes:

(1) See Table 2.1.4.68.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.149 Consumptive use of irrigation water, CU_W, calculations - 1990 - low stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.94	5.02	7.31	4.32	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.28	127.51	185.67	109.73	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.59			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.38	2.58	1.11	2.19	2.05	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.05	65.53	28.19	55.63	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.84	48.05	25.04	39.91	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.90	1.89	0.99	1.57	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.08			
K=H+J	total annual effective precipitation (inches)			7.43			
L=C-K	annual consumptive use of irrigation water (inches)			11.16			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**827.70**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.61	4.06	7.66	4.91	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.89	103.12	194.56	124.71	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.24			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.38	2.58	1.11	2.19	2.05	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.05	65.53	28.19	55.63	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.43	45.54	25.54	41.24	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.88	1.79	1.01	1.62	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.30			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.08			
K=H+J	total annual effective precipitation (inches)			7.38			
L=C-K	annual consumptive use of irrigation water (inches)			10.86			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**0.91**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.71	4.52	7.76	5.72	2.02	1.15
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.43	114.81	197.10	145.29	51.31	29.21
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.88			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.38	2.58	1.11	2.19	2.05	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.05	65.53	28.19	55.63	52.07	53.85
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.55	46.73	25.68	43.15	33.06	32.46
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.89	1.84	1.01	1.70	1.30	1.28
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.02			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.08			
K=H+J	total annual effective precipitation (inches)			10.10			
L=C-K	annual consumptive use of irrigation water (inches)			12.78			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,896.77**			

Table 2.1.4.149 Consumptive use of irrigation water, CU_W, calculations - 1990 - low stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.56	4.11	7.06	5.20	1.83	1.04
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.62	104.39	179.32	132.08	46.48	26.42
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.80			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.38	2.58	1.11	2.19	2.05	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.05	65.53	28.19	55.63	52.07	53.85
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.36	45.67	24.70	41.92	32.71	32.26
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.88	1.80	0.97	1.65	1.29	1.27
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.86			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.08			
K=H+J	total annual effective precipitation (inches)			9.94			
L=C-K	annual consumptive use of irrigation water (inches)			10.86			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**806.36**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.03	1.29	6.42	8.42	3.83	1.28
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.16	32.77	163.07	213.87	97.28	32.51
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.27			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.38	2.58	1.11	2.19	2.05	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.05	65.53	28.19	55.63	52.07	53.85
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.71	39.02	23.83	50.18	36.58	32.70
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.85	1.54	0.94	1.98	1.44	1.29
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.04			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.08			
K=H+J	total annual effective precipitation (inches)			10.12			
L=C-K	annual consumptive use of irrigation water (inches)			12.15			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,198.88**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	2.35	5.64	7.44	6.94	4.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.42	59.69	143.26	188.98	176.28	105.92
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.21			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.38	2.58	1.11	2.19	2.05	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.05	65.53	28.19	55.63	52.07	53.85
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.50	41.40	22.81	47.50	43.52	38.43
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.89	1.63	0.90	1.87	1.71	1.51
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.51			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.08			
K=H+J	total annual effective precipitation (inches)			10.59			
L=C-K	annual consumptive use of irrigation water (inches)			17.62			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,355.90**			

Table 2.1.4.149 Consumptive use of irrigation water, CU_W, calculations - 1990 - low stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.03	2.05	8.36	8.95	6.71	2.14
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.16	52.07	212.34	227.33	170.43	54.36
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.24			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.38	2.58	1.11	2.19	2.05	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.05	65.53	28.19	55.63	52.07	53.85
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.71	40.71	26.56	51.68	42.96	34.31
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.85	1.60	1.05	2.03	1.69	1.35
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.57			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.15			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.08			
K=H+J	total annual effective precipitation (inches)			10.65			
L=C-K	annual consumptive use of irrigation water (inches)			18.59			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**31,668.07**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.81	5.19	6.31	7.33	3.63	2.51
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.78			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.43			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.86			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.15			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.08			
G=D+F	total annual effective precipitation (inches)			12.94			
H=B-G	annual consumptive use of irrigation water (inches)			14.84			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**29,703.50**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.73	3.06	6.40	6.60	3.86	3.21
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.86			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.43			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.86			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.15			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.08			
G=D+F	total annual effective precipitation (inches)			12.94			
H=B-G	annual consumptive use of irrigation water (inches)			11.92			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,954.61**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.04	2.01	4.49	4.66	4.34	3.34
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.88			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.43			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.86			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.15			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.08			
G=D+F	total annual effective precipitation (inches)			12.94			
H=B-G	annual consumptive use of irrigation water (inches)			6.94			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,741.51**			
	Total Guernsey to State Line consumptive use of irrigation water during 1990 (acre-feet)			**103,154**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.150 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - Guernsey to State Line subbasin

	Crop							
winter wheat		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.25	4.91	6.49	3.90	--	--	
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	57.15	124.71	164.85	99.06	--	--	
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)				17.55			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.36	1.33	3.79	1.56	0.22	
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	34.54	33.78	96.27	--	--	
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.95	26.60	28.45	63.33	--	--	
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.04	1.05	1.12	2.49	--	--	
H	calculated effective precipitation, Re, Apr-Sep (inches)				4.70			
I	average total precipitation, R_t, Oct - Mar (inches) (2)				2.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)				1.46			
K=H+J	total annual effective precipitation (inches)				6.16			
L=C-K	annual consumptive use of irrigation water (inches)				11.39			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)				890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**				**844.76**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.58	3.37	5.75	3.76	--	--	
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.13	85.60	146.05	95.50	--	--	
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)				14.46			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.36	1.33	3.79	1.56	0.22	
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	34.54	33.78	96.27	--	--	
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.91	24.40	27.29	62.84	--	--	
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.04	0.96	1.07	2.47	--	--	
H	calculated effective precipitation, Re, Apr-Sep (inches)				4.54			
I	average total precipitation, R_t, Oct - Mar (inches) (2)				2.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)				1.46			
K=H+J	total annual effective precipitation (inches)				6.00			
L=C-K	annual consumptive use of irrigation water (inches)				8.46			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)				1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**				**0.71**			
barley		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.25	5.00	7.77	5.84	1.99	1.23	
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	57.15	127.00	197.36	148.34	50.55	31.24	
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)				24.08			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.36	1.33	3.79	1.56	0.22	
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	34.54	33.78	96.27	39.62	5.59	
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.95	26.73	30.55	70.58	25.69	2.39	
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.04	1.05	1.20	2.78	1.01	0.09	
H	calculated effective precipitation, Re, Apr-Sep (inches)				6.17			
I	average total precipitation, R_t, Oct - Mar (inches) (2)				2.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)				1.46			
K=H+J	total annual effective precipitation (inches)				7.63			
L=C-K	annual consumptive use of irrigation water (inches)				16.45			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)				1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**				**2,441.45**			

Table 2.1.4.150 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.31	5.14	7.99	6.00	2.05	1.26
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	58.67	130.56	202.95	152.40	52.07	32.00
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.75			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.36	1.33	3.79	1.56	0.22
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	34.54	33.78	96.27	39.62	5.59
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.95	26.94	30.93	71.21	25.78	2.39
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.04	1.06	1.22	2.80	1.01	0.09
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.22			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.46			
K=H+J	total annual effective precipitation (inches)			7.68			
L=C-K	annual consumptive use of irrigation water (inches)			17.07			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,267.45**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.11	1.18	5.31	7.10	3.12	1.13
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.19	29.97	134.87	180.34	79.25	28.70
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.95			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.36	1.33	3.79	1.56	0.22
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	34.54	33.78	96.27	39.62	5.59
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.89	21.59	26.63	75.73	27.36	2.38
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.04	0.85	1.05	2.98	1.08	0.09
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.09			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.46			
K=H+J	total annual effective precipitation (inches)			7.55			
L=C-K	annual consumptive use of irrigation water (inches)			11.40			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,754.50**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	1.99	4.32	5.82	5.23	3.41
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.42	50.55	109.73	147.83	132.84	86.61
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.44			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.36	1.33	3.79	1.56	0.22
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	34.54	33.78	96.27	39.62	5.59
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.91	22.59	25.20	70.50	30.79	2.70
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.04	0.89	0.99	2.78	1.21	0.11
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.02			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.46			
K=H+J	total annual effective precipitation (inches)			7.48			
L=C-K	annual consumptive use of irrigation water (inches)			14.96			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**12,188.66**			

Table 2.1.4.150 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.04	1.75	6.48	7.07	5.11	1.76
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.42	44.45	164.59	179.58	129.79	44.70
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.21			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.36	1.33	3.79	1.56	0.22
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	34.54	33.78	96.27	39.62	5.59
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.88	22.29	28.43	75.60	30.58	2.46
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.03	0.88	1.12	2.98	1.20	0.10
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.31			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.91			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.46			
K=H+J	total annual effective precipitation (inches)			7.77			
L=C-K	annual consumptive use of irrigation water (inches)			15.44			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**26,302.04**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.02	4.72	5.20	6.15	2.94	2.20
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.23			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.41			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.99			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.91			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.46			
G=D+F	total annual effective precipitation (inches)			9.45			
H=B-G	annual consumptive use of irrigation water (inches)			14.78			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**29,583.40**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.85	2.77	5.24	5.50	3.10	2.80
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.26			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.41			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.99			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.91			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.46			
G=D+F	total annual effective precipitation (inches)			9.45			
H=B-G	annual consumptive use of irrigation water (inches)			11.81			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,881.21**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.11	1.81	3.67	3.89	3.49	2.91
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.88			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.41			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.99			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.91			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.46			
G=D+F	total annual effective precipitation (inches)			9.45			
H=B-G	annual consumptive use of irrigation water (inches)			7.43			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,358.70**			
Total Guernsey to State Line consumptive use of irrigation water during 1992 (acre-feet)				**96,623**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.151 Consumptive use of irrigation water, CU_w, calculations - 1974 - normal or average stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.42	6.76	8.74	5.75	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	61.47	171.70	222.00	146.05	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.67			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.93	0.33	1.90	0.85	1.38	0.93
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.62	8.38	48.26	21.59	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.02	6.24	44.91	17.63	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.63	0.25	1.77	0.69	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.34			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.20			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.60			
K=H+J	total annual effective precipitation (inches)			4.94			
L=C-K	annual consumptive use of irrigation water (inches)			18.73			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,389.14**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.87	5.09	8.51	6.09	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.50	129.29	216.15	154.69	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.56			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.93	0.33	1.90	0.85	1.38	0.93
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.62	8.38	48.26	21.59	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.53	5.68	44.33	17.97	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.61	0.22	1.75	0.71	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.29			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.20			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.60			
K=H+J	total annual effective precipitation (inches)			4.89			
L=C-K	annual consumptive use of irrigation water (inches)			16.67			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1.39**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.19	6.21	9.47	7.78	2.30	1.23
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	55.63	157.73	240.54	197.61	58.42	31.24
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.18			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.93	0.33	1.90	0.85	1.38	0.93
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.62	8.38	48.26	21.59	35.05	23.62
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.81	6.05	46.78	19.74	23.31	14.99
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.62	0.24	1.84	0.78	0.92	0.59
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.99			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.20			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.60			
K=H+J	total annual effective precipitation (inches)			6.59			
L=C-K	annual consumptive use of irrigation water (inches)			22.59			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,352.73**			

Table 2.1.4.151 Consumptive use of irrigation water, CU_W, calculations - 1974 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.72	4.86	7.42	6.09	1.80	0.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.69	123.44	188.47	154.69	45.72	24.38
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.85			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.93	0.33	1.90	0.85	1.38	0.93
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.62	8.38	48.26	21.59	35.05	23.62
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.40	5.61	41.72	17.97	22.67	14.76
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.61	0.22	1.64	0.71	0.89	0.58
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.65			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.20			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.60			
K=H+J	total annual effective precipitation (inches)			6.25			
L=C-K	annual consumptive use of irrigation water (inches)			16.60			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,232.55**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.17	1.59	7.04	10.30	3.91	1.23
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.72	40.39	178.82	261.62	99.31	31.24
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.24			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.93	0.33	1.90	0.85	1.38	0.93
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.62	8.38	48.26	21.59	35.05	23.62
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.94	4.67	40.84	22.73	25.50	14.99
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	0.18	1.61	0.89	1.00	0.59
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.86			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.20			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.60			
K=H+J	total annual effective precipitation (inches)			6.46			
L=C-K	annual consumptive use of irrigation water (inches)			18.78			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,127.15**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.93	2.92	6.23	9.16	7.13	4.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.02	74.17	158.24	232.66	181.10	102.36
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.40			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.93	0.33	1.90	0.85	1.38	0.93
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.62	8.38	48.26	21.59	35.05	23.62
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.59	5.03	39.03	21.33	30.53	17.53
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.61	0.20	1.54	0.84	1.20	0.69
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.08			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.20			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.60			
K=H+J	total annual effective precipitation (inches)			6.68			
L=C-K	annual consumptive use of irrigation water (inches)			24.72			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**20,140.62**			

Table 2.1.4.151 Consumptive use of irrigation water, CU_W, calculations - 1974 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.09	2.35	8.54	10.19	6.38	1.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.69	59.69	216.92	258.83	162.05	48.26
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.45			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.93	0.33	1.90	0.85	1.38	0.93
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.62	8.38	48.26	21.59	35.05	23.62
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.87	4.88	44.41	22.59	29.27	15.56
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	0.19	1.75	0.89	1.15	0.61
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.18			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.20			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.60			
K=H+J	total annual effective precipitation (inches)			6.78			
L=C-K	annual consumptive use of irrigation water (inches)			23.67			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**40,321.85**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.29	6.54	7.06	9.14	3.78	2.45
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			32.26			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.32			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.00			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.20			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.60			
G=D+F	total annual effective precipitation (inches)			7.60			
H=B-G	annual consumptive use of irrigation water (inches)			24.66			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**49,359.05**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.89	3.59	6.66	7.66	3.73	2.93
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.46			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.32			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.00			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.20			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.60			
G=D+F	total annual effective precipitation (inches)			7.60			
H=B-G	annual consumptive use of irrigation water (inches)			18.86			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**12,585.91**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.13	2.36	4.67	5.41	4.21	3.04
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.82			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.32			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.00			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.20			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.60			
G=D+F	total annual effective precipitation (inches)			7.60			
H=B-G	annual consumptive use of irrigation water (inches)			13.22			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**16,651.69**			
Total Guernsey to State Line consumptive use of irrigation water during 1974 (acre-feet)				**156,162**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.152 Consumptive use of irrigation water, CU_W, calculations - 1983 - normal or average stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.80	5.24	7.10	5.11	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.72	133.10	180.34	129.79	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.25			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.39	3.97	2.50	2.39	1.06	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.31	100.84	63.50	60.71	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.82	71.07	52.48	45.11	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.90	2.80	2.07	1.78	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.55			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.01			
K=H+J	total annual effective precipitation (inches)			9.56			
L=C-K	annual consumptive use of irrigation water (inches)			9.69			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**718.68**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.47	4.15	7.28	5.71	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.34	105.41	184.91	145.03	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.61			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.39	3.97	2.50	2.39	1.06	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.31	100.84	63.50	60.71	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.41	66.87	53.01	46.65	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.88	2.63	2.09	1.84	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.44			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.01			
K=H+J	total annual effective precipitation (inches)			9.45			
L=C-K	annual consumptive use of irrigation water (inches)			9.16			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**0.76**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.56	4.61	7.36	6.62	2.44	1.26
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.62	117.09	186.94	168.15	61.98	32.00
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.85			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.39	3.97	2.50	2.39	1.06	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.31	100.84	63.50	60.71	26.92	10.16
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.52	68.61	53.25	49.08	18.24	5.92
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.89	2.70	2.10	1.93	0.72	0.23
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.57			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.01			
K=H+J	total annual effective precipitation (inches)			10.58			
L=C-K	annual consumptive use of irrigation water (inches)			13.27			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,969.49**			

Table 2.1.4.152 Consumptive use of irrigation water, CU_W, calculations - 1983 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.43	4.23	6.75	6.07	2.24	1.16
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.32	107.44	171.45	154.18	56.90	29.46
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.88			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.39	3.97	2.50	2.39	1.06	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.31	100.84	63.50	60.71	26.92	10.16
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.36	67.17	51.46	47.60	18.04	5.88
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.88	2.64	2.03	1.87	0.71	0.23
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.36			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.01			
K=H+J	total annual effective precipitation (inches)			10.37			
L=C-K	annual consumptive use of irrigation water (inches)			11.51			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**854.62**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.80	1.13	5.22	8.36	3.96	1.20
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.32	28.70	132.59	212.34	100.58	30.48
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.67			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.39	3.97	2.50	2.39	1.06	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.31	100.84	63.50	60.71	26.92	10.16
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.58	56.49	47.25	54.09	19.86	5.90
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.85	2.22	1.86	2.13	0.78	0.23
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.07			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.01			
K=H+J	total annual effective precipitation (inches)			10.08			
L=C-K	annual consumptive use of irrigation water (inches)			10.59			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,274.58**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.11	1.74	3.89	6.26	6.08	3.33
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.19	44.20	98.81	159.00	154.43	84.58
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.41			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.39	3.97	2.50	2.39	1.06	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.31	100.84	63.50	60.71	26.92	10.16
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.96	58.45	43.87	48.10	22.36	6.64
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.86	2.30	1.73	1.89	0.88	0.26
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.92			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.01			
K=H+J	total annual effective precipitation (inches)			9.93			
L=C-K	annual consumptive use of irrigation water (inches)			12.48			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,168.08**			

Table 2.1.4.152 Consumptive use of irrigation water, CU_W, calculations - 1983 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.84	1.87	7.11	9.28	7.26	2.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.34	47.50	180.59	235.71	184.40	53.34
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.46			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.39	3.97	2.50	2.39	1.06	0.40
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	35.31	100.84	63.50	60.71	26.92	10.16
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.63	58.87	52.51	56.94	23.88	6.20
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.85	2.32	2.07	2.24	0.94	0.24
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.66			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.01			
K=H+J	total annual effective precipitation (inches)			10.67			
L=C-K	annual consumptive use of irrigation water (inches)			17.79			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**30,305.27**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.34	4.86	5.49	7.77	4.02	2.52
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.00			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.71			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.12			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.01			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.01			
G=D+F	total annual effective precipitation (inches)			13.13			
H=B-G	annual consumptive use of irrigation water (inches)			13.87			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**27,761.96**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.51	2.99	5.82	7.31	4.45	3.37
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.45			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.71			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.12			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.01			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.01			
G=D+F	total annual effective precipitation (inches)			13.13			
H=B-G	annual consumptive use of irrigation water (inches)			12.32			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,221.55**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.90	1.97	4.07	5.17	5.02	3.50
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.63			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.71			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.12			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.01			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.01			
G=D+F	total annual effective precipitation (inches)			13.13			
H=B-G	annual consumptive use of irrigation water (inches)			7.50			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,446.88**			
Total Guernsey to State Line consumptive use of irrigation water during 1983 (acre-feet)				**95,722**			

Notes:

(1) See Table 2.1.4.68.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.153 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.37	6.25	8.56	5.11	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	60.20	158.75	217.42	129.79	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.29			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.67	3.27	1.33	3.24	0.26	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	42.42	83.06	33.78	82.30	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.95	63.47	31.93	59.07	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.10	2.50	1.26	2.33	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.19			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.29			
K=H+J	total annual effective precipitation (inches)			8.48			
L=C-K	annual consumptive use of irrigation water (inches)			13.81			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,024.24**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.01	5.14	9.12	5.92	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	51.05	130.56	231.65	150.37	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.19			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.67	3.27	1.33	3.24	0.26	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	42.42	83.06	33.78	82.30	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.40	59.65	32.95	61.81	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.08	2.35	1.30	2.43	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.16			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.29			
K=H+J	total annual effective precipitation (inches)			8.45			
L=C-K	annual consumptive use of irrigation water (inches)			13.74			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1.15**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.49	3.97	6.42	4.78	1.69	0.81
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.85	100.84	163.07	121.41	42.93	20.57
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.16			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.67	3.27	1.33	3.24	0.26	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	42.42	83.06	33.78	82.30	6.60	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.61	55.88	28.33	58.00	3.28	11.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.05	2.20	1.12	2.28	0.13	0.46
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.24			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.29			
K=H+J	total annual effective precipitation (inches)			8.53			
L=C-K	annual consumptive use of irrigation water (inches)			10.63			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,577.67**			

Table 2.1.4.153 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.48	3.96	6.40	4.77	1.68	0.81
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.59	100.58	162.56	121.16	42.67	20.57
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.10			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.67	3.27	1.33	3.24	0.26	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	42.42	83.06	33.78	82.30	6.60	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.60	55.85	28.30	57.96	3.28	11.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.05	2.20	1.11	2.28	0.13	0.46
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.23			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.29			
K=H+J	total annual effective precipitation (inches)			8.52			
L=C-K	annual consumptive use of irrigation water (inches)			10.58			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**785.57**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	1.47	6.90	9.16	4.16	1.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.21	37.34	175.26	232.66	105.66	29.72
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.01			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.67	3.27	1.33	3.24	0.26	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	42.42	83.06	33.78	82.30	6.60	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.11	48.60	29.10	74.07	3.77	12.01
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.03	1.91	1.15	2.92	0.15	0.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.63			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.29			
K=H+J	total annual effective precipitation (inches)			8.92			
L=C-K	annual consumptive use of irrigation water (inches)			15.09			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,940.83**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.97	2.80	6.33	8.45	7.87	3.99
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.04	71.12	160.78	214.63	199.90	101.35
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.41			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.67	3.27	1.33	3.24	0.26	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	42.42	83.06	33.78	82.30	6.60	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.34	52.35	28.19	71.19	4.64	14.05
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.08	2.06	1.11	2.80	0.18	0.55
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.78			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.29			
K=H+J	total annual effective precipitation (inches)			9.07			
L=C-K	annual consumptive use of irrigation water (inches)			22.34			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**18,201.52**			

Table 2.1.4.153 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	2.33	8.96	9.70	7.27	1.95
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.21	59.18	227.58	246.38	184.66	49.53
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.36			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.67	3.27	1.33	3.24	0.26	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	42.42	83.06	33.78	82.30	6.60	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.11	50.99	32.65	76.34	4.49	12.54
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.03	2.01	1.29	3.01	0.18	0.49
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.01			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.29			
K=H+J	total annual effective precipitation (inches)			9.30			
L=C-K	annual consumptive use of irrigation water (inches)			22.06			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**37,579.21**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.22	6.05	6.92	8.12	4.02	2.34
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.67			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.52			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.99			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.29			
G=D+F	total annual effective precipitation (inches)			11.28			
H=B-G	annual consumptive use of irrigation water (inches)			19.39			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**38,810.70**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.83	3.29	6.47	6.75	3.94	2.77
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.05			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.52			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.99			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.29			
G=D+F	total annual effective precipitation (inches)			11.28			
H=B-G	annual consumptive use of irrigation water (inches)			13.77			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,189.18**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.10	2.16	4.54	4.77	4.44	2.88
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.89			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.52			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.99			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.58			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.29			
G=D+F	total annual effective precipitation (inches)			11.28			
H=B-G	annual consumptive use of irrigation water (inches)			8.61			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,845.01**			
Total Guernsey to State Line consumptive use of irrigation water during 1988 (acre-feet)				**126,955**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.154 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.28	5.62	6.75	5.11	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	57.91	142.75	171.45	129.79	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.76			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.59	3.67	4.07	3.15	2.35	3.79
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	14.99	93.22	103.38	80.01	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.89	67.79	79.01	57.63	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.39	2.67	3.11	2.27	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.44			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.79			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.90			
K=H+J	total annual effective precipitation (inches)			9.34			
L=C-K	annual consumptive use of irrigation water (inches)			10.42			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**772.82**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.86	4.45	6.93	5.70	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.24	113.03	176.02	144.78	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.94			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.59	3.67	4.07	3.15	2.35	3.79
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	14.99	93.22	103.38	80.01	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.66	63.50	79.81	59.56	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.38	2.50	3.14	2.34	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.36			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.79			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.90			
K=H+J	total annual effective precipitation (inches)			9.26			
L=C-K	annual consumptive use of irrigation water (inches)			9.68			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**0.81**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.75	4.38	6.20	5.86	1.94	0.91
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.45	111.25	157.48	148.84	49.28	23.11
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.04			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.59	3.67	4.07	3.15	2.35	3.79
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	14.99	93.22	103.38	80.01	59.69	96.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.60	63.25	76.62	60.09	37.22	53.59
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.38	2.49	3.02	2.37	1.47	2.11
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.84			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.79			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.90			
K=H+J	total annual effective precipitation (inches)			12.74			
L=C-K	annual consumptive use of irrigation water (inches)			8.30			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,231.86**			

Table 2.1.4.154 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.97	4.94	7.00	6.61	2.19	1.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.04	125.48	177.80	167.89	55.63	26.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.74			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.59	3.67	4.07	3.15	2.35	3.79
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	14.99	93.22	103.38	80.01	59.69	96.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.72	65.26	80.12	62.66	37.75	53.95
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.38	2.57	3.15	2.47	1.49	2.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			12.18			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.79			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.90			
K=H+J	total annual effective precipitation (inches)			13.08			
L=C-K	annual consumptive use of irrigation water (inches)			10.66			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**791.51**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.98	1.18	4.84	8.13	3.46	0.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.89	29.97	122.94	206.50	87.88	24.38
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.55			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.59	3.67	4.07	3.15	2.35	3.79
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	14.99	93.22	103.38	80.01	59.69	96.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.19	52.90	71.01	68.22	40.52	53.74
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.36	2.08	2.80	2.69	1.60	2.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.65			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.79			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.90			
K=H+J	total annual effective precipitation (inches)			12.55			
L=C-K	annual consumptive use of irrigation water (inches)			7.00			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,147.50**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	2.24	4.43	7.49	6.55	3.25
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.42	56.90	112.52	190.25	166.37	82.55
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.63			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.59	3.67	4.07	3.15	2.35	3.79
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	14.99	93.22	103.38	80.01	59.69	96.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.56	56.13	69.41	65.82	48.15	61.07
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.38	2.21	2.73	2.59	1.90	2.40
H	calculated effective precipitation, Re, Apr-Sep (inches)			12.21			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.79			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.90			
K=H+J	total annual effective precipitation (inches)			13.11			
L=C-K	annual consumptive use of irrigation water (inches)			12.52			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,200.67**			

Table 2.1.4.154 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	2.01	6.76	9.27	6.53	1.71
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.92	51.05	171.70	235.46	165.86	43.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.34			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.59	3.67	4.07	3.15	2.35	3.79
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	14.99	93.22	103.38	80.01	59.69	96.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.24	55.41	79.05	72.70	48.10	56.04
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.36	2.18	3.11	2.86	1.89	2.21
H	calculated effective precipitation, Re, Apr-Sep (inches)			12.61			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.79			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.90			
K=H+J	total annual effective precipitation (inches)			13.51			
L=C-K	annual consumptive use of irrigation water (inches)			13.83			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**23,559.41**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.75	4.84	4.85	7.21	3.35	1.91
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.91			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			17.62			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			16.74			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.79			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.90			
G=D+F	total annual effective precipitation (inches)			17.64			
H=B-G	annual consumptive use of irrigation water (inches)			7.27			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,551.51**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.11	3.55	6.12	8.09	4.43	3.05
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.35			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			17.62			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			16.74			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.79			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.90			
G=D+F	total annual effective precipitation (inches)			17.64			
H=B-G	annual consumptive use of irrigation water (inches)			9.71			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,479.81**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.27	2.33	4.29	5.71	4.99	3.17
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.76			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			17.62			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			16.74			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.79			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.90			
G=D+F	total annual effective precipitation (inches)			17.64			
H=B-G	annual consumptive use of irrigation water (inches)			4.12			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,189.48**			
Total Guernsey to State Line consumptive use of irrigation water during 1982 (acre-feet)				**66,925**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.155 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.19	4.95	6.64	4.27	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	55.63	125.73	168.66	108.46	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.05			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.71	3.56	3.06	1.25	1.38	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.03	90.42	77.72	31.75	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.00	63.58	61.18	23.69	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.47	2.50	2.41	0.93	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.31			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.31			
L=C-K	annual consumptive use of irrigation water (inches)			8.74			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**648.22**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.53	3.36	5.82	4.08	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.86	85.34	147.83	103.63	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.79			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.71	3.56	3.06	1.25	1.38	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.03	90.42	77.72	31.75	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.56	58.18	58.45	23.44	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.46	2.29	2.30	0.92	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.97			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			8.97			
L=C-K	annual consumptive use of irrigation water (inches)			5.82			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**0.49**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.74	4.00	6.33	5.08	1.53	0.89
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.20	101.60	160.78	129.03	38.86	22.61
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.57			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.71	3.56	3.06	1.25	1.38	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.03	90.42	77.72	31.75	35.05	16.00
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.70	60.30	60.13	24.79	22.33	9.82
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.46	2.37	2.37	0.98	0.88	0.39
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.45			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			10.45			
L=C-K	annual consumptive use of irrigation water (inches)			9.12			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,353.56**			

Table 2.1.4.155 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.41	5.54	8.76	7.03	2.11	1.23
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	61.21	140.72	222.50	178.56	53.59	31.24
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.08			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.71	3.56	3.06	1.25	1.38	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.03	90.42	77.72	31.75	35.05	16.00
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.15	65.71	68.87	27.64	23.06	10.01
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.48	2.59	2.71	1.09	0.91	0.39
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.17			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			11.17			
L=C-K	annual consumptive use of irrigation water (inches)			15.91			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,181.32**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	1.34	6.13	8.76	3.37	1.16
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.73	34.04	155.70	222.50	85.60	29.46
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.97			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.71	3.56	3.06	1.25	1.38	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.03	90.42	77.72	31.75	35.05	16.00
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.36	51.97	59.47	30.44	24.74	9.97
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.45	2.05	2.34	1.20	0.97	0.39
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.40			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			10.40			
L=C-K	annual consumptive use of irrigation water (inches)			11.57			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,855.23**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.17	2.66	5.88	8.46	6.67	4.11
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	55.12	67.56	149.35	214.88	169.42	104.39
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.95			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.71	3.56	3.06	1.25	1.38	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.03	90.42	77.72	31.75	35.05	16.00
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.99	55.95	58.64	29.94	29.75	11.76
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.47	2.20	2.31	1.18	1.17	0.46
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.79			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			10.79			
L=C-K	annual consumptive use of irrigation water (inches)			19.16			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**15,610.61**			

Table 2.1.4.155 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.28	2.23	8.40	9.79	6.23	2.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.51	56.64	213.36	248.67	158.24	51.56
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.96			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.71	3.56	3.06	1.25	1.38	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.03	90.42	77.72	31.75	35.05	16.00
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.40	54.62	67.50	32.25	29.03	10.47
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.45	2.15	2.66	1.27	1.14	0.41
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.08			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			11.08			
L=C-K	annual consumptive use of irrigation water (inches)			18.88			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**32,162.08**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.42	5.52	6.18	7.81	3.28	2.32
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.53			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.59			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.06			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.53			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			13.06			
H=B-G	annual consumptive use of irrigation water (inches)			15.47			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**30,964.49**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.18	3.36	6.46	7.26	3.59	3.07
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.92			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.59			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.06			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.53			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			13.06			
H=B-G	annual consumptive use of irrigation water (inches)			12.86			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,581.91**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.31	2.20	4.53	5.13	4.04	3.19
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.40			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.59			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.06			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.53			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			13.06			
H=B-G	annual consumptive use of irrigation water (inches)			7.34			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,245.34**			
Total Guernsey to State Line consumptive use of irrigation water during 1987 (acre-feet)				**106,603**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.156 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.86	4.40	6.27	4.23	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.24	111.76	159.26	107.44	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.76			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.90	1.88	1.87	2.54	1.61	0.34
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	47.75	47.50	64.52	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.03	34.90	38.56	45.35	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	1.37	1.52	1.79	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.27			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.71			
K=H+J	total annual effective precipitation (inches)			6.98			
L=C-K	annual consumptive use of irrigation water (inches)			9.78			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**725.35**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.74	4.00	7.38	5.41	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.20	101.60	187.45	137.41	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.53			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.90	1.88	1.87	2.54	1.61	0.34
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	47.75	47.50	64.52	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.93	34.13	41.02	48.44	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	1.34	1.61	1.91	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.45			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.71			
K=H+J	total annual effective precipitation (inches)			7.16			
L=C-K	annual consumptive use of irrigation water (inches)			11.37			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**0.95**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.60	3.84	6.45	5.43	1.73	1.05
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.64	97.54	163.83	137.92	43.94	26.67
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.10			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.90	1.88	1.87	2.54	1.61	0.34
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	47.75	47.50	64.52	40.89	8.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.81	33.83	38.95	48.49	26.07	4.73
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.58	1.33	1.53	1.91	1.03	0.19
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.57			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.71			
K=H+J	total annual effective precipitation (inches)			8.28			
L=C-K	annual consumptive use of irrigation water (inches)			11.82			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,754.29**			

Table 2.1.4.156 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.74	4.16	6.98	5.88	1.87	1.14
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.20	105.66	177.29	149.35	47.50	28.96
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.77			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.90	1.88	1.87	2.54	1.61	0.34
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	47.75	47.50	64.52	40.89	8.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.93	34.44	40.12	49.72	26.28	4.75
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	1.36	1.58	1.96	1.03	0.19
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.71			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.71			
K=H+J	total annual effective precipitation (inches)			8.42			
L=C-K	annual consumptive use of irrigation water (inches)			13.35			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**991.24**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	1.21	5.89	8.84	3.61	1.29
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.67	30.73	149.61	224.54	91.69	32.77
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.89			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.90	1.88	1.87	2.54	1.61	0.34
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	47.75	47.50	64.52	40.89	8.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.36	29.20	37.75	58.66	28.96	4.79
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.57	1.15	1.49	2.31	1.14	0.19
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.85			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.71			
K=H+J	total annual effective precipitation (inches)			8.56			
L=C-K	annual consumptive use of irrigation water (inches)			13.33			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,898.03**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.65	2.12	4.96	7.50	6.29	4.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.91	53.85	125.98	190.50	159.77	102.36
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.55			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.90	1.88	1.87	2.54	1.61	0.34
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	47.75	47.50	64.52	40.89	8.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.85	30.73	35.84	54.43	33.63	5.58
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.58	1.21	1.41	2.14	1.32	0.22
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.88			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.71			
K=H+J	total annual effective precipitation (inches)			8.59			
L=C-K	annual consumptive use of irrigation water (inches)			17.96			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,632.91**			

Table 2.1.4.156 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.96	1.75	6.99	8.55	5.78	1.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.38	44.45	177.55	217.17	146.81	49.78
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.99			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.90	1.88	1.87	2.54	1.61	0.34
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	47.75	47.50	64.52	40.89	8.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.29	30.10	40.14	57.72	32.69	4.98
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.56	1.19	1.58	2.27	1.29	0.20
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.09			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.71			
K=H+J	total annual effective precipitation (inches)			8.80			
L=C-K	annual consumptive use of irrigation water (inches)			17.19			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**29,283.17**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.89	4.87	5.78	7.69	3.42	2.53
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.18			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.14			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.68			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.42			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.71			
G=D+F	total annual effective precipitation (inches)			10.39			
H=B-G	annual consumptive use of irrigation water (inches)			16.79			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**33,606.58**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.62	2.60	5.31	6.25	3.29	2.92
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.99			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.14			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.68			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.42			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.71			
G=D+F	total annual effective precipitation (inches)			10.39			
H=B-G	annual consumptive use of irrigation water (inches)			11.60			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,741.07**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	1.71	3.72	4.42	3.70	3.04
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.56			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.14			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.68			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.42			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.71			
G=D+F	total annual effective precipitation (inches)			10.39			
H=B-G	annual consumptive use of irrigation water (inches)			7.17			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,031.21**			
Total Guernsey to State Line consumptive use of irrigation water during 1979 (acre-feet)				**105,665**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.157 Consumptive use of irrigation water, CU_w, calculations - 1976 - normal or average stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.91	5.62	6.85	4.57	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.51	142.75	173.99	116.08	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.95			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.22	3.14	2.78	3.14	0.74	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	56.39	79.76	70.61	79.76	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	35.31	59.13	56.87	55.76	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.39	2.33	2.24	2.20	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.16			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.12			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.06			
K=H+J	total annual effective precipitation (inches)			9.22			
L=C-K	annual consumptive use of irrigation water (inches)			9.73			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**721.64**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.87	5.34	8.40	6.11	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.50	135.64	213.36	155.19	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.72			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.22	3.14	2.78	3.14	0.74	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	56.39	79.76	70.61	79.76	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	35.23	58.21	62.02	60.77	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.39	2.29	2.44	2.39	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.51			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.12			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.06			
K=H+J	total annual effective precipitation (inches)			9.57			
L=C-K	annual consumptive use of irrigation water (inches)			12.15			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1.01**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.84	5.50	7.90	6.58	2.16	1.18
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.74	139.70	200.66	167.13	54.86	29.97
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.16			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.22	3.14	2.78	3.14	0.74	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	56.39	79.76	70.61	79.76	18.80	16.00
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	35.17	58.73	60.31	62.39	12.51	9.98
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.38	2.31	2.37	2.46	0.49	0.39
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.40			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.12			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.06			
K=H+J	total annual effective precipitation (inches)			10.46			
L=C-K	annual consumptive use of irrigation water (inches)			14.70			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,181.73**			

Table 2.1.4.157 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.72	5.15	7.39	6.15	2.02	1.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.69	130.81	187.71	156.21	51.31	27.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.53			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.22	3.14	2.78	3.14	0.74	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	56.39	79.76	70.61	79.76	18.80	16.00
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	34.94	57.60	58.62	60.91	12.42	9.94
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.38	2.27	2.31	2.40	0.49	0.39
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.24			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.12			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.06			
K=H+J	total annual effective precipitation (inches)			10.30			
L=C-K	annual consumptive use of irrigation water (inches)			13.23			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**982.33**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.03	1.48	6.15	9.14	3.86	1.24
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.16	37.59	156.21	232.16	98.04	31.50
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.90			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.22	3.14	2.78	3.14	0.74	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	56.39	79.76	70.61	79.76	18.80	16.00
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	33.61	46.92	54.69	71.98	13.76	10.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.32	1.85	2.15	2.83	0.54	0.39
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.08			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.12			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.06			
K=H+J	total annual effective precipitation (inches)			10.14			
L=C-K	annual consumptive use of irrigation water (inches)			12.76			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,560.30**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.84	2.93	5.89	8.80	7.60	4.39
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.74	74.42	149.61	223.52	193.04	111.51
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.45			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.22	3.14	2.78	3.14	0.74	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	56.39	79.76	70.61	79.76	18.80	16.00
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	35.17	50.88	53.91	70.62	16.96	11.94
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.38	2.00	2.12	2.78	0.67	0.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.42			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.12			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.06			
K=H+J	total annual effective precipitation (inches)			10.48			
L=C-K	annual consumptive use of irrigation water (inches)			20.97			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,085.31**			

Table 2.1.4.157 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	2.43	8.27	10.02	6.97	2.13
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.18	61.72	210.06	254.51	177.04	54.10
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.89			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.22	3.14	2.78	3.14	0.74	0.63
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	56.39	79.76	70.61	79.76	18.80	16.00
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	33.69	49.48	61.57	75.60	16.37	10.53
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.33	1.95	2.42	2.98	0.64	0.41
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.73			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.12			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.06			
K=H+J	total annual effective precipitation (inches)			10.79			
L=C-K	annual consumptive use of irrigation water (inches)			20.10			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**34,240.35**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.00	6.29	6.38	8.39	3.86	2.56
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.48			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.65			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.02			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.12			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.06			
G=D+F	total annual effective precipitation (inches)			13.08			
H=B-G	annual consumptive use of irrigation water (inches)			17.40			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**34,827.55**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.69	3.39	5.92	6.90	3.74	2.99
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.63			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.65			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.02			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.12			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.06			
G=D+F	total annual effective precipitation (inches)			13.08			
H=B-G	annual consumptive use of irrigation water (inches)			11.55			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,707.70**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.01	2.23	4.15	4.88	4.21	3.11
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.59			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.65			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.02			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.12			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.06			
G=D+F	total annual effective precipitation (inches)			13.08			
H=B-G	annual consumptive use of irrigation water (inches)			6.51			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,199.89**			
Total Guernsey to State Line consumptive use of irrigation water during 1976 (acre-feet)				**113,508**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.158 Consumptive use of irrigation water, CU_w, calculations - 1980 - normal or average stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.25	5.48	7.80	5.35	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	57.15	139.19	198.12	135.89	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.88			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.75	0.11	0.97	2.59	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	69.85	2.79	24.64	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.89	52.18	-0.03	19.68	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.66	2.05	0.00	0.77	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.48			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			6.35			
L=C-K	annual consumptive use of irrigation water (inches)			14.53			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,077.64**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.33	3.17	5.83	4.35	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.78	80.52	148.08	110.49	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.68			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.75	0.11	0.97	2.59	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	69.85	2.79	24.64	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.04	45.87	-0.03	18.61	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.63	1.81	0.00	0.73	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.17			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			6.04			
L=C-K	annual consumptive use of irrigation water (inches)			8.64			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**0.72**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.66	4.12	6.91	5.91	1.91	1.02
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.16	104.65	175.51	150.11	48.51	25.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.53			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.75	0.11	0.97	2.59	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	69.85	2.79	24.64	65.79	8.38
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.34	48.36	-0.03	20.30	40.53	4.53
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	1.90	0.00	0.80	1.60	0.18
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.12			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			7.99			
L=C-K	annual consumptive use of irrigation water (inches)			13.54			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,009.56**			

Table 2.1.4.158 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.81	4.48	7.50	6.41	2.08	1.11
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.97	113.79	190.50	162.81	52.83	28.19
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.39			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.75	0.11	0.97	2.59	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	69.85	2.79	24.64	65.79	8.38
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.48	49.35	-0.03	20.88	40.92	4.55
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.65	1.94	0.00	0.82	1.61	0.18
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.20			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			8.07			
L=C-K	annual consumptive use of irrigation water (inches)			15.32			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,137.51**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.04	1.24	6.01	9.17	3.81	1.20
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.42	31.50	152.65	232.92	96.77	30.48
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.47			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.75	0.11	0.97	2.59	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	69.85	2.79	24.64	65.79	8.38
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.78	41.18	-0.03	24.36	45.07	4.57
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.62	1.62	0.00	0.96	1.77	0.18
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.15			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			8.02			
L=C-K	annual consumptive use of irrigation water (inches)			14.45			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,561.63**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.79	2.37	5.56	8.53	7.26	4.13
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.47	60.20	141.22	216.66	184.40	104.90
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.64			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.75	0.11	0.97	2.59	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	69.85	2.79	24.64	65.79	8.38
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.46	43.86	-0.03	23.50	54.65	5.38
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.65	1.73	0.00	0.93	2.15	0.21
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.67			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			8.54			
L=C-K	annual consumptive use of irrigation water (inches)			21.10			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,191.23**			

Table 2.1.4.158 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.04	1.96	7.79	9.69	6.64	2.00
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.42	49.78	197.87	246.13	168.66	50.80
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.12			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.75	0.11	0.97	2.59	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	69.85	2.79	24.64	65.79	8.38
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.78	42.87	-0.03	25.07	52.79	4.78
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.62	1.69	0.00	0.99	2.08	0.19
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.57			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			8.44			
L=C-K	annual consumptive use of irrigation water (inches)			20.68			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**35,228.38**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.69	4.67	5.55	7.48	3.39	2.21
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.99			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.74			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.35			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
G=D+F	total annual effective precipitation (inches)			10.22			
H=B-G	annual consumptive use of irrigation water (inches)			15.77			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**31,564.97**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.46	2.42	4.94	5.91	3.16	2.49
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.38			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.74			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.35			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
G=D+F	total annual effective precipitation (inches)			10.22			
H=B-G	annual consumptive use of irrigation water (inches)			10.16			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,780.11**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.87	1.59	3.46	4.18	3.56	2.59
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.25			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.74			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.35			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.87			
G=D+F	total annual effective precipitation (inches)			10.22			
H=B-G	annual consumptive use of irrigation water (inches)			6.03			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,595.29**			
Total Guernsey to State Line consumptive use of irrigation water during 1980 (acre-feet)				**111,147**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.159 Consumptive use of irrigation water, CU_W, calculations - 1977 - normal or average stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.55	4.10	5.31	3.23	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.37	104.14	134.87	82.04	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.19			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.12	1.52	4.66	1.55	1.28	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	53.85	38.61	118.36	39.37	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	33.20	28.22	81.97	27.37	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.31	1.11	3.23	1.08	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.73			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			0.56			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.28			
K=H+J	total annual effective precipitation (inches)			7.01			
L=C-K	annual consumptive use of irrigation water (inches)			7.18			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**532.52**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.96	5.04	8.44	5.58	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.78	128.02	214.38	141.73	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.02			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.12	1.52	4.66	1.55	1.28	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	53.85	38.61	118.36	39.37	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	33.97	29.74	97.63	31.21	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.34	1.17	3.84	1.23	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.58			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			0.56			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.28			
K=H+J	total annual effective precipitation (inches)			7.86			
L=C-K	annual consumptive use of irrigation water (inches)			13.16			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1.10**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.65	4.44	6.78	5.14	1.49	0.95
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.91	112.78	172.21	130.56	37.85	24.13
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.45			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.12	1.52	4.66	1.55	1.28	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	53.85	38.61	118.36	39.37	32.51	7.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	33.38	28.76	88.98	30.45	20.75	3.75
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.31	1.13	3.50	1.20	0.82	0.15
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.11			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			0.56			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.28			
K=H+J	total annual effective precipitation (inches)			8.39			
L=C-K	annual consumptive use of irrigation water (inches)			12.06			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,789.91**			

Table 2.1.4.159 Consumptive use of irrigation water, CU_W, calculations - 1977 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.60	4.32	6.60	5.00	1.45	0.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.64	109.73	167.64	127.00	36.83	23.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.90			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.12	1.52	4.66	1.55	1.28	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	53.85	38.61	118.36	39.37	32.51	7.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	33.29	28.57	88.09	30.21	20.70	3.74
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.31	1.12	3.47	1.19	0.81	0.15
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.05			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			0.56			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.28			
K=H+J	total annual effective precipitation (inches)			8.33			
L=C-K	annual consumptive use of irrigation water (inches)			11.57			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**859.07**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	1.47	6.51	8.79	3.27	1.23
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.96	37.34	165.35	223.27	83.06	31.24
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.41			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.12	1.52	4.66	1.55	1.28	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	53.85	38.61	118.36	39.37	32.51	7.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	32.45	24.36	87.65	37.34	22.92	3.80
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.28	0.96	3.45	1.47	0.90	0.15
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.21			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			0.56			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.28			
K=H+J	total annual effective precipitation (inches)			8.49			
L=C-K	annual consumptive use of irrigation water (inches)			13.92			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,247.60**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.97	2.82	6.03	8.19	6.24	4.23
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.04	71.63	153.16	208.03	158.50	107.44
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.48			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.12	1.52	4.66	1.55	1.28	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	53.85	38.61	118.36	39.37	32.51	7.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	33.99	26.27	85.33	36.11	27.05	4.50
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.34	1.03	3.36	1.42	1.06	0.18
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.39			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			0.56			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.28			
K=H+J	total annual effective precipitation (inches)			8.67			
L=C-K	annual consumptive use of irrigation water (inches)			20.81			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**16,954.95**			

Table 2.1.4.159 Consumptive use of irrigation water, CU_W, calculations - 1977 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.18	2.39	8.69	9.58	5.87	2.11
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.97	60.71	220.73	243.33	149.10	53.59
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.82			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.12	1.52	4.66	1.55	1.28	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	53.85	38.61	118.36	39.37	32.51	7.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	32.52	25.65	99.00	39.02	26.50	4.00
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.28	1.01	3.90	1.54	1.04	0.16
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.93			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			0.56			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.28			
K=H+J	total annual effective precipitation (inches)			9.21			
L=C-K	annual consumptive use of irrigation water (inches)			20.61			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**35,109.14**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.10	5.87	6.33	7.58	3.07	2.39
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.34			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.42			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.85			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			0.56			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.28			
G=D+F	total annual effective precipitation (inches)			11.13			
H=B-G	annual consumptive use of irrigation water (inches)			17.21			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**34,447.25**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.76	3.18	5.91	6.27	2.99	2.80
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.91			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.42			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.85			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			0.56			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.28			
G=D+F	total annual effective precipitation (inches)			11.13			
H=B-G	annual consumptive use of irrigation water (inches)			11.78			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,861.19**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	2.08	4.14	4.43	3.38	2.92
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.00			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.42			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.85			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			0.56			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.28			
G=D+F	total annual effective precipitation (inches)			11.13			
H=B-G	annual consumptive use of irrigation water (inches)			6.87			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,653.34**			
Total Guernsey to State Line consumptive use of irrigation water during 1977 (acre-feet)				**114,456**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.160 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.24	5.39	7.89	4.96	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	56.90	136.91	200.41	125.98	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.48			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.20	4.47	1.71	2.20	1.05	0.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.48	113.54	43.43	55.88	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.34	79.43	38.88	41.52	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.80	3.13	1.53	1.63	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.09			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.78			
K=H+J	total annual effective precipitation (inches)			8.87			
L=C-K	annual consumptive use of irrigation water (inches)			11.61			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**861.08**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.47	3.46	6.55	4.48	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.34	87.88	166.37	113.79	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.96			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.20	4.47	1.71	2.20	1.05	0.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.48	113.54	43.43	55.88	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.49	71.31	36.08	40.43	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.77	2.81	1.42	1.59	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.59			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.78			
K=H+J	total annual effective precipitation (inches)			8.37			
L=C-K	annual consumptive use of irrigation water (inches)			7.59			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**0.63**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.90	4.69	8.07	6.34	2.10	1.21
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.26	119.13	204.98	161.04	53.34	30.73
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.31			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.20	4.47	1.71	2.20	1.05	0.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.48	113.54	43.43	55.88	26.67	11.68
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.96	76.38	39.28	44.85	17.74	7.00
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.79	3.01	1.55	1.77	0.70	0.28
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.10			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.78			
K=H+J	total annual effective precipitation (inches)			9.88			
L=C-K	annual consumptive use of irrigation water (inches)			14.43			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,141.65**			

Table 2.1.4.160 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.93	4.75	8.18	6.42	2.13	1.23
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.02	120.65	207.77	163.07	54.10	31.24
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.64			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.20	4.47	1.71	2.20	1.05	0.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.48	113.54	43.43	55.88	26.67	11.68
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.99	76.64	39.52	45.05	17.77	7.01
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.79	3.02	1.56	1.77	0.70	0.28
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.12			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.78			
K=H+J	total annual effective precipitation (inches)			9.90			
L=C-K	annual consumptive use of irrigation water (inches)			14.74			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,094.45**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.91	1.07	5.35	7.48	3.18	1.08
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.11	27.18	135.89	189.99	80.77	27.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.07			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.20	4.47	1.71	2.20	1.05	0.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.48	113.54	43.43	55.88	26.67	11.68
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.89	62.40	33.74	47.80	18.84	6.95
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.74	2.46	1.33	1.88	0.74	0.27
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.42			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.78			
K=H+J	total annual effective precipitation (inches)			9.20			
L=C-K	annual consumptive use of irrigation water (inches)			9.87			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,847.98**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.64	2.14	5.18	7.28	6.36	3.87
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.66	54.36	131.57	184.91	161.54	98.30
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.47			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.20	4.47	1.71	2.20	1.05	0.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.48	113.54	43.43	55.88	26.67	11.68
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.67	66.24	33.42	47.27	22.50	8.12
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.77	2.61	1.32	1.86	0.89	0.32
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.77			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.78			
K=H+J	total annual effective precipitation (inches)			9.55			
L=C-K	annual consumptive use of irrigation water (inches)			16.92			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,785.57**			

Table 2.1.4.160 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	1.80	7.35	8.38	5.90	1.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.64	45.72	186.69	212.85	149.86	48.26
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.30			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.20	4.47	1.71	2.20	1.05	0.46
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	30.48	113.54	43.43	55.88	26.67	11.68
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.95	65.00	37.73	50.27	21.93	7.28
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.75	2.56	1.49	1.98	0.86	0.29
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.93			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.78			
K=H+J	total annual effective precipitation (inches)			9.71			
L=C-K	annual consumptive use of irrigation water (inches)			16.59			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**28,261.07**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.90	5.00	6.10	7.54	3.50	2.45
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.49			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.09			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.54			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.55			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.78			
G=D+F	total annual effective precipitation (inches)			12.32			
H=B-G	annual consumptive use of irrigation water (inches)			15.17			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**30,364.02**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.07	3.41	7.15	7.86	4.30	3.64
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.43			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.09			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.54			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.55			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.78			
G=D+F	total annual effective precipitation (inches)			12.32			
H=B-G	annual consumptive use of irrigation water (inches)			16.11			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,750.74**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.24	2.24	5.01	5.55	4.85	3.78
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.67			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.09			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.54			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.55			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.78			
G=D+F	total annual effective precipitation (inches)			12.32			
H=B-G	annual consumptive use of irrigation water (inches)			10.35			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,036.69**			
Total Guernsey to State Line consumptive use of irrigation water during 1978 (acre-feet)				**106,144**			

Notes:

(1) See Table 2.1.4.68.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.161 Consumptive use of irrigation water, CU_W, calculations - 1981 - normal or average stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.24	4.74	7.34	4.52	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	56.90	120.40	186.44	114.81	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.84			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.60	3.30	1.38	3.07	1.99	0.59
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	40.64	83.82	35.05	77.98	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.67	58.80	30.89	54.51	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.05	2.31	1.22	2.15	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.73			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.68			
K=H+J	total annual effective precipitation (inches)			8.41			
L=C-K	annual consumptive use of irrigation water (inches)			10.43			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**773.56**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.50	3.11	6.23	4.17	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.10	78.99	158.24	105.92	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.01			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.60	3.30	1.38	3.07	1.99	0.59
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	40.64	83.82	35.05	77.98	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.59	53.69	29.03	53.46	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.01	2.11	1.14	2.10	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.36			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.68			
K=H+J	total annual effective precipitation (inches)			8.04			
L=C-K	annual consumptive use of irrigation water (inches)			6.97			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**0.58**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.59	3.44	6.27	4.81	1.59	0.89
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.39	87.38	159.26	122.17	40.39	22.61
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.59			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.60	3.30	1.38	3.07	1.99	0.59
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	40.64	83.82	35.05	77.98	50.55	14.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.72	54.69	29.09	55.40	31.42	9.15
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.01	2.15	1.15	2.18	1.24	0.36
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.09			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.68			
K=H+J	total annual effective precipitation (inches)			9.77			
L=C-K	annual consumptive use of irrigation water (inches)			8.82			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,309.04**			

Table 2.1.4.161 Consumptive use of irrigation water, CU_W, calculations - 1981 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.13	4.61	8.41	6.46	2.13	1.20
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	54.10	117.09	213.61	164.08	54.10	30.48
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.94			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.60	3.30	1.38	3.07	1.99	0.59
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	40.64	83.82	35.05	77.98	50.55	14.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.51	58.38	32.79	60.75	32.38	9.31
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.04	2.30	1.29	2.39	1.27	0.37
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.66			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.68			
K=H+J	total annual effective precipitation (inches)			10.34			
L=C-K	annual consumptive use of irrigation water (inches)			14.60			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,084.05**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	1.18	6.25	8.55	3.62	1.20
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.96	29.97	158.75	217.17	91.95	30.48
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.94			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.60	3.30	1.38	3.07	1.99	0.59
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	40.64	83.82	35.05	77.98	50.55	14.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.08	48.20	29.06	68.27	35.19	9.31
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.99	1.90	1.14	2.69	1.39	0.37
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.48			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.68			
K=H+J	total annual effective precipitation (inches)			10.16			
L=C-K	annual consumptive use of irrigation water (inches)			11.78			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,979.65**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.97	2.27	5.78	7.95	6.91	4.13
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.04	57.66	146.81	201.93	175.51	104.90
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.01			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.60	3.30	1.38	3.07	1.99	0.59
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	40.64	83.82	35.05	77.98	50.55	14.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.27	51.23	28.31	66.02	42.29	10.96
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.03	2.02	1.11	2.60	1.66	0.43
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.85			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.68			
K=H+J	total annual effective precipitation (inches)			10.53			
L=C-K	annual consumptive use of irrigation water (inches)			18.48			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**15,056.58**			

Table 2.1.4.161 Consumptive use of irrigation water, CU_W, calculations - 1981 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	1.87	8.12	9.06	6.34	2.00
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.96	47.50	206.25	230.12	161.04	50.80
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.53			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.60	3.30	1.38	3.07	1.99	0.59
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	40.64	83.82	35.05	77.98	50.55	14.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.08	50.09	32.26	70.25	40.97	9.73
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.99	1.97	1.27	2.77	1.61	0.38
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.99			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.35			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.68			
K=H+J	total annual effective precipitation (inches)			10.67			
L=C-K	annual consumptive use of irrigation water (inches)			17.86			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**30,424.51**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.20	4.86	6.27	7.58	3.50	2.40
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.81			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.93			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.33			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.35			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.68			
G=D+F	total annual effective precipitation (inches)			13.01			
H=B-G	annual consumptive use of irrigation water (inches)			14.80			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**29,623.43**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.12	3.06	6.79	7.30	3.97	3.29
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.53			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.93			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.33			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.35			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.68			
G=D+F	total annual effective precipitation (inches)			13.01			
H=B-G	annual consumptive use of irrigation water (inches)			13.52			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,022.35**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.27	2.01	4.76	5.16	4.48	3.43
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.11			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.93			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.33			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.35			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.68			
G=D+F	total annual effective precipitation (inches)			13.01			
H=B-G	annual consumptive use of irrigation water (inches)			8.10			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,202.63**			
Total Guernsey to State Line consumptive use of irrigation water during 1981 (acre-feet)				**104,476**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.162 Consumptive use of irrigation water, CU_W, calculations - 1975 - normal or average stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.16	6.21	8.19	5.69	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	54.86	157.73	208.03	144.53	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.25			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.67	1.97	1.22	0.86	0.44	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	67.82	50.04	30.99	21.84	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	42.23	40.30	28.82	17.78	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.66	1.59	1.13	0.70	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.08			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			6.19			
L=C-K	annual consumptive use of irrigation water (inches)			16.06			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,191.12**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.78	4.98	8.51	6.43	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.21	126.49	216.15	163.32	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.70			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.67	1.97	1.22	0.86	0.44	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	67.82	50.04	30.99	21.84	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	41.34	37.62	29.34	18.52	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.63	1.48	1.16	0.73	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.00			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			6.11			
L=C-K	annual consumptive use of irrigation water (inches)			15.59			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1.30**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.89	5.53	8.60	7.46	2.44	1.19
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.01	140.46	218.44	189.48	61.98	30.23
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.11			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.67	1.97	1.22	0.86	0.44	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	67.82	50.04	30.99	21.84	11.18	9.14
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	41.60	38.79	29.48	19.62	7.11	5.14
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.64	1.53	1.16	0.77	0.28	0.20
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.58			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			6.69			
L=C-K	annual consumptive use of irrigation water (inches)			20.42			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,030.67**			

Table 2.1.4.162 Consumptive use of irrigation water, CU_W, calculations - 1975 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.43	4.17	6.49	5.63	1.84	0.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.32	105.92	164.85	143.00	46.74	22.86
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.46			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.67	1.97	1.22	0.86	0.44	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	67.82	50.04	30.99	21.84	11.18	9.14
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	40.54	35.96	26.21	17.72	6.88	5.06
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.60	1.42	1.03	0.70	0.27	0.20
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.22			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			6.33			
L=C-K	annual consumptive use of irrigation water (inches)			14.13			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,049.15**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.94	1.32	5.95	9.19	3.86	1.11
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.88	33.53	151.13	233.43	98.04	28.19
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.37			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.67	1.97	1.22	0.86	0.44	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	67.82	50.04	30.99	21.84	11.18	9.14
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	39.45	30.67	25.43	21.61	7.70	5.12
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.55	1.21	1.00	0.85	0.30	0.20
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.11			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			6.22			
L=C-K	annual consumptive use of irrigation water (inches)			16.15			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,568.88**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.74	2.72	5.91	9.19	7.92	4.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.20	69.09	150.11	233.43	201.17	104.14
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.58			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.67	1.97	1.22	0.86	0.44	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	67.82	50.04	30.99	21.84	11.18	9.14
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	41.25	33.16	25.37	21.61	9.66	6.05
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.62	1.31	1.00	0.85	0.38	0.24
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.40			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			6.51			
L=C-K	annual consumptive use of irrigation water (inches)			25.07			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**20,425.78**			

Table 2.1.4.162 Consumptive use of irrigation water, CU_W, calculations - 1975 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	2.16	7.97	10.03	6.96	1.91
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.64	54.86	202.44	254.76	176.78	48.51
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.00			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.67	1.97	1.22	0.86	0.44	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	67.82	50.04	30.99	21.84	11.18	9.14
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	39.51	32.14	28.46	22.65	9.16	5.35
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.56	1.27	1.12	0.89	0.36	0.21
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.41			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			6.52			
L=C-K	annual consumptive use of irrigation water (inches)			23.48			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**39,998.18**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.76	5.65	6.23	8.51	3.90	2.32
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.37			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.52			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.14			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.21			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
G=D+F	total annual effective precipitation (inches)			8.25			
H=B-G	annual consumptive use of irrigation water (inches)			21.12			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**42,273.44**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.00	3.92	7.43	9.02	4.87	3.50
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.74			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.52			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.14			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.21			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.11			
G=D+F	total annual effective precipitation (inches)			8.25			
H=B-G	annual consumptive use of irrigation water (inches)			22.49			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**15,008.33**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.20	2.58	5.20	6.37	5.49	3.63
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.47			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.52			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.14			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.21			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.11			
G=D+F	total annual effective precipitation (inches)			8.25			
H=B-G	annual consumptive use of irrigation water (inches)			16.22			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**20,430.44**			
Total Guernsey to State Line consumptive use of irrigation water during 1975 (acre-feet)				**152,977**			

Notes:

(1) See Table 2.1.4.68.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.163 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Guernsey to State Line subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.12	5.79	7.64	5.15	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.85	147.07	194.06	130.81	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.70			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.52	4.57	4.52	1.02	0.48	0.92
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	116.08	114.81	25.91	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	25.26	82.79	90.94	20.45	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.99	3.26	3.58	0.81	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.64			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			9.94			
L=C-K	annual consumptive use of irrigation water (inches)			10.76			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			890			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**798.03**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.51	4.03	6.89	5.05	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.35	102.36	175.01	128.27	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.48			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.52	4.57	4.52	1.02	0.48	0.92
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	116.08	114.81	25.91	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.42	75.04	87.20	20.33	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.96	2.95	3.43	0.80	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.14			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			9.44			
L=C-K	annual consumptive use of irrigation water (inches)			8.04			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**0.67**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.80	5.03	7.81	6.58	2.33	1.20
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.72	127.76	198.37	167.13	59.18	30.48
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.75			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.52	4.57	4.52	1.02	0.48	0.92
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	116.08	114.81	25.91	12.19	23.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.82	79.35	91.80	22.15	7.84	14.81
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.98	3.12	3.61	0.87	0.31	0.58
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.47			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			10.77			
L=C-K	annual consumptive use of irrigation water (inches)			13.98			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,781			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,074.87**			

Table 2.1.4.163 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.78	4.96	7.71	6.49	2.30	1.19
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.21	125.98	195.83	164.85	58.42	30.23
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.43			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.52	4.57	4.52	1.02	0.48	0.92
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	116.08	114.81	25.91	12.19	23.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.79	79.04	91.29	22.03	7.83	14.80
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.98	3.11	3.59	0.87	0.31	0.58
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.44			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			10.74			
L=C-K	annual consumptive use of irrigation water (inches)			13.69			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			891			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,016.48**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.92	1.23	5.54	8.32	3.78	1.15
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.37	31.24	140.72	211.33	96.01	29.21
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.94			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.52	4.57	4.52	1.02	0.48	0.92
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	116.08	114.81	25.91	12.19	23.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.63	64.18	80.87	24.41	8.50	14.76
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.93	2.53	3.18	0.96	0.33	0.58
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.51			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			9.81			
L=C-K	annual consumptive use of irrigation water (inches)			11.13			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			7,110			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,594.53**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.63	2.42	5.24	7.92	7.39	4.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.40	61.47	133.10	201.17	187.71	102.36
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.63			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.52	4.57	4.52	1.02	0.48	0.92
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	116.08	114.81	25.91	12.19	23.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.58	68.59	79.53	23.87	10.40	17.34
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.97	2.70	3.13	0.94	0.41	0.68
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.83			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			10.13			
L=C-K	annual consumptive use of irrigation water (inches)			18.50			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			9,777			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**15,072.88**			

Table 2.1.4.163 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Guernsey to State Line subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.98	2.07	7.65	9.36	7.03	2.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.89	52.58	194.31	237.74	178.56	51.56
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.12			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.52	4.57	4.52	1.02	0.48	0.92
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	38.61	116.08	114.81	25.91	12.19	23.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.70	67.26	90.99	25.86	10.19	15.51
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.93	2.65	3.58	1.02	0.40	0.61
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.19			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			10.49			
L=C-K	annual consumptive use of irrigation water (inches)			18.63			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			20,442			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**31,736.21**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.58	5.04	5.54	7.36	3.65	2.28
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.45			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.03			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.38			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
G=D+F	total annual effective precipitation (inches)			13.68			
H=B-G	annual consumptive use of irrigation water (inches)			12.77			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			24,019			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**25,560.22**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.91	3.57	6.75	7.95	4.65	3.52
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.35			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.03			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.38			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.30			
G=D+F	total annual effective precipitation (inches)			13.68			
H=B-G	annual consumptive use of irrigation water (inches)			14.67			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,008			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,789.78**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	2.35	4.73	5.62	5.24	3.66
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.75			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.03			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.38			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.30			
G=D+F	total annual effective precipitation (inches)			13.68			
H=B-G	annual consumptive use of irrigation water (inches)			9.07			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			15,115			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,424.42**			
Total Guernsey to State Line consumptive use of irrigation water during 1991 (acre-feet)				**104,068**			

Notes:
(1) See Table 2.1.4.68.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.164 Summary – consumptive use of irrigation water - Guernsey to State Line subbasin

No.	Year	Consumptive use of irrigation water (acre-feet)		
1	1986	104,200	**High stream flow years:**	
2	1984	111,312	**Average:**	**112,877**
3	1985	116,980	**Maximum:**	**119,015**
4	1973	119,015	**Minimum:**	**104,200**
5	1974	156,162		
6	1983	95,722		
7	1988	126,955		
8	1982	66,925		
9	1987	106,603		
10	1979	105,665		
11	1976	113,508		
12	1980	111,147		
13	1977	114,456	**Normal or average stream flow**	
14	1978	106,144	**years:**	
15	1981	104,476	**Average:**	**112,678**
16	1975	152,977	**Maximum:**	**156,162**
17	1991	104,068	**Minimum:**	**66,925**
18	1972	119,121	**Low stream flow years:**	
19	1989	132,682	**Average:**	**112,895**
20	1990	103,154	**Maximum:**	**132,682**
21	1992	96,623	**Minimum:**	**96,623**
	Average:	**112,757**		
	Maximum:	**156,162**		
	Minimum:	**66,925**		

designates high flow year

designates low flow year

Years which are neither shaded or outlined are normal or average stream flow years

See Table 3.1.1.5. in Technical Memorandum 3.1., Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year Determination

2.1.4.9.4 Consumptive Use of Irrigation Water – Upper Laramie Subbasin

Table 2.1.4.165 through Table 2.1.4.194 contain unit and annual consumptive use calculation parameters and results for all crops under consideration during each high, low, and normal or average stream flow year in the Upper Laramie subbasin. Annual consumptive use values for the Upper Laramie subbasin are summarized in Table 2.1.4.195.

Table 2.1.4.165 Consumptive use of irrigation water, CU_W, calculations - 1983 - high stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.73	1.89	5.88	4.94	2.56	1.98
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.98			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.16			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.65			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.70			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.35			
G=D+F	total annual effective precipitation (inches)			12.00			
H=B-G	annual consumptive use of irrigation water (inches)			5.98			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,438.19**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	2.15	5.28	4.04	3.00	2.32
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.64			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.16			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.65			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.70			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.35			
G=D+F	total annual effective precipitation (inches)			12.00			
H=B-G	annual consumptive use of irrigation water (inches)			5.64			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**22,774.32**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	1.99	3.83	4.33	2.58	2.00
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.58			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.16			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.65			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.70			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.35			
G=D+F	total annual effective precipitation (inches)			12.00			
H=B-G	annual consumptive use of irrigation water (inches)			3.58			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**12,185.13**			
	Total Upper Laramie consumptive use of irrigation water during 1983 (acre-feet)			**36,398**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.166 Consumptive use of irrigation water, CU_W, calculations - 1986 - high stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	2.06	6.47	4.54	2.47	1.51
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.05			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.14			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.73			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.49			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.75			
G=D+F	total annual effective precipitation (inches)			10.48			
H=B-G	annual consumptive use of irrigation water (inches)			7.57			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,820.59**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.24	2.50	6.21	3.96	3.09	1.90
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.90			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.14			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.73			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.49			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.75			
G=D+F	total annual effective precipitation (inches)			10.48			
H=B-G	annual consumptive use of irrigation water (inches)			8.42			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**33,999.96**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.24	2.32	4.51	4.25	2.66	1.64
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.62			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.14			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.73			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.49			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.75			
G=D+F	total annual effective precipitation (inches)			10.48			
H=B-G	annual consumptive use of irrigation water (inches)			6.14			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**20,898.51**			
	Total Upper Laramie consumptive use of irrigation water during 1986 (acre-feet)			**56,719**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.167 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.83	2.49	6.50	5.23	2.55	1.76
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.36			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.55			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.02			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.60			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.80			
G=D+F	total annual effective precipitation (inches)			12.82			
H=B-G	annual consumptive use of irrigation water (inches)			6.54			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,572.87**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.96	2.80	5.79	4.24	2.97	2.04
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.80			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.55			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.02			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.60			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.80			
G=D+F	total annual effective precipitation (inches)			12.82			
H=B-G	annual consumptive use of irrigation water (inches)			5.98			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**24,147.24**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.96	2.60	4.20	4.53	2.55	1.76
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.60			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.55			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.02			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.60			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.80			
G=D+F	total annual effective precipitation (inches)			12.82			
H=B-G	annual consumptive use of irrigation water (inches)			3.78			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**12,865.86**			
	Total Upper Laramie consumptive use of irrigation water during 1984 (acre-feet)			**38,586**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.168 Consumptive use of irrigation water, CU_w, calculations - 1992 - low stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.03	1.94	4.97	3.74	2.02	1.57
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.27			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.79			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.35			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.17			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.09			
G=D+F	total annual effective precipitation (inches)			10.44			
H=B-G	annual consumptive use of irrigation water (inches)			4.83			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,161.62**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.28	2.35	4.79	3.28	2.53	1.97
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.20			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.79			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.35			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.17			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.09			
G=D+F	total annual effective precipitation (inches)			10.44			
H=B-G	annual consumptive use of irrigation water (inches)			5.76			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**23,258.88**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.28	2.19	3.47	3.51	2.18	1.70
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.33			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.79			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.35			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.17			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.09			
G=D+F	total annual effective precipitation (inches)			10.44			
H=B-G	annual consumptive use of irrigation water (inches)			3.89			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,240.26**			
	Total Upper Laramie consumptive use of irrigation water during 1992 (acre-feet)			**37,661**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.169 Consumptive use of irrigation water, CU_w, calculations - 2001 - low stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.81	1.81	5.39	4.06	2.06	1.50
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.63			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.35			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.40			
G=D+F	total annual effective precipitation (inches)			6.48			
H=B-G	annual consumptive use of irrigation water (inches)			9.15			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,200.58**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.93	2.04	4.81	3.30	2.40	1.74
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.22			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.35			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.40			
G=D+F	total annual effective precipitation (inches)			6.48			
H=B-G	annual consumptive use of irrigation water (inches)			8.74			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**35,292.12**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.93	1.89	3.49	3.53	2.07	1.51
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.42			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.35			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.80			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.40			
G=D+F	total annual effective precipitation (inches)			6.48			
H=B-G	annual consumptive use of irrigation water (inches)			6.94			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**23,621.45**			
	Total Upper Laramie consumptive use of irrigation water during 2001 (acre-feet)			**61,114**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.170 Consumptive use of irrigation water, CU_w, calculations - 1987 - low stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.11	2.06	5.96	4.54	2.22	1.71
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.60			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.33			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.91			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.44			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.22			
G=D+F	total annual effective precipitation (inches)			10.13			
H=B-G	annual consumptive use of irrigation water (inches)			7.47			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,796.54**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.45	2.63	6.04	4.18	2.93	2.25
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.48			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.33			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.91			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.44			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.22			
G=D+F	total annual effective precipitation (inches)			10.13			
H=B-G	annual consumptive use of irrigation water (inches)			9.35			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**37,755.30**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.45	2.44	4.38	4.48	2.53	1.94
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.22			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.33			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.91			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.44			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.22			
G=D+F	total annual effective precipitation (inches)			10.13			
H=B-G	annual consumptive use of irrigation water (inches)			7.09			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**24,132.00**			
	Total Upper Laramie consumptive use of irrigation water during 1987 (acre-feet)			**63,684**			

Notes:
(1) See Table 2.1.4.70.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.171 Consumptive use of irrigation water, CU_w, calculations - 1981 - low stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.25	1.91	6.80	5.03	2.52	1.93
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.44			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.33			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.86			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.27			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.64			
G=D+F	total annual effective precipitation (inches)			10.50			
H=B-G	annual consumptive use of irrigation water (inches)			8.94			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,150.07**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.25	1.85	5.23	3.52	2.53	1.93
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.31			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.33			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.86			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.27			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.64			
G=D+F	total annual effective precipitation (inches)			10.50			
H=B-G	annual consumptive use of irrigation water (inches)			5.81			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**23,460.78**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.25	1.72	3.79	3.77	2.17	1.67
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.37			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.33			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.86			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.27			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.64			
G=D+F	total annual effective precipitation (inches)			10.50			
H=B-G	annual consumptive use of irrigation water (inches)			3.87			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,172.19**			
	Total Upper Laramie consumptive use of irrigation water during 1981 (acre-feet)			**38,783**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.172 Consumptive use of irrigation water, CU_w, calculations - 1977 - low stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	2.08	6.16	4.37	2.11	1.65
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.34			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.18			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.84			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.42			
G=D+F	total annual effective precipitation (inches)			9.60			
H=B-G	annual consumptive use of irrigation water (inches)			7.74			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,861.47**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	2.21	5.20	3.35	2.32	1.82
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.95			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.18			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.84			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.42			
G=D+F	total annual effective precipitation (inches)			9.60			
H=B-G	annual consumptive use of irrigation water (inches)			6.35			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**25,641.30**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	2.05	3.77	3.59	2.00	1.57
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.03			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.18			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.84			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.42			
G=D+F	total annual effective precipitation (inches)			9.60			
H=B-G	annual consumptive use of irrigation water (inches)			4.43			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**15,078.24**			
	Total Upper Laramie consumptive use of irrigation water during 1977 (acre-feet)			**42,581**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.173 Consumptive use of irrigation water, CU_w, calculations - 1989 - low stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.01	2.09	5.65	4.72	2.28	1.64
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.39			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.52			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.19			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.12			
G=D+F	total annual effective precipitation (inches)			8.31			
H=B-G	annual consumptive use of irrigation water (inches)			9.08			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,183.74**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.76	1.53	3.29	2.50	1.73	1.24
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			11.05			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.52			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.19			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.12			
G=D+F	total annual effective precipitation (inches)			8.31			
H=B-G	annual consumptive use of irrigation water (inches)			2.74			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,064.12**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.76	1.42	2.38	2.68	1.50	1.07
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			9.81			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.52			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.19			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.12			
G=D+F	total annual effective precipitation (inches)			8.31			
H=B-G	annual consumptive use of irrigation water (inches)			1.50			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,105.50**			
	Total Upper Laramie consumptive use of irrigation water during 1989 (acre-feet)			**18,353**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.174 Consumptive use of irrigation water, CU_W, calculations - 1997 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.72	1.93	5.44	4.38	2.16	1.48
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.11			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.11			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.06			
G=D+F	total annual effective precipitation (inches)			12.14			
H=B-G	annual consumptive use of irrigation water (inches)			3.97			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**954.79**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.91	2.38	5.31	3.90	2.75	1.88
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.13			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.11			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.06			
G=D+F	total annual effective precipitation (inches)			12.14			
H=B-G	annual consumptive use of irrigation water (inches)			4.99			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**20,149.62**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.91	2.21	3.85	4.18	2.37	1.63
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.15			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.11			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.06			
G=D+F	total annual effective precipitation (inches)			12.14			
H=B-G	annual consumptive use of irrigation water (inches)			3.01			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,245.04**			
	Total Upper Laramie consumptive use of irrigation water during 1997 (acre-feet)			**31,349**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.175 Consumptive use of irrigation water, CU_W, calculations - 1973 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.78	2.22	6.63	4.80	2.71	1.67
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.81			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.13			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.62			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.23			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			12.62			
H=B-G	annual consumptive use of irrigation water (inches)			6.19			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,488.70**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.83	2.32	5.49	3.61	2.92	1.80
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.97			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.13			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.62			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.23			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			12.62			
H=B-G	annual consumptive use of irrigation water (inches)			4.35			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,565.30**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.83	2.16	3.98	3.86	2.52	1.55
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.90			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.13			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.62			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.23			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			12.62			
H=B-G	annual consumptive use of irrigation water (inches)			2.28			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,760.36**			
	Total Upper Laramie consumptive use of irrigation water during 1973 (acre-feet)			**26,814**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.176 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	2.13	6.60	5.30	2.48	2.04
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.61			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.82			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.53			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.38			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			8.53			
H=B-G	annual consumptive use of irrigation water (inches)			11.08			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,664.74**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.23	2.41	5.93	4.33	2.90	2.39
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.19			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.82			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.53			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.38			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			8.53			
H=B-G	annual consumptive use of irrigation water (inches)			10.66			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**43,045.08**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.23	2.24	4.30	4.64	2.50	2.06
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.97			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.82			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.53			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.38			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			8.53			
H=B-G	annual consumptive use of irrigation water (inches)			8.44			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**28,726.95**			
	Total Upper Laramie consumptive use of irrigation water during 1979 (acre-feet)			**74,437**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.177 Consumptive use of irrigation water, CU_W, calculations - 1996 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.86	1.87	5.68	4.21	2.19	1.42
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.23			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.79			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.45			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.93			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.47			
G=D+F	total annual effective precipitation (inches)			8.92			
H=B-G	annual consumptive use of irrigation water (inches)			7.31			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,758.06**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.19	2.55	6.16	4.15	3.09	2.00
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.14			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.79			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.45			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.93			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.47			
G=D+F	total annual effective precipitation (inches)			8.92			
H=B-G	annual consumptive use of irrigation water (inches)			10.22			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**41,268.36**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.19	2.37	4.46	4.45	2.66	1.72
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.85			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.79			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.45			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.93			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.47			
G=D+F	total annual effective precipitation (inches)			8.92			
H=B-G	annual consumptive use of irrigation water (inches)			7.93			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**26,991.08**			
	Total Upper Laramie consumptive use of irrigation water during 1996 (acre-feet)			**70,018**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.178 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.02	2.07	6.10	5.03	2.64	1.63
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.49			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.00			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.60			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.66			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.33			
G=D+F	total annual effective precipitation (inches)			9.93			
H=B-G	annual consumptive use of irrigation water (inches)			8.56			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,058.68**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	2.29	5.35	4.01	3.02	1.86
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.68			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.00			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.60			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.66			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.33			
G=D+F	total annual effective precipitation (inches)			9.93			
H=B-G	annual consumptive use of irrigation water (inches)			7.75			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**31,294.50**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	2.13	3.88	4.30	2.61	1.60
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.67			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.00			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.60			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.66			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.33			
G=D+F	total annual effective precipitation (inches)			9.93			
H=B-G	annual consumptive use of irrigation water (inches)			5.74			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**19,537.05**			
	Total Upper Laramie consumptive use of irrigation water during 1982 (acre-feet)			**52,890**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.179 Consumptive use of irrigation water, CU_W, calculations - 1995 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.63	1.16	3.87	3.12	1.91	1.10
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			11.79			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.99			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.39			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.81			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.41			
G=D+F	total annual effective precipitation (inches)			12.80			
H=B-G	annual consumptive use of irrigation water (inches)			0.00			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**0.00**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.95	1.71	4.50	3.31	2.89	1.67
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.03			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.99			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.39			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.81			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.41			
G=D+F	total annual effective precipitation (inches)			12.80			
H=B-G	annual consumptive use of irrigation water (inches)			2.23			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,004.74**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.95	1.59	3.26	3.53	2.49	1.44
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.26			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.99			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.39			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.81			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.41			
G=D+F	total annual effective precipitation (inches)			12.80			
H=B-G	annual consumptive use of irrigation water (inches)			0.46			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,565.69**			
	Total Upper Laramie consumptive use of irrigation water during 1995 (acre-feet)			**10,570**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.180 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.09	2.06	6.76	5.41	2.66	1.95
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.93			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.39			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.12			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.96			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.48			
G=D+F	total annual effective precipitation (inches)			7.60			
H=B-G	annual consumptive use of irrigation water (inches)			12.33			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,965.37**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	2.24	5.83	4.24	2.98	2.19
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.69			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.39			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.12			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.96			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.48			
G=D+F	total annual effective precipitation (inches)			7.60			
H=B-G	annual consumptive use of irrigation water (inches)			11.09			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**44,781.42**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	2.08	4.22	4.55	2.57	1.89
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.52			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.39			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.12			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.96			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.48			
G=D+F	total annual effective precipitation (inches)			7.60			
H=B-G	annual consumptive use of irrigation water (inches)			8.92			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**30,360.71**			
	Total Upper Laramie consumptive use of irrigation water during 1978 (acre-feet)			**78,108**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.181 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - Upper Laramie subbasin

winter wheat	Not cultivated						
spring wheat	Not cultivated						
barley	Not cultivated						
oats	Not cultivated						
dry beans	Not cultivated						
sugar beets	Not cultivated						
corn	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.98	2.15	7.29	5.32	2.68	1.90
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.32			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.77			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.48			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.66			
G=D+F	total annual effective precipitation (inches)			8.14			
H=B-G	annual consumptive use of irrigation water (inches)			12.18			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,929.29**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.89	1.90	5.12	3.39	2.45	1.74
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.49			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.77			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.48			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.66			
G=D+F	total annual effective precipitation (inches)			8.14			
H=B-G	annual consumptive use of irrigation water (inches)			7.35			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**29,679.30**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.89	1.77	3.71	3.64	2.11	1.50
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.62			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.77			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.48			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.66			
G=D+F	total annual effective precipitation (inches)			8.14			
H=B-G	annual consumptive use of irrigation water (inches)			5.48			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**18,652.09**			
	Total Upper Laramie consumptive use of irrigation water during 1980 (acre-feet)			**51,261**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.182 Consumptive use of irrigation water, CU_W, calculations - 1974 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.96	2.46	6.90	5.14	2.65	1.75
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.86			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.80			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.51			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.99			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.50			
G=D+F	total annual effective precipitation (inches)			8.01			
H=B-G	annual consumptive use of irrigation water (inches)			11.85			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,849.93**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	2.64	5.86	3.97	2.93	1.93
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.38			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.80			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.51			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.99			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.50			
G=D+F	total annual effective precipitation (inches)			8.01			
H=B-G	annual consumptive use of irrigation water (inches)			10.37			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**41,874.06**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	2.45	4.25	4.25	2.53	1.66
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.19			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.80			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.51			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.99			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.50			
G=D+F	total annual effective precipitation (inches)			8.01			
H=B-G	annual consumptive use of irrigation water (inches)			8.18			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**27,841.99**			
	Total Upper Laramie consumptive use of irrigation water during 1974 (acre-feet)			**72,566**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.183 Consumptive use of irrigation water, CU_W, calculations - 1999 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.79	1.91	5.69	4.52	2.26	1.55
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.72			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.75			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.31			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.29			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.15			
G=D+F	total annual effective precipitation (inches)			10.46			
H=B-G	annual consumptive use of irrigation water (inches)			6.26			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,505.53**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.01	2.39	5.64	4.08	2.93	2.00
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.05			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.75			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.31			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.29			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.15			
G=D+F	total annual effective precipitation (inches)			10.46			
H=B-G	annual consumptive use of irrigation water (inches)			7.59			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**30,648.42**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.01	2.22	4.09	4.37	2.53	1.72
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.94			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.75			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.31			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.29			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.15			
G=D+F	total annual effective precipitation (inches)			10.46			
H=B-G	annual consumptive use of irrigation water (inches)			5.48			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**18,652.09**			
	Total Upper Laramie consumptive use of irrigation water during 1999 (acre-feet)			**50,806**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.184 Consumptive use of irrigation water, CU_W, calculations - 1993 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	2.34	5.95	4.86	2.48	1.72
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.34			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.63			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.20			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.88			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.44			
G=D+F	total annual effective precipitation (inches)			10.64			
H=B-G	annual consumptive use of irrigation water (inches)			7.70			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,851.85**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	2.65	5.35	3.97	2.90	2.01
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.03			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.63			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.20			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.88			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.44			
G=D+F	total annual effective precipitation (inches)			10.64			
H=B-G	annual consumptive use of irrigation water (inches)			7.39			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**29,840.82**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	2.47	3.87	4.25	2.50	1.73
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.97			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.63			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.20			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.88			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.44			
G=D+F	total annual effective precipitation (inches)			10.64			
H=B-G	annual consumptive use of irrigation water (inches)			5.33			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**18,141.54**			
	Total Upper Laramie consumptive use of irrigation water during 1993 (acre-feet)			**49,834**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.185 Consumptive use of irrigation water, CU_W, calculations - 1985 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
Not cultivated							
spring wheat							
Not cultivated							
barley							
Not cultivated							
oats							
Not cultivated							
dry beans							
Not cultivated							
sugar beets							
Not cultivated							
corn							
Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.63	1.31	3.51	2.68	1.52	0.88
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	10.53					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	8.03					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	7.63					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	2.83					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.42					
G=D+F	total annual effective precipitation (inches)	9.05					
H=B-G	annual consumptive use of irrigation water (inches)	1.48					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	2,886					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**355.94**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.19	2.43	5.14	3.56	2.90	1.68
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	16.90					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	8.03					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	7.63					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	2.83					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.42					
G=D+F	total annual effective precipitation (inches)	9.05					
H=B-G	annual consumptive use of irrigation water (inches)	7.85					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	48,456					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**31,698.30**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.19	2.25	3.73	3.82	2.50	1.46
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	14.95					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	8.03					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	7.63					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	2.83					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.42					
G=D+F	total annual effective precipitation (inches)	9.05					
H=B-G	annual consumptive use of irrigation water (inches)	5.90					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	40,844					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**20,081.63**					
	Total Upper Laramie consumptive use of irrigation water during 1985 (acre-feet)	**52,136**					
Notes:							
(1) See Table 2.1.4.73.							
(2) See Appendix 2.1.4.E.							
(3) See Table 2.1.4.52.							

Table 2.1.4.186 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
Not cultivated							
spring wheat							
Not cultivated							
barley							
Not cultivated							
oats							
Not cultivated							
dry beans							
Not cultivated							
sugar beets							
Not cultivated							
corn							
Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.17	2.30	7.18	5.31	2.75	1.79
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.50					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	5.57					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	5.29					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	6.00					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	3.00					
G=D+F	total annual effective precipitation (inches)	8.29					
H=B-G	annual consumptive use of irrigation water (inches)	12.21					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	2,886					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,936.51**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.39	2.68	6.62	4.45	3.30	2.15
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.59					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	5.57					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	5.29					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	6.00					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	3.00					
G=D+F	total annual effective precipitation (inches)	8.29					
H=B-G	annual consumptive use of irrigation water (inches)	12.30					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	48,456					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**49,667.40**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.39	2.49	4.80	4.77	2.85	1.86
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.16					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	5.57					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	5.29					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	6.00					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	3.00					
G=D+F	total annual effective precipitation (inches)	8.29					
H=B-G	annual consumptive use of irrigation water (inches)	9.87					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	40,844					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**33,594.19**					
	Total Upper Laramie consumptive use of irrigation water during 1988 (acre-feet)	**86,198**					
Notes:							
(1) See Table 2.1.4.73.							
(2) See Appendix 2.1.4.E.							
(3) See Table 2.1.4.52.							

Table 2.1.4.187 Consumptive use of irrigation water, CU_W, calculations - 1975 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
Not cultivated							
spring wheat							
Not cultivated							
barley							
Not cultivated							
oats							
Not cultivated							
dry beans							
Not cultivated							
sugar beets							
Not cultivated							
corn							
Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.83	1.84	5.66	4.66	2.48	1.68
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.15					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	7.13					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.77					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	2.86					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.43					
G=D+F	total annual effective precipitation (inches)	8.20					
H=B-G	annual consumptive use of irrigation water (inches)	8.95					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	2,886					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,152.48**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.84	1.80	4.42	3.31	2.52	1.70
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	14.59					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	7.13					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.77					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	2.86					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.43					
G=D+F	total annual effective precipitation (inches)	8.20					
H=B-G	annual consumptive use of irrigation water (inches)	6.39					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	48,456					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**25,802.82**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.84	1.68	3.20	3.54	2.17	1.47
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	12.90					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	7.13					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.77					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	2.86					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.43					
G=D+F	total annual effective precipitation (inches)	8.20					
H=B-G	annual consumptive use of irrigation water (inches)	4.70					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	40,844					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**15,997.23**					
	Total Upper Laramie consumptive use of irrigation water during 1975 (acre-feet)	**43,953**					
Notes:							
(1) See Table 2.1.4.73.							
(2) See Appendix 2.1.4.E.							
(3) See Table 2.1.4.52.							

Table 2.1.4.188 Consumptive use of irrigation water, CU_W, calculations - 1998 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
	Not cultivated						
spring wheat							
	Not cultivated						
barley							
	Not cultivated						
oats							
	Not cultivated						
dry beans							
	Not cultivated						
sugar beets							
	Not cultivated						
corn							
	Not cultivated						
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.93	2.18	5.02	4.34	2.37	1.74
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.58			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.74			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.20			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.94			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.97			
G=D+F	total annual effective precipitation (inches)			11.17			
H=B-G	annual consumptive use of irrigation water (inches)			5.41			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			2,886			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,301.11**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	2.41	4.38	3.45	2.69	1.97
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.95			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.74			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.20			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.94			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.97			
G=D+F	total annual effective precipitation (inches)			11.17			
H=B-G	annual consumptive use of irrigation water (inches)			4.78			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			48,456			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**19,301.64**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	2.24	3.18	3.69	2.32	1.71
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.19			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.74			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.20			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.94			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.97			
G=D+F	total annual effective precipitation (inches)			11.17			
H=B-G	annual consumptive use of irrigation water (inches)			3.02			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			40,844			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,279.07**			
	Total Upper Laramie consumptive use of irrigation water during 1998 (acre-feet)			**30,882**			

Notes:
(1) See Table 2.1.4.73.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.189 Consumptive use of irrigation water, CU_W, calculations - 1972 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
Not cultivated							
spring wheat							
Not cultivated							
barley							
Not cultivated							
oats							
Not cultivated							
dry beans							
Not cultivated							
sugar beets							
Not cultivated							
corn							
Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	2.25	6.44	4.91	2.56	1.73
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.96					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	7.36					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.99					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	1.24					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	0.62					
G=D+F	total annual effective precipitation (inches)	7.61					
H=B-G	annual consumptive use of irrigation water (inches)	11.35					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	2,886					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,729.68**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.30	2.67	6.03	4.18	3.12	2.12
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.42					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	7.36					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.99					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	1.24					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	0.62					
G=D+F	total annual effective precipitation (inches)	7.61					
H=B-G	annual consumptive use of irrigation water (inches)	11.81					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	48,456					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**47,688.78**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.30	2.48	4.37	4.48	2.69	1.83
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.15					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	7.36					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.99					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	1.24					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	0.62					
G=D+F	total annual effective precipitation (inches)	7.61					
H=B-G	annual consumptive use of irrigation water (inches)	9.54					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	40,844					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**32,470.98**					
	Total Upper Laramie consumptive use of irrigation water during 1972 (acre-feet)	**82,889**					
Notes:							
(1) See Table 2.1.4.73.							
(2) See Appendix 2.1.4.E.							
(3) See Table 2.1.4.52.							

Table 2.1.4.190 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
Not cultivated							
spring wheat							
Not cultivated							
barley							
Not cultivated							
oats							
Not cultivated							
dry beans							
Not cultivated							
sugar beets							
Not cultivated							
corn							
Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.02	2.22	6.36	5.16	2.56	1.80
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.12					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	5.37					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	5.10					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.29					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.65					
G=D+F	total annual effective precipitation (inches)	6.75					
H=B-G	annual consumptive use of irrigation water (inches)	12.37					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	2,886					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,974.99**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	2.47	5.61	4.14	2.94	2.07
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.38					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	5.37					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	5.10					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.29					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.65					
G=D+F	total annual effective precipitation (inches)	6.75					
H=B-G	annual consumptive use of irrigation water (inches)	11.63					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	48,456					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**46,961.94**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	2.30	4.06	4.44	2.53	1.79
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	16.27					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	5.37					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	5.10					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.29					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.65					
G=D+F	total annual effective precipitation (inches)	6.75					
H=B-G	annual consumptive use of irrigation water (inches)	9.52					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	40,844					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**32,402.91**					
	Total Upper Laramie consumptive use of irrigation water during 1976 (acre-feet)	**82,340**					

Notes:

(1) See Table 2.1.4.73.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.191 Consumptive use of irrigation water, CU_W, calculations - 1990 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
Not cultivated							
spring wheat							
Not cultivated							
barley							
Not cultivated							
oats							
Not cultivated							
dry beans							
Not cultivated							
sugar beets							
Not cultivated							
corn							
Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.96	1.95	6.22	4.06	2.28	1.64
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.11					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	9.73					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	9.24					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.96					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.48					
G=D+F	total annual effective precipitation (inches)	11.72					
H=B-G	annual consumptive use of irrigation water (inches)	5.39					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	2,886					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,296.30**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.13	2.23	5.65	3.35	2.70	1.93
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	16.99					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	9.73					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	9.24					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.96					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.48					
G=D+F	total annual effective precipitation (inches)	11.72					
H=B-G	annual consumptive use of irrigation water (inches)	5.27					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	48,456					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**21,280.26**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.13	2.07	4.09	3.59	2.32	1.66
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	14.86					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	9.73					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	9.24					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.96					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.48					
G=D+F	total annual effective precipitation (inches)	11.72					
H=B-G	annual consumptive use of irrigation water (inches)	3.14					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	40,844					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**10,687.51**					
	Total Upper Laramie consumptive use of irrigation water during 1990 (acre-feet)	**33,264**					
Notes:							
(1) See Table 2.1.4.73.							
(2) See Appendix 2.1.4.E.							
(3) See Table 2.1.4.52.							

Table 2.1.4.192 Consumptive use of irrigation water, CU_W, calculations - 2000 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
Not cultivated							
spring wheat							
Not cultivated							
barley							
Not cultivated							
oats							
Not cultivated							
dry beans							
Not cultivated							
sugar beets							
Not cultivated							
corn							
Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	2.02	5.45	4.36	2.26	1.54
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	16.60					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	9.37					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	8.90					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.03					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.52					
G=D+F	total annual effective precipitation (inches)	10.42					
H=B-G	annual consumptive use of irrigation water (inches)	6.18					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	2,886					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,486.29**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.39	2.83	6.05	4.40	3.27	2.22
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.16					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	9.37					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	8.90					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.03					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.52					
G=D+F	total annual effective precipitation (inches)	10.42					
H=B-G	annual consumptive use of irrigation water (inches)	9.74					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	48,456					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**39,330.12**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.39	2.63	4.39	4.72	2.82	1.91
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.86					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	9.37					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	8.90					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.03					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.52					
G=D+F	total annual effective precipitation (inches)	10.42					
H=B-G	annual consumptive use of irrigation water (inches)	7.44					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	40,844					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**25,323.28**					
	Total Upper Laramie consumptive use of irrigation water during 2000 (acre-feet)	**66,140**					
Notes:							
(1) See Table 2.1.4.73.							
(2) See Appendix 2.1.4.E.							
(3) See Table 2.1.4.52.							

Table 2.1.4.193 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
Not cultivated							
spring wheat							
Not cultivated							
barley							
Not cultivated							
oats							
Not cultivated							
dry beans							
Not cultivated							
sugar beets							
Not cultivated							
corn							
Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.77	1.81	5.07	3.76	1.98	1.42
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	14.81					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	12.54					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	11.91					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.57					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.29					
G=D+F	total annual effective precipitation (inches)	14.20					
H=B-G	annual consumptive use of irrigation water (inches)	0.61					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	2,886					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**146.71**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.16	2.66	5.92	3.99	3.01	2.15
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.89					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	12.54					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	11.91					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.57					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.29					
G=D+F	total annual effective precipitation (inches)	14.20					
H=B-G	annual consumptive use of irrigation water (inches)	4.69					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	48,456					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**18,938.22**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.16	2.47	4.29	4.28	2.59	1.86
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	16.65					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	12.54					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	11.91					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.57					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.29					
G=D+F	total annual effective precipitation (inches)	14.20					
H=B-G	annual consumptive use of irrigation water (inches)	2.45					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	40,844					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**8,338.98**					
Total Upper Laramie consumptive use of irrigation water during 1991 (acre-feet)		**27,424**					
Notes:							
(1) See Table 2.1.4.73.							
(2) See Appendix 2.1.4.E.							
(3) See Table 2.1.4.52.							

Table 2.1.4.194 Consumptive use of irrigation water, CU_W, calculations - 1994 - normal or average stream flow year - Upper Laramie subbasin

winter wheat							
Not cultivated							
spring wheat							
Not cultivated							
barley							
Not cultivated							
oats							
Not cultivated							
dry beans							
Not cultivated							
sugar beets							
Not cultivated							
corn							
Not cultivated							
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.98	2.33	6.71	4.74	2.51	1.80
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.07					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	3.47					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	3.30					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	6.39					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	3.00					
G=D+F	total annual effective precipitation (inches)	6.30					
H=B-G	annual consumptive use of irrigation water (inches)	12.77					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	2,886					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,071.19**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	2.62	5.99	3.84	2.93	2.08
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.58					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	3.47					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	3.30					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	6.39					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	3.00					
G=D+F	total annual effective precipitation (inches)	6.30					
H=B-G	annual consumptive use of irrigation water (inches)	12.28					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	48,456					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**49,586.64**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	2.44	4.34	4.11	2.52	1.79
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	16.32					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	3.47					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	3.30					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	6.39					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	3.00					
G=D+F	total annual effective precipitation (inches)	6.30					
H=B-G	annual consumptive use of irrigation water (inches)	10.02					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	40,844					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**34,104.74**					
	Total Upper Laramie consumptive use of irrigation water during 1994 (acre-feet)	**86,763**					
Notes:							
(1) See Table 2.1.4.73.							
(2) See Appendix 2.1.4.E.							
(3) See Table 2.1.4.52.							

Table 2.1.4.195 Summary - consumptive use of irrigation water - Upper Laramie subbasin

No.	Year	Consumptive use of irrigation water (acre-feet)		
1	1983	36,398	**High stream flow years:**	
2	1986	56,719	**Average:**	**43,901**
3	1984	38,586	**Maximum:**	**56,719**
4	1997	31,349	**Minimum:**	**36,398**
5	1973	26,814		
6	1979	74,437		
7	1996	70,018		
8	1982	52,890		
9	1995	10,570		
10	1978	78,108		
11	1980	51,261		
12	1974	72,566		
13	1999	50,806		
14	1993	49,834		
15	1985	52,136		
16	1988	86,198		
17	1975	43,953		
18	1998	30,882		
19	1972	82,889		
20	1976	82,340	**Normal or average stream flow**	
21	1990	33,264	**years:**	
22	2000	66,140	**Average:**	**55,269**
23	1991	27,424	**Maximum:**	**86,763**
24	1994	86,763	**Minimum:**	**10,570**
25	1992	37,661		
26	2001	61,114		
27	1987	63,684	**Low stream flow years:**	
28	1981	38,783	**Average:**	**43,696**
29	1977	42,581	**Maximum:**	**63,684**
30	1989	18,353	**Minimum:**	**18,353**
Overall average:		**51,817**		
Overall maximum:		**86,763**		
Overall minimum:		**10,570**		
		designates high flow years		
		designates low flow years		

Years which are neither shaded or outlined are normal or average stream flow years

See Table 3.1.1.5. in Technical Memorandum 3.1., Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year Determination

2.1.4.9.5 Consumptive Use of Irrigation Water – Lower Laramie Subbasin

Table 2.1.4.196 through Table 2.1.4.217 contain unit and annual consumptive use calculation parameters and results for all crops under consideration during each high, low, and normal or average stream flow year in the Above Pathfinder subbasin. Annual consumptive use values for the Lower Laramie subbasin are summarized in Table 2.1.4.218.

Table 2.1.4.196 Consumptive use of irrigation water, CU_W, calculations - 1983 - high stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.78	5.38	7.15	5.31	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.21	136.65	181.61	134.87	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.62			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.44	2.30	3.44	1.30	1.66	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.58	58.42	87.38	33.02	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.57	44.24	69.77	26.06	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.93	1.74	2.75	1.03	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.45			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.90			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.95			
K=H+J	total annual effective precipitation (inches)			8.40			
L=C-K	annual consumptive use of irrigation water (inches)			11.22			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**898.54**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.45	4.27	7.34	5.92	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.83	108.46	186.44	150.37	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.98			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.44	2.30	3.44	1.30	1.66	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.58	58.42	87.38	33.02	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.14	41.58	70.52	26.97	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.91	1.64	2.78	1.06	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.39			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.90			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.95			
K=H+J	total annual effective precipitation (inches)			8.34			
L=C-K	annual consumptive use of irrigation water (inches)			10.64			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**23.05**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.33	4.09	6.40	5.92	2.13	1.12
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.78	103.89	162.56	150.37	54.10	28.45
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.99			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.44	2.30	3.44	1.30	1.66	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.58	58.42	87.38	33.02	42.16	6.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.98	41.17	66.91	26.97	27.42	2.98
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.90	1.62	2.63	1.06	1.08	0.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.41			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.90			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.95			
K=H+J	total annual effective precipitation (inches)			9.36			
L=C-K	annual consumptive use of irrigation water (inches)			11.63			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,287.23**			

Table 2.1.4.196 Consumptive use of irrigation water, CU_W, calculations - 1983 - high stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.36	4.18	6.55	6.06	2.18	1.15
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.54	106.17	166.37	153.92	55.37	29.21
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.48			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.44	2.30	3.44	1.30	1.66	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.58	58.42	87.38	33.02	42.16	6.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.02	41.38	67.48	27.18	27.50	2.99
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.91	1.63	2.66	1.07	1.08	0.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.47			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.90			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.95			
K=H+J	total annual effective precipitation (inches)			9.42			
L=C-K	annual consumptive use of irrigation water (inches)			12.06			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,535.64**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.81	1.19	5.45	8.98	4.15	1.28
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.57	30.23	138.43	228.09	105.41	32.51
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.86			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.44	2.30	3.44	1.30	1.66	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.58	58.42	87.38	33.02	42.16	6.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.32	35.01	63.45	31.99	30.70	3.01
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.88	1.38	2.50	1.26	1.21	0.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.90			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.95			
K=H+J	total annual effective precipitation (inches)			9.30			
L=C-K	annual consumptive use of irrigation water (inches)			12.56			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,206.55**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	1.73	3.79	6.29	5.96	3.33
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.67	43.94	96.27	159.77	151.38	84.58
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.15			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.44	2.30	3.44	1.30	1.66	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.58	58.42	87.38	33.02	42.16	6.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.63	36.08	57.84	27.53	33.97	3.38
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.89	1.42	2.28	1.08	1.34	0.13
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.14			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.90			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.95			
K=H+J	total annual effective precipitation (inches)			9.09			
L=C-K	annual consumptive use of irrigation water (inches)			13.06			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,409.93**			

Table 2.1.4.196 Consumptive use of irrigation water, CU_W, calculations - 1983 - high stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.79	1.86	6.91	9.29	7.08	2.09
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.07	47.24	175.51	235.97	179.83	53.09
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.02			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.44	2.30	3.44	1.30	1.66	0.25
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.58	58.42	87.38	33.02	42.16	6.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.30	36.35	68.85	32.55	36.16	3.15
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.88	1.43	2.71	1.28	1.42	0.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.84			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.90			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.95			
K=H+J	total annual effective precipitation (inches)			9.79			
L=C-K	annual consumptive use of irrigation water (inches)			18.23			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,214.88**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.19	4.73	5.24	7.65	3.85	2.47
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.13			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.39			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.87			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.90			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.95			
G=D+F	total annual effective precipitation (inches)			11.82			
H=B-G	annual consumptive use of irrigation water (inches)			14.31			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**30,687.80**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.65	3.40	6.49	8.41	4.99	3.87
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.81			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.39			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.87			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.90			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.95			
G=D+F	total annual effective precipitation (inches)			11.82			
H=B-G	annual consumptive use of irrigation water (inches)			16.99			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**32,816.19**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	2.24	4.55	5.94	5.62	4.02
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.36			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.39			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.87			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.90			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.95			
G=D+F	total annual effective precipitation (inches)			11.82			
H=B-G	annual consumptive use of irrigation water (inches)			11.54			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,115.74**			
	Total Lower Laramie consumptive use of irrigation water during 1983 (acre-feet)			**104,196**			

Notes:

(1) See Table 2.1.4.78.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.197 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.69	6.27	7.60	5.04	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.93	159.26	193.04	128.02	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.60			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.99	0.69	0.42	5.92	1.16	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.95	17.53	10.67	150.37	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	45.47	14.63	8.96	99.19	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.79	0.58	0.35	3.91	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.63			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.30			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			8.78			
L=C-K	annual consumptive use of irrigation water (inches)			11.82			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**946.59**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.50	5.41	8.50	6.12	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.10	137.41	215.90	155.45	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.53			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.99	0.69	0.42	5.92	1.16	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.95	17.53	10.67	150.37	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	44.99	13.94	9.42	105.36	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.77	0.55	0.37	4.15	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.84			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.30			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			8.99			
L=C-K	annual consumptive use of irrigation water (inches)			12.54			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**27.17**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.46	5.51	7.87	6.51	2.08	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.08	139.95	199.90	165.35	52.83	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.44			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.99	0.69	0.42	5.92	1.16	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.95	17.53	10.67	150.37	29.46	31.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	44.89	14.02	9.10	107.68	19.51	19.44
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.77	0.55	0.36	4.24	0.77	0.77
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.46			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.30			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			10.61			
L=C-K	annual consumptive use of irrigation water (inches)			13.83			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,719.90**			

Table 2.1.4.197 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.27	4.81	6.88	5.68	1.82	0.88
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.26	122.17	174.75	144.27	46.23	22.35
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.34			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.99	0.69	0.42	5.92	1.16	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.95	17.53	10.67	150.37	29.46	31.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	44.42	13.48	8.61	102.80	19.23	19.30
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.75	0.53	0.34	4.05	0.76	0.76
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.19			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.30			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			10.34			
L=C-K	annual consumptive use of irrigation water (inches)			11.00			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,400.67**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	1.54	6.39	9.40	3.87	1.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.59	39.12	162.31	238.76	98.30	27.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.15			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.99	0.69	0.42	5.92	1.16	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.95	17.53	10.67	150.37	29.46	31.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	43.39	11.23	8.38	126.54	21.56	19.54
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.71	0.44	0.33	4.98	0.85	0.77
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.08			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.30			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			11.23			
L=C-K	annual consumptive use of irrigation water (inches)			11.92			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,992.21**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.29	2.61	5.21	7.73	6.51	3.33
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.77	66.29	132.33	196.34	165.35	84.58
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.68			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.99	0.69	0.42	5.92	1.16	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.95	17.53	10.67	150.37	29.46	31.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	44.47	11.92	7.84	115.27	24.99	22.14
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.75	0.47	0.31	4.54	0.98	0.87
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.92			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.30			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			11.07			
L=C-K	annual consumptive use of irrigation water (inches)			15.61			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,270.98**			

Table 2.1.4.197 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.78	2.24	7.61	9.14	6.20	1.68
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	19.81	56.90	193.29	232.16	157.48	42.67
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.65			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.99	0.69	0.42	5.92	1.16	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	75.95	17.53	10.67	150.37	29.46	31.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	43.22	11.68	8.97	124.72	24.56	20.19
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.70	0.46	0.35	4.91	0.97	0.79
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.18			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.30			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			11.33			
L=C-K	annual consumptive use of irrigation water (inches)			16.32			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,144.64**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.37	6.29	6.36	8.29	3.72	2.18
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.21			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.41			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.79			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.30			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
G=D+F	total annual effective precipitation (inches)			13.94			
H=B-G	annual consumptive use of irrigation water (inches)			15.27			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**32,746.52**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.68	4.26	7.41	8.57	4.53	3.21
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.66			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.41			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.79			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.30			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.15			
G=D+F	total annual effective precipitation (inches)			13.94			
H=B-G	annual consumptive use of irrigation water (inches)			15.72			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**30,363.18**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.01	2.80	5.19	6.06	5.10	3.33
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.49			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.41			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.79			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.30			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.15			
G=D+F	total annual effective precipitation (inches)			13.94			
H=B-G	annual consumptive use of irrigation water (inches)			9.55			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,164.24**			
	Total Lower Laramie consumptive use of irrigation water during 1984 (acre-feet)			**100,776**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.198 Consumptive use of irrigation water, CU_W, calculations - 1990 - low stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.22	5.79	8.30	4.70	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	56.39	147.07	210.82	119.38	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.01			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.36	1.79	0.83	3.43	1.72	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	45.47	21.08	87.12	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.89	36.07	19.84	60.69	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.90	1.42	0.78	2.39	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.49			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.44			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.72			
K=H+J	total annual effective precipitation (inches)			7.21			
L=C-K	annual consumptive use of irrigation water (inches)			13.80			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,105.15**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.36	3.46	6.42	3.95	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.54	87.88	163.07	100.33	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.19			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.36	1.79	0.83	3.43	1.72	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	45.47	21.08	87.12	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.81	31.67	17.86	58.20	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.86	1.25	0.70	2.29	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.10			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.44			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.72			
K=H+J	total annual effective precipitation (inches)			6.82			
L=C-K	annual consumptive use of irrigation water (inches)			8.37			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**18.14**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.98	5.27	8.89	6.28	2.18	1.23
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.29	133.86	225.81	159.51	55.37	31.24
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.83			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.36	1.79	0.83	3.43	1.72	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	45.47	21.08	87.12	43.69	30.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.58	35.04	20.50	66.29	28.42	19.23
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.89	1.38	0.81	2.61	1.12	0.76
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.57			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.44			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.72			
K=H+J	total annual effective precipitation (inches)			9.29			
L=C-K	annual consumptive use of irrigation water (inches)			16.54			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,252.87**			

Table 2.1.4.198 Consumptive use of irrigation water, CU_W, calculations - 1990 - low stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.65	4.39	7.42	5.24	1.82	1.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.91	111.51	188.47	133.10	46.23	26.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.55			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.36	1.79	0.83	3.43	1.72	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	45.47	21.08	87.12	43.69	30.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.17	33.36	18.89	62.55	27.85	19.01
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.87	1.31	0.74	2.46	1.10	0.75
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.23			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.44			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.72			
K=H+J	total annual effective precipitation (inches)			8.95			
L=C-K	annual consumptive use of irrigation water (inches)			12.60			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,604.40**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	1.36	6.64	8.37	3.73	1.24
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.18	34.54	168.66	212.60	94.74	31.50
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.41			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.36	1.79	0.83	3.43	1.72	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	45.47	21.08	87.12	43.69	30.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.46	28.16	18.08	74.50	30.99	19.24
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.84	1.11	0.71	2.93	1.22	0.76
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.57			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.44			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.72			
K=H+J	total annual effective precipitation (inches)			9.29			
L=C-K	annual consumptive use of irrigation water (inches)			13.12			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,394.11**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.84	2.59	6.13	7.77	7.09	4.26
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.74	65.79	155.70	197.36	180.09	108.20
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.68			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.36	1.79	0.83	3.43	1.72	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	45.47	21.08	87.12	43.69	30.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.41	30.16	17.57	72.05	37.39	22.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.88	1.19	0.69	2.84	1.47	0.90
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.97			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.44			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.72			
K=H+J	total annual effective precipitation (inches)			9.69			
L=C-K	annual consumptive use of irrigation water (inches)			19.99			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,749.96**			

Table 2.1.4.198 Consumptive use of irrigation water, CU_W, calculations - 1990 - low stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	2.15	8.64	8.87	6.52	2.07
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.18	54.61	219.46	225.30	165.61	52.58
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.32			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.36	1.79	0.83	3.43	1.72	1.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	45.47	21.08	87.12	43.69	30.48
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.46	29.43	20.22	76.61	36.22	20.15
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.84	1.16	0.80	3.02	1.43	0.79
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.04			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.44			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.72			
K=H+J	total annual effective precipitation (inches)			9.76			
L=C-K	annual consumptive use of irrigation water (inches)			19.56			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,960.12**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.68	5.00	5.98	6.66	3.23	2.22
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.77			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.33			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.81			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.44			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.72			
G=D+F	total annual effective precipitation (inches)			11.53			
H=B-G	annual consumptive use of irrigation water (inches)			14.24			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**30,537.68**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.14	3.80	7.82	7.74	4.43	3.68
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.61			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.33			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.81			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.44			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.72			
G=D+F	total annual effective precipitation (inches)			11.53			
H=B-G	annual consumptive use of irrigation water (inches)			18.08			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**34,921.52**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.28	2.50	5.48	5.47	4.99	3.83
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.55			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.33			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.81			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.44			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.72			
G=D+F	total annual effective precipitation (inches)			11.53			
H=B-G	annual consumptive use of irrigation water (inches)			12.02			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,827.66**			
	Total Lower Laramie consumptive use of irrigation water during 1990 (acre-feet)			**111,372**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.199 Consumptive use of irrigation water, CU_W, calculations - 1994 - low stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.39	6.87	8.54	4.92	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	60.71	174.50	216.92	124.97	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.72			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.91	1.59	3.05	2.01	0.31	0.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	40.39	77.47	51.05	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.65	34.35	67.84	38.18	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.62	1.35	2.67	1.50	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.14			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			7.76			
L=C-K	annual consumptive use of irrigation water (inches)			14.96			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,198.05**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.69	4.71	7.58	4.76	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.93	119.63	192.53	120.90	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.74			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.91	1.59	3.05	2.01	0.31	0.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	40.39	77.47	51.05	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.05	30.44	64.30	37.84	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	1.20	2.53	1.49	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.81			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			7.43			
L=C-K	annual consumptive use of irrigation water (inches)			11.31			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**24.51**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.31	3.82	5.59	4.03	1.47	0.77
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.27	97.03	141.99	102.36	37.34	19.56
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.99			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.91	1.59	3.05	2.01	0.31	0.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	40.39	77.47	51.05	7.87	11.94
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.73	28.97	57.54	36.33	4.25	7.01
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.58	1.14	2.27	1.43	0.17	0.28
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.87			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			7.49			
L=C-K	annual consumptive use of irrigation water (inches)			9.50			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,868.33**			

Table 2.1.4.199 Consumptive use of irrigation water, CU_W, calculations - 1994 - low stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.90	5.55	8.14	5.86	2.14	1.13
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.26	140.97	206.76	148.84	54.36	28.70
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.72			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.91	1.59	3.05	2.01	0.31	0.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	40.39	77.47	51.05	7.87	11.94
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.22	31.91	66.34	40.24	4.41	7.15
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.60	1.26	2.61	1.58	0.17	0.28
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.50			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			8.12			
L=C-K	annual consumptive use of irrigation water (inches)			16.60			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,113.73**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	1.36	5.77	7.40	3.47	1.08
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.64	34.54	146.56	187.96	88.14	27.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.05			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.91	1.59	3.05	2.01	0.31	0.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	40.39	77.47	51.05	7.87	11.94
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.45	25.25	58.12	43.85	4.75	7.13
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.57	0.99	2.29	1.73	0.19	0.28
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.05			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			7.67			
L=C-K	annual consumptive use of irrigation water (inches)			12.38			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,146.27**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.94	3.03	6.21	8.01	7.70	4.29
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.28	76.96	157.73	203.45	195.58	108.97
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.18			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.91	1.59	3.05	2.01	0.31	0.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	40.39	77.47	51.05	7.87	11.94
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.26	27.72	59.56	45.37	6.01	8.53
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.60	1.09	2.34	1.79	0.24	0.34
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.40			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			8.02			
L=C-K	annual consumptive use of irrigation water (inches)			23.16			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,820.36**			

Table 2.1.4.199 Consumptive use of irrigation water, CU_W, calculations - 1994 - low stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	2.35	8.17	8.54	6.61	1.95
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.92	59.69	207.52	216.92	167.89	49.53
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.68			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.91	1.59	3.05	2.01	0.31	0.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	40.39	77.47	51.05	7.87	11.94
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.53	26.68	66.45	46.74	5.66	7.49
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.57	1.05	2.62	1.84	0.22	0.29
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.59			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			8.21			
L=C-K	annual consumptive use of irrigation water (inches)			20.47			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,470.02**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.17	6.49	6.73	7.64	3.91	2.50
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.44			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.34			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.92			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
G=D+F	total annual effective precipitation (inches)			9.54			
H=B-G	annual consumptive use of irrigation water (inches)			20.90			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**44,820.05**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.50	2.95	5.26	5.30	3.19	2.46
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.66			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.34			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.92			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.62			
G=D+F	total annual effective precipitation (inches)			9.54			
H=B-G	annual consumptive use of irrigation water (inches)			11.12			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**21,478.28**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.90	1.94	3.68	3.74	3.59	2.56
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.41			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.34			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.92			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.62			
G=D+F	total annual effective precipitation (inches)			9.54			
H=B-G	annual consumptive use of irrigation water (inches)			6.87			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,189.36**			
	Total Lower Laramie consumptive use of irrigation water during 1994 (acre-feet)			**105,129**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.200 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.57	6.43	7.35	4.47	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	65.28	163.32	186.69	113.54	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.82			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.87	1.42	2.84	1.03	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	47.50	36.07	72.14	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.96	38.90	31.75	50.75	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.04	1.53	1.25	2.00	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.82			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			6.48			
L=C-K	annual consumptive use of irrigation water (inches)			14.34			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,148.40**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.88	4.58	6.78	4.47	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.75	116.33	172.21	113.54	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.71			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.87	1.42	2.84	1.03	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	47.50	36.07	72.14	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.93	35.08	30.75	50.75	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.04	1.38	1.21	2.00	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.63			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			6.29			
L=C-K	annual consumptive use of irrigation water (inches)			11.42			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**24.74**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.09	5.33	7.18	5.44	1.94	1.16
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.09	135.38	182.37	138.18	49.28	29.46
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.14			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.87	1.42	2.84	1.03	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	47.50	36.07	72.14	26.16	5.08
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.94	36.59	31.45	53.57	17.25	1.96
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.04	1.44	1.24	2.11	0.68	0.08
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.59			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			7.25			
L=C-K	annual consumptive use of irrigation water (inches)			15.89			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,125.03**			

Table 2.1.4.200 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.95	4.96	6.68	5.06	1.81	1.08
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.53	125.98	169.67	128.52	45.97	27.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.54			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.87	1.42	2.84	1.03	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	47.50	36.07	72.14	26.16	5.08
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.93	35.84	30.58	52.45	17.13	1.95
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.04	1.41	1.20	2.06	0.67	0.08
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.46			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			7.12			
L=C-K	annual consumptive use of irrigation water (inches)			14.42			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,836.15**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	1.27	4.96	6.70	3.07	1.08
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.67	32.26	125.98	170.18	77.98	27.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.13			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.87	1.42	2.84	1.03	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	47.50	36.07	72.14	26.16	5.08
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.88	29.16	27.78	57.48	18.38	1.95
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.03	1.15	1.09	2.26	0.72	0.08
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.33			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			6.99			
L=C-K	annual consumptive use of irrigation water (inches)			11.14			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,730.97**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.83	2.49	4.68	6.36	5.98	3.78
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.48	63.25	118.87	161.54	151.89	96.01
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.12			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.87	1.42	2.84	1.03	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	47.50	36.07	72.14	26.16	5.08
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.92	31.22	27.35	56.40	21.62	2.27
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.04	1.23	1.08	2.22	0.85	0.09
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.51			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			7.17			
L=C-K	annual consumptive use of irrigation water (inches)			17.95			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,061.12**			

Table 2.1.4.200 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	2.07	6.62	7.29	5.51	1.84
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.18	52.58	168.15	185.17	139.95	46.74
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.40			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.15	1.87	1.42	2.84	1.03	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	3.81	47.50	36.07	72.14	26.16	5.08
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	0.88	30.50	30.48	59.41	21.06	2.04
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.03	1.20	1.20	2.34	0.83	0.08
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.68			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			7.34			
L=C-K	annual consumptive use of irrigation water (inches)			17.06			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,559.29**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.88	5.13	4.89	5.84	2.92	2.12
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.78			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.51			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.13			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
G=D+F	total annual effective precipitation (inches)			8.79			
H=B-G	annual consumptive use of irrigation water (inches)			14.99			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**32,146.06**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.64	2.79	4.58	4.85	2.85	2.50
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.21			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.51			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.13			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.66			
G=D+F	total annual effective precipitation (inches)			8.79			
H=B-G	annual consumptive use of irrigation water (inches)			10.42			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**20,126.23**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.98	1.84	3.20	3.43	3.22	2.60
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.27			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.51			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.13			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.66			
G=D+F	total annual effective precipitation (inches)			8.79			
H=B-G	annual consumptive use of irrigation water (inches)			6.48			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,610.92**			
	Total Lower Laramie consumptive use of irrigation water during 1992 (acre-feet)			**87,369**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.201 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.29	6.01	7.36	5.19	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	58.17	152.65	186.94	131.83	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.85			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.56	1.99	1.30	0.11	0.89	2.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	65.02	50.55	33.02	2.79	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	40.97	40.22	29.22	-0.02	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.61	1.58	1.15	0.00	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.34			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.45			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.73			
K=H+J	total annual effective precipitation (inches)			5.07			
L=C-K	annual consumptive use of irrigation water (inches)			15.78			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,263.72**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.98	5.08	8.02	6.16	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.29	129.03	203.71	156.46	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.24			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.56	1.99	1.30	0.11	0.89	2.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	65.02	50.55	33.02	2.79	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	40.27	38.18	30.32	-0.03	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.59	1.50	1.19	0.00	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.28			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.45			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.73			
K=H+J	total annual effective precipitation (inches)			5.01			
L=C-K	annual consumptive use of irrigation water (inches)			16.23			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**35.17**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.08	5.58	8.02	7.07	2.22	1.14
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	52.83	141.73	203.71	179.58	56.39	28.96
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.11			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.56	1.99	1.30	0.11	0.89	2.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	65.02	50.55	33.02	2.79	22.61	56.90
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	40.49	39.26	30.32	-0.03	15.16	34.10
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.59	1.55	1.19	0.00	0.60	1.34
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.27			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.45			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.73			
K=H+J	total annual effective precipitation (inches)			7.00			
L=C-K	annual consumptive use of irrigation water (inches)			19.11			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,758.30**			

Table 2.1.4.201 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.71	4.58	6.59	5.80	1.83	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.43	116.33	167.39	147.32	46.48	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.45			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.56	1.99	1.30	0.11	0.89	2.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	65.02	50.55	33.02	2.79	22.61	56.90
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	39.66	37.13	27.99	-0.03	14.84	33.72
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.56	1.46	1.10	0.00	0.58	1.33
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.03			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.45			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.73			
K=H+J	total annual effective precipitation (inches)			6.76			
L=C-K	annual consumptive use of irrigation water (inches)			14.69			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,870.53**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	1.43	5.99	9.41	3.80	1.15
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.45	36.32	152.15	239.01	96.52	29.21
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.90			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.56	1.99	1.30	0.11	0.89	2.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	65.02	50.55	33.02	2.79	22.61	56.90
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	38.38	31.14	27.07	-0.03	16.56	34.12
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.51	1.23	1.07	0.00	0.65	1.34
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.80			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.45			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.73			
K=H+J	total annual effective precipitation (inches)			6.53			
L=C-K	annual consumptive use of irrigation water (inches)			16.37			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,482.59**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.81	2.58	5.19	8.19	6.78	3.68
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.97	65.53	131.83	208.03	172.21	93.47
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.23			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.56	1.99	1.30	0.11	0.89	2.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	65.02	50.55	33.02	2.79	22.61	56.90
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	39.89	33.21	25.89	-0.03	19.56	39.29
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.57	1.31	1.02	0.00	0.77	1.55
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.22			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.45			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.73			
K=H+J	total annual effective precipitation (inches)			6.95			
L=C-K	annual consumptive use of irrigation water (inches)			21.28			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,185.55**			

Table 2.1.4.201 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	2.15	7.36	9.42	6.28	1.80
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.92	54.61	186.94	239.27	159.51	45.72
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.07			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.56	1.99	1.30	0.11	0.89	2.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	65.02	50.55	33.02	2.79	22.61	56.90
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	38.25	32.42	29.22	-0.03	19.02	35.38
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.51	1.28	1.15	0.00	0.75	1.39
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.08			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.45			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.73			
K=H+J	total annual effective precipitation (inches)			6.81			
L=C-K	annual consumptive use of irrigation water (inches)			21.26			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,912.69**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.95	5.55	5.65	7.85	3.45	2.15
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.60			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.09			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.64			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.45			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.73			
G=D+F	total annual effective precipitation (inches)			9.37			
H=B-G	annual consumptive use of irrigation water (inches)			18.23			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**39,094.24**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	3.00	5.26	6.49	3.36	2.53
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.31			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.09			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.64			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.45			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.73			
G=D+F	total annual effective precipitation (inches)			9.37			
H=B-G	annual consumptive use of irrigation water (inches)			12.94			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**24,993.61**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	1.97	3.68	4.58	3.79	2.63
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.65			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.09			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.64			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.45			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.73			
G=D+F	total annual effective precipitation (inches)			9.37			
H=B-G	annual consumptive use of irrigation water (inches)			8.28			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**12,280.62**			
	Total Lower Laramie consumptive use of irrigation water during 1989 (acre-feet)			**107,877**			

Notes:

(1) See Table 2.1.4.78.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.202 Consumptive use of irrigation water, CU_W, calculations - 1995 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.08	4.56	6.95	5.05	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	52.83	115.82	176.53	128.27	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.64			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.91	6.93	4.72	1.00	0.08	2.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	176.02	119.89	25.40	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.38	110.47	90.83	19.94	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.61	4.35	3.58	0.79	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.33			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.04			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.02			
K=H+J	total annual effective precipitation (inches)			11.35			
L=C-K	annual consumptive use of irrigation water (inches)			7.29			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**583.81**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.51	3.22	6.35	5.02	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.35	81.79	161.29	127.51	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.10			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.91	6.93	4.72	1.00	0.08	2.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	176.02	119.89	25.40	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.90	102.51	87.84	19.90	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	4.04	3.46	0.78	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.87			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.04			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.02			
K=H+J	total annual effective precipitation (inches)			10.89			
L=C-K	annual consumptive use of irrigation water (inches)			5.21			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11.29**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.73	3.86	6.93	6.28	2.24	1.06
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.94	98.04	176.02	159.51	56.90	26.92
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.10			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.91	6.93	4.72	1.00	0.08	2.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	176.02	119.89	25.40	2.03	63.50
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.08	106.24	90.73	21.36	-0.78	37.45
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	4.18	3.57	0.84	0.00	1.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.65			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.04			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.02			
K=H+J	total annual effective precipitation (inches)			12.67			
L=C-K	annual consumptive use of irrigation water (inches)			9.43			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,854.57**			

Table 2.1.4.202 Consumptive use of irrigation water, CU_W, calculations - 1995 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.80	4.01	7.20	6.53	2.33	1.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.72	101.85	182.88	165.86	59.18	27.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.97			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.91	6.93	4.72	1.00	0.08	2.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	176.02	119.89	25.40	2.03	63.50
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.14	107.13	92.11	21.66	-0.79	37.54
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.60	4.22	3.63	0.85	0.00	1.48
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.78			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.04			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.02			
K=H+J	total annual effective precipitation (inches)			12.80			
L=C-K	annual consumptive use of irrigation water (inches)			10.17			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,294.98**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.88	0.93	4.84	7.82	3.59	0.99
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.35	23.62	122.94	198.63	91.19	25.15
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.05			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.91	6.93	4.72	1.00	0.08	2.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	176.02	119.89	25.40	2.03	63.50
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.38	90.20	80.73	23.27	-0.84	37.31
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.57	3.55	3.18	0.92	0.00	1.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.69			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.04			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.02			
K=H+J	total annual effective precipitation (inches)			11.71			
L=C-K	annual consumptive use of irrigation water (inches)			7.34			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,458.29**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.22	1.45	3.64	5.92	5.56	2.78
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.99	36.83	92.46	150.37	141.22	70.61
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.57			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.91	6.93	4.72	1.00	0.08	2.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	176.02	119.89	25.40	2.03	63.50
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.66	92.86	75.50	20.93	-0.94	41.23
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.58	3.66	2.97	0.82	0.00	1.62
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.65			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.04			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.02			
K=H+J	total annual effective precipitation (inches)			11.67			
L=C-K	annual consumptive use of irrigation water (inches)			8.90			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,005.23**			

Table 2.1.4.202 Consumptive use of irrigation water, CU_W, calculations - 1995 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.75	1.27	5.41	7.12	5.39	1.42
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	19.05	32.26	137.41	180.85	136.91	36.07
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.36			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.91	6.93	4.72	1.00	0.08	2.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	176.02	119.89	25.40	2.03	63.50
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.28	91.93	83.34	22.38	-0.93	38.21
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.56	3.62	3.28	0.88	0.00	1.50
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.84			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.04			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.02			
K=H+J	total annual effective precipitation (inches)			11.86			
L=C-K	annual consumptive use of irrigation water (inches)			9.50			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,323.17**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.54	3.97	5.04	7.20	3.60	2.06
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.41			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			16.14			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			15.33			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.04			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.02			
G=D+F	total annual effective precipitation (inches)			17.35			
H=B-G	annual consumptive use of irrigation water (inches)			7.06			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**15,140.17**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.90	2.84	6.19	7.86	4.63	3.20
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.62			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			16.14			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			15.33			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.04			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.02			
G=D+F	total annual effective precipitation (inches)			17.35			
H=B-G	annual consumptive use of irrigation water (inches)			9.27			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,905.01**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	1.86	4.34	5.55	5.22	3.33
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.44			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			16.14			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			15.33			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.04			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.02			
G=D+F	total annual effective precipitation (inches)			17.35			
H=B-G	annual consumptive use of irrigation water (inches)			4.09			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,066.15**			
	Total Lower Laramie consumptive use of irrigation water during 1995 (acre-feet)			**53,643**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.203 Consumptive use of irrigation water, CU_W, calculations - 1986 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.03	5.79	7.57	4.75	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	51.56	147.07	192.28	120.65	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.14			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.49	1.74	5.60	0.80	0.29	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	37.85	44.20	142.24	20.32	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.67	35.14	108.93	15.67	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.97	1.38	4.29	0.62	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.26			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			8.70			
L=C-K	annual consumptive use of irrigation water (inches)			11.44			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**916.15**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.84	5.12	8.66	5.91	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.74	130.05	219.96	150.11	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.53			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.49	1.74	5.60	0.80	0.29	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	37.85	44.20	142.24	20.32	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.41	33.85	115.77	16.72	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.96	1.33	4.56	0.66	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.51			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			8.95			
L=C-K	annual consumptive use of irrigation water (inches)			12.58			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**27.26**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.96	5.69	8.76	6.86	2.33	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.78	144.53	222.50	174.24	59.18	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.61			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.49	1.74	5.60	0.80	0.29	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	37.85	44.20	142.24	20.32	7.37	33.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.58	34.95	116.42	17.63	4.05	20.65
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.97	1.38	4.58	0.69	0.16	0.81
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.59			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			10.03			
L=C-K	annual consumptive use of irrigation water (inches)			16.58			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,260.73**			

Table 2.1.4.203 Consumptive use of irrigation water, CU_W, calculations - 1986 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.96	5.69	8.76	6.86	2.33	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.78	144.53	222.50	174.24	59.18	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.61			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.49	1.74	5.60	0.80	0.29	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	37.85	44.20	142.24	20.32	7.37	33.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.58	34.95	116.42	17.63	4.05	20.65
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.97	1.38	4.58	0.69	0.16	0.81
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.59			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			10.03			
L=C-K	annual consumptive use of irrigation water (inches)			16.58			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,111.19**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.94	1.31	5.83	8.14	3.55	0.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.88	33.27	148.08	206.76	90.17	22.86
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.67			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.49	1.74	5.60	0.80	0.29	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	37.85	44.20	142.24	20.32	7.37	33.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.22	27.36	98.84	18.94	4.33	20.52
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.91	1.08	3.89	0.75	0.17	0.81
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.61			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			9.05			
L=C-K	annual consumptive use of irrigation water (inches)			11.62			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,891.73**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.80	2.79	6.02	8.45	7.55	3.48
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.72	70.87	152.91	214.63	191.77	88.39
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.09			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.49	1.74	5.60	0.80	0.29	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	37.85	44.20	142.24	20.32	7.37	33.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.36	29.72	99.90	19.27	5.42	23.70
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.96	1.17	3.93	0.76	0.21	0.93
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.96			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			9.40			
L=C-K	annual consumptive use of irrigation water (inches)			20.69			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,986.32**			

Table 2.1.4.203 Consumptive use of irrigation water, CU_W, calculations - 1986 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	2.31	8.46	9.62	6.92	1.69
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.67	58.67	214.88	244.35	175.77	42.93
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.05			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.49	1.74	5.60	0.80	0.29	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	37.85	44.20	142.24	20.32	7.37	33.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.36	28.93	114.48	20.57	5.23	21.44
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.92	1.14	4.51	0.81	0.21	0.84
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.43			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			9.87			
L=C-K	annual consumptive use of irrigation water (inches)			20.18			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,307.53**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.94	5.99	6.53	8.06	3.83	2.03
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.38			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.23			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.67			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
G=D+F	total annual effective precipitation (inches)			12.11			
H=B-G	annual consumptive use of irrigation water (inches)			17.27			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**37,035.52**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.10	4.09	7.66	8.39	4.70	3.01
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.95			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.23			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.67			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.44			
G=D+F	total annual effective precipitation (inches)			12.11			
H=B-G	annual consumptive use of irrigation water (inches)			17.84			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**34,457.96**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.26	2.68	5.37	5.93	5.30	3.13
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.67			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.23			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.67			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.44			
G=D+F	total annual effective precipitation (inches)			12.11			
H=B-G	annual consumptive use of irrigation water (inches)			11.56			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,145.41**			
	Total Lower Laramie consumptive use of irrigation water during 1986 (acre-feet)			**117,140**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.204 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.17	5.65	8.78	5.45	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	55.12	143.51	223.01	138.43	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.05			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.78	2.62	0.04	0.55	1.24	0.30
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.81	66.55	1.02	13.97	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.22	50.46	-2.71	10.91	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.52	1.99	0.00	0.43	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.94			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			5.94			
L=C-K	annual consumptive use of irrigation water (inches)			16.11			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,290.14**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.53	3.87	7.79	5.25	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.86	98.30	197.87	133.35	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.44			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.78	2.62	0.04	0.55	1.24	0.30
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.81	66.55	1.02	13.97	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.75	45.69	-2.56	10.79	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.50	1.80	0.00	0.42	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			2.72			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			5.72			
L=C-K	annual consumptive use of irrigation water (inches)			12.72			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**27.56**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.68	4.46	8.17	6.33	1.88	1.06
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.67	113.28	207.52	160.78	47.75	26.92
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.58			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.78	2.62	0.04	0.55	1.24	0.30
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.81	66.55	1.02	13.97	31.50	7.62
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.86	47.22	-2.62	11.46	20.58	3.96
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.51	1.86	0.00	0.45	0.81	0.16
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.79			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			6.79			
L=C-K	annual consumptive use of irrigation water (inches)			16.79			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,302.03**			

Table 2.1.4.204 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.96	5.20	9.52	7.37	2.19	1.24
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.78	132.08	241.81	187.20	55.63	31.50
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.48			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.78	2.62	0.04	0.55	1.24	0.30
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.81	66.55	1.02	13.97	31.50	7.62
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.06	49.21	-2.82	12.15	20.93	4.00
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.51	1.94	0.00	0.48	0.82	0.16
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.91			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			6.91			
L=C-K	annual consumptive use of irrigation water (inches)			20.57			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,619.25**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	1.33	7.10	9.78	3.75	1.24
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.67	33.78	180.34	248.41	95.25	31.50
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.25			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.78	2.62	0.04	0.55	1.24	0.30
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.81	66.55	1.02	13.97	31.50	7.62
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.42	39.64	-2.47	13.90	22.84	4.00
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.49	1.56	0.00	0.55	0.90	0.16
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.66			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			6.66			
L=C-K	annual consumptive use of irrigation water (inches)			17.59			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,891.18**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.76	2.49	6.39	8.87	6.97	4.14
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.70	63.25	162.31	225.30	177.04	105.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.62			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.78	2.62	0.04	0.55	1.24	0.30
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.81	66.55	1.02	13.97	31.50	7.62
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.92	42.30	-2.37	13.21	27.34	4.70
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.51	1.67	0.00	0.52	1.08	0.19
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.97			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			6.97			
L=C-K	annual consumptive use of irrigation water (inches)			23.65			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,985.82**			

Table 2.1.4.204 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	1.99	8.67	9.74	6.17	1.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.15	50.55	220.22	247.40	156.72	49.28
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.50			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.78	2.62	0.04	0.55	1.24	0.30
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.81	66.55	1.02	13.97	31.50	7.62
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.38	41.13	-2.69	13.87	26.15	4.16
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.49	1.62	0.00	0.55	1.03	0.16
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.85			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.21			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			6.85			
L=C-K	annual consumptive use of irrigation water (inches)			22.65			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**12,691.55**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.75	5.13	6.66	8.13	3.40	2.31
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.38			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.53			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.25			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.21			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			8.25			
H=B-G	annual consumptive use of irrigation water (inches)			20.13			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**43,168.79**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.10	3.74	8.34	9.04	4.45	3.67
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.34			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.53			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.25			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.21			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			8.25			
H=B-G	annual consumptive use of irrigation water (inches)			23.09			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**44,598.34**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.26	2.46	5.85	6.38	5.02	3.81
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.78			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			5.53			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			5.25			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.21			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			8.25			
H=B-G	annual consumptive use of irrigation water (inches)			16.53			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**24,516.75**			
	Total Lower Laramie consumptive use of irrigation water during 1980 (acre-feet)			**146,091**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.205 Consumptive use of irrigation water, CU_W, calculations - 1999 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.89	5.65	7.30	5.26	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.01	143.51	185.42	133.60	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.10			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.93	2.17	3.44	1.44	1.37	2.86
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	74.42	55.12	87.38	36.58	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	45.16	42.63	70.36	28.62	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.78	1.68	2.77	1.13	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.36			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.28			
K=H+J	total annual effective precipitation (inches)			9.64			
L=C-K	annual consumptive use of irrigation water (inches)			10.46			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**837.67**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)						
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)			Not cultivated			
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)						
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)						
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)						
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)						
H	calculated effective precipitation, Re, Apr-Sep (inches)						
I	average total precipitation, R_t, Oct - Mar (inches) (2)						
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)						
K=H+J	total annual effective precipitation (inches)						
L=C-K	annual consumptive use of irrigation water (inches)						
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)						
N	**consumptive use of irrigation water (acre-feet per irrigation season)**						
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.54	4.68	7.12	6.40	2.09	1.00
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.12	118.87	180.85	162.56	53.09	25.40
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.83			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.93	2.17	3.44	1.44	1.37	2.86
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	74.42	55.12	87.38	36.58	34.80	72.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	44.29	40.38	69.66	30.51	22.88	42.06
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.74	1.59	2.74	1.20	0.90	1.66
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.83			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.28			
K=H+J	total annual effective precipitation (inches)			12.11			
L=C-K	annual consumptive use of irrigation water (inches)			10.72			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,108.27**			

Table 2.1.4.205 Consumptive use of irrigation water, CU_W, calculations - 1999 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.40	4.26	6.49	5.83	1.91	0.91
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.56	108.20	164.85	148.08	48.51	23.11
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.80			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.93	2.17	3.44	1.44	1.37	2.86
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	74.42	55.12	87.38	36.58	34.80	72.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	43.94	39.44	67.25	29.55	22.65	41.85
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.73	1.55	2.65	1.16	0.89	1.65
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.63			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.28			
K=H+J	total annual effective precipitation (inches)			11.91			
L=C-K	annual consumptive use of irrigation water (inches)			8.89			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,131.99**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.83	1.20	5.33	8.53	3.59	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.08	30.48	135.38	216.66	91.19	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.49			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.93	2.17	3.44	1.44	1.37	2.86
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	74.42	55.12	87.38	36.58	34.80	72.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	42.57	33.25	63.03	34.36	24.88	42.09
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.68	1.31	2.48	1.35	0.98	1.66
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.46			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.28			
K=H+J	total annual effective precipitation (inches)			11.74			
L=C-K	annual consumptive use of irrigation water (inches)			8.75			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,930.52**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.34	2.17	4.63	7.44	6.42	3.25
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.04	55.12	117.60	188.98	163.07	82.55
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.25			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.93	2.17	3.44	1.44	1.37	2.86
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	74.42	55.12	87.38	36.58	34.80	72.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	43.80	35.10	60.61	32.33	29.14	47.70
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.72	1.38	2.39	1.27	1.15	1.88
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.79			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.28			
K=H+J	total annual effective precipitation (inches)			12.07			
L=C-K	annual consumptive use of irrigation water (inches)			13.18			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,450.45**			

Table 2.1.4.205 Consumptive use of irrigation water, CU_W, calculations - 1999 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.89	2.05	7.43	9.70	6.73	1.80
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.61	52.07	188.72	246.38	170.94	45.72
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.60			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.93	2.17	3.44	1.44	1.37	2.86
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	74.42	55.12	87.38	36.58	34.80	72.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	42.71	34.86	70.87	36.68	29.65	43.99
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.68	1.37	2.79	1.44	1.17	1.73
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.18			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.28			
K=H+J	total annual effective precipitation (inches)			12.46			
L=C-K	annual consumptive use of irrigation water (inches)			16.14			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,043.78**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.44	5.20	5.60	7.94	3.64	2.11
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.93			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			14.21			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			13.50			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.28			
G=D+F	total annual effective precipitation (inches)			15.78			
H=B-G	annual consumptive use of irrigation water (inches)			11.15			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**23,911.18**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.78	3.63	6.73	8.46	4.57	3.21
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.38			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			14.21			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			13.50			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.28			
G=D+F	total annual effective precipitation (inches)			15.78			
H=B-G	annual consumptive use of irrigation water (inches)			12.60			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**24,336.90**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	2.38	4.71	5.98	5.15	3.34
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.63			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			14.21			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			13.50			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.55			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.28			
G=D+F	total annual effective precipitation (inches)			15.78			
H=B-G	annual consumptive use of irrigation water (inches)			6.85			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,159.69**			
	Total Lower Laramie consumptive use of irrigation water during 1999 (acre-feet)			**78,910**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.206 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.08	5.63	7.33	4.97	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	52.83	143.00	186.18	126.24	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.01			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.43	6.01	5.27	1.26	1.99	0.55
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.32	152.65	133.86	32.00	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.81	103.84	102.02	24.82	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.94	4.09	4.02	0.98	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.03			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			11.33			
L=C-K	annual consumptive use of irrigation water (inches)			8.68			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**695.12**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.56	4.12	6.96	5.13	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.62	104.65	176.78	130.30	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.77			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.43	6.01	5.27	1.26	1.99	0.55
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.32	152.65	133.86	32.00	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.12	95.44	99.93	25.04	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.91	3.76	3.93	0.99	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.59			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			10.89			
L=C-K	annual consumptive use of irrigation water (inches)			6.88			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14.91**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.83	5.03	7.73	6.54	2.19	1.16
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.48	127.76	196.34	166.12	55.63	29.46
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.48			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.43	6.01	5.27	1.26	1.99	0.55
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.32	152.65	133.86	32.00	50.55	13.97
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.48	100.42	104.32	27.10	32.49	8.59
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.92	3.95	4.11	1.07	1.28	0.34
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.67			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			12.97			
L=C-K	annual consumptive use of irrigation water (inches)			11.51			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,263.63**			

Table 2.1.4.206 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.83	5.03	7.73	6.54	2.19	1.16
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.48	127.76	196.34	166.12	55.63	29.46
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.48			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.43	6.01	5.27	1.26	1.99	0.55
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.32	152.65	133.86	32.00	50.55	13.97
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.48	100.42	104.32	27.10	32.49	8.59
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.92	3.95	4.11	1.07	1.28	0.34
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.67			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			12.97			
L=C-K	annual consumptive use of irrigation water (inches)			11.51			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,465.61**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.96	1.27	5.64	8.50	3.65	1.14
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.38	32.26	143.26	215.90	92.71	28.96
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.16			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.43	6.01	5.27	1.26	1.99	0.55
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.32	152.65	133.86	32.00	50.55	13.97
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.36	81.40	92.83	30.23	35.25	8.58
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.88	3.20	3.65	1.19	1.39	0.34
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.65			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			11.95			
L=C-K	annual consumptive use of irrigation water (inches)			9.21			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,084.58**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.52	2.22	4.76	7.22	6.37	3.59
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.61	56.39	120.90	183.39	161.80	91.19
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.68			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.43	6.01	5.27	1.26	1.99	0.55
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.32	152.65	133.86	32.00	50.55	13.97
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.07	85.83	88.38	28.15	41.03	9.84
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.91	3.38	3.48	1.11	1.62	0.39
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.89			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			12.19			
L=C-K	annual consumptive use of irrigation water (inches)			13.49			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,555.12**			

Table 2.1.4.206 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.96	2.00	7.32	9.00	6.39	1.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.38	50.80	185.93	228.60	162.31	48.26
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.57			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.43	6.01	5.27	1.26	1.99	0.55
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.32	152.65	133.86	32.00	50.55	13.97
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.36	84.79	101.96	31.09	41.08	8.95
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.88	3.34	4.01	1.22	1.62	0.35
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.42			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
K=H+J	total annual effective precipitation (inches)			12.72			
L=C-K	annual consumptive use of irrigation water (inches)			14.85			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,320.95**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.75	5.30	5.76	7.68	3.60	2.33
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.42			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			16.51			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			15.68			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.30			
G=D+F	total annual effective precipitation (inches)			16.98			
H=B-G	annual consumptive use of irrigation water (inches)			10.44			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**22,388.58**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.96	3.62	6.76	8.00	4.42	3.45
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.21			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			16.51			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			15.68			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.30			
G=D+F	total annual effective precipitation (inches)			16.98			
H=B-G	annual consumptive use of irrigation water (inches)			11.23			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**21,690.75**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.18	2.37	4.74	5.65	4.98	3.59
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.51			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			16.51			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			15.68			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.60			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.30			
G=D+F	total annual effective precipitation (inches)			16.98			
H=B-G	annual consumptive use of irrigation water (inches)			5.53			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,201.91**			
	Total Lower Laramie consumptive use of irrigation water during 1991 (acre-feet)			**72,681**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.207 Consumptive use of irrigation water, CU_W, calculations - 2000 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.42	6.69	8.53	5.75	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	61.47	169.93	216.66	146.05	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.39			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.97	2.64	0.60	0.69	1.34	1.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	50.04	67.06	15.24	17.53	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	32.61	53.85	14.28	14.21	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.28	2.12	0.56	0.56	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.52			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.08			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.04			
K=H+J	total annual effective precipitation (inches)			5.56			
L=C-K	annual consumptive use of irrigation water (inches)			17.83			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,427.89**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)						
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)			Not cultivated			
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)						
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)						
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)						
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)						
H	calculated effective precipitation, Re, Apr-Sep (inches)						
I	average total precipitation, R_t, Oct - Mar (inches) (2)						
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)						
K=H+J	total annual effective precipitation (inches)						
L=C-K	annual consumptive use of irrigation water (inches)						
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)						
N	**consumptive use of irrigation water (acre-feet per irrigation season)**						
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.10	5.89	8.85	7.44	2.43	1.20
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.34	149.61	224.79	188.98	61.72	30.48
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.91			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.97	2.64	0.60	0.69	1.34	1.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	50.04	67.06	15.24	17.53	34.04	41.15
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	32.03	51.49	14.53	15.62	22.84	25.46
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.26	2.03	0.57	0.61	0.90	1.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.37			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.08			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.04			
K=H+J	total annual effective precipitation (inches)			7.41			
L=C-K	annual consumptive use of irrigation water (inches)			20.50			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,031.67**			

Table 2.1.4.207 Consumptive use of irrigation water, CU_W, calculations - 2000 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.76	4.93	7.41	6.23	2.03	1.00
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.70	125.22	188.21	158.24	51.56	25.40
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.36			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.97	2.64	0.60	0.69	1.34	1.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	50.04	67.06	15.24	17.53	34.04	41.15
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	31.43	48.80	13.41	14.60	22.33	25.18
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.24	1.92	0.53	0.57	0.88	0.99
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.13			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.08			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.04			
K=H+J	total annual effective precipitation (inches)			7.17			
L=C-K	annual consumptive use of irrigation water (inches)			16.19			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,061.53**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.03	1.38	6.03	9.02	3.79	1.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.16	35.05	153.16	229.11	96.27	27.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.35			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.97	2.64	0.60	0.69	1.34	1.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	50.04	67.06	15.24	17.53	34.04	41.15
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.17	40.03	12.41	17.06	24.64	25.32
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.19	1.58	0.49	0.67	0.97	1.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.90			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.08			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.04			
K=H+J	total annual effective precipitation (inches)			6.94			
L=C-K	annual consumptive use of irrigation water (inches)			15.41			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,161.07**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.74	2.60	5.48	8.25	7.11	3.70
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.20	66.04	139.19	209.55	180.59	93.98
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.88			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.97	2.64	0.60	0.69	1.34	1.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	50.04	67.06	15.24	17.53	34.04	41.15
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	31.39	42.85	12.04	16.34	29.66	29.28
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.24	1.69	0.47	0.64	1.17	1.15
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.36			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.08			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.04			
K=H+J	total annual effective precipitation (inches)			7.40			
L=C-K	annual consumptive use of irrigation water (inches)			21.48			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,253.08**			

Table 2.1.4.207 Consumptive use of irrigation water, CU_W, calculations - 2000 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	2.39	8.55	10.44	7.23	1.99
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.45	60.71	217.17	265.18	183.64	50.55
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.72			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.97	2.64	0.60	0.69	1.34	1.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	50.04	67.06	15.24	17.53	34.04	41.15
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.32	42.35	14.29	18.47	29.86	26.61
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.19	1.67	0.56	0.73	1.18	1.05
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.38			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.08			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.04			
K=H+J	total annual effective precipitation (inches)			7.42			
L=C-K	annual consumptive use of irrigation water (inches)			24.30			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,616.10**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.67	5.25	5.59	7.40	3.39	2.02
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.32			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.86			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.42			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.08			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.04			
G=D+F	total annual effective precipitation (inches)			9.46			
H=B-G	annual consumptive use of irrigation water (inches)			16.86			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**36,156.27**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.37	2.57	4.70	5.53	2.98	2.16
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.31			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.86			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.42			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.08			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.04			
G=D+F	total annual effective precipitation (inches)			9.46			
H=B-G	annual consumptive use of irrigation water (inches)			9.85			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**19,025.28**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.82	1.69	3.29	3.91	3.37	2.24
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.32			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.86			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.42			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.08			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.04			
G=D+F	total annual effective precipitation (inches)			9.46			
H=B-G	annual consumptive use of irrigation water (inches)			5.86			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,691.36**			
	Total Lower Laramie consumptive use of irrigation water during 2000 (acre-feet)			**97,424**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.208 Consumptive use of irrigation water, CU_W, calculations - 1993 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.19	6.24	7.06	4.95	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	55.63	158.50	179.32	125.73	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.44			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.29	0.95	4.60	0.75	1.21	1.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	58.17	24.13	116.84	19.05	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	36.88	20.25	89.38	14.83	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.45	0.80	3.52	0.58	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			7.79			
L=C-K	annual consumptive use of irrigation water (inches)			12.65			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,013.05**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.59	4.39	6.43	4.89	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.39	111.51	163.32	124.21	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.30			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.29	0.95	4.60	0.75	1.21	1.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	58.17	24.13	116.84	19.05	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	35.67	18.27	86.29	14.78	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.40	0.72	3.40	0.58	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.10			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			7.54			
L=C-K	annual consumptive use of irrigation water (inches)			9.76			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**21.15**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.82	5.27	7.04	6.14	2.11	1.04
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.23	133.86	178.82	155.96	53.59	26.42
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.42			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.29	0.95	4.60	0.75	1.21	1.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	58.17	24.13	116.84	19.05	30.73	40.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	36.13	19.19	89.28	15.85	20.35	24.94
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.42	0.76	3.51	0.62	0.80	0.98
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.09			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			9.53			
L=C-K	annual consumptive use of irrigation water (inches)			13.89			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,731.70**			

Table 2.1.4.208 Consumptive use of irrigation water, CU_W, calculations - 1993 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.90	5.49	7.33	6.40	2.20	1.08
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.26	139.45	186.18	162.56	55.88	27.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.40			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.29	0.95	4.60	0.75	1.21	1.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	58.17	24.13	116.84	19.05	30.73	40.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	36.29	19.42	90.74	16.08	20.46	25.00
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.43	0.76	3.57	0.63	0.81	0.98
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.18			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			9.62			
L=C-K	annual consumptive use of irrigation water (inches)			14.78			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,881.99**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.79	1.09	4.22	6.57	2.90	0.84
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.07	27.69	107.19	166.88	73.66	21.34
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.41			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.29	0.95	4.60	0.75	1.21	1.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	58.17	24.13	116.84	19.05	30.73	40.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	34.11	15.19	76.27	16.23	21.27	24.67
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.34	0.60	3.00	0.64	0.84	0.97
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.39			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			8.83			
L=C-K	annual consumptive use of irrigation water (inches)			7.58			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,538.67**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.57	2.42	4.50	7.07	6.39	3.31
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.88	61.47	114.30	179.58	162.31	84.07
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.26			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.29	0.95	4.60	0.75	1.21	1.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	58.17	24.13	116.84	19.05	30.73	40.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	35.63	16.36	77.47	16.69	25.85	28.32
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.40	0.64	3.05	0.66	1.02	1.11
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.88			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			9.32			
L=C-K	annual consumptive use of irrigation water (inches)			15.94			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,382.41**			

Table 2.1.4.208 Consumptive use of irrigation water, CU_W, calculations - 1993 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.78	1.70	5.38	6.83	4.97	1.36
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	19.81	43.18	136.65	173.48	126.24	34.54
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.02			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.29	0.95	4.60	0.75	1.21	1.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	58.17	24.13	116.84	19.05	30.73	40.64
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	34.09	15.72	81.37	16.47	23.88	25.39
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.34	0.62	3.20	0.65	0.94	1.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.75			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			9.19			
L=C-K	annual consumptive use of irrigation water (inches)			11.83			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,628.74**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.85	5.78	5.46	7.52	3.62	2.15
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.38			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.40			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.83			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
G=D+F	total annual effective precipitation (inches)			12.27			
H=B-G	annual consumptive use of irrigation water (inches)			15.11			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**32,403.40**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.61	3.14	5.08	6.23	3.53	2.53
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.12			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.40			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.83			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.44			
G=D+F	total annual effective precipitation (inches)			12.27			
H=B-G	annual consumptive use of irrigation water (inches)			9.85			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**19,025.28**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	2.06	3.57	4.40	3.97	2.64
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.61			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.40			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.83			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.88			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.44			
G=D+F	total annual effective precipitation (inches)			12.27			
H=B-G	annual consumptive use of irrigation water (inches)			5.34			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,920.11**			
	Total Lower Laramie consumptive use of irrigation water during 1993 (acre-feet)			**79,547**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.209 Consumptive use of irrigation water, CU_W, calculations - 2001 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.44	5.03	7.20	4.80	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.58	127.76	182.88	121.92	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.47			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.24	2.57	0.74	3.91	0.55	1.45
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	56.90	65.28	18.80	99.31	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	34.67	47.92	16.58	68.42	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.36	1.89	0.65	2.69	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.59			
I	average total precipitation, R_t, Nov - Mar (inches) (2)			2.37			
J=0.5xI	effective precipitation = 50 percent total precipitation, Nov - Mar (inches)			1.19			
K=H+J	total annual effective precipitation (inches)			7.78			
L=C-K	annual consumptive use of irrigation water (inches)			10.69			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**856.09**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)						
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)			Not cultivated			
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)						
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)						
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)						
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)						
H	calculated effective precipitation, Re, Apr-Sep (inches)						
I	average total precipitation, R_t, Nov - Mar (inches) (2)						
J=0.5xI	effective precipitation = 50 percent total precipitation, Nov - Mar (inches)						
K=H+J	total annual effective precipitation (inches)						
L=C-K	annual consumptive use of irrigation water (inches)						
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)						
N	**consumptive use of irrigation water (acre-feet per irrigation season)**						
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.50	5.35	9.04	7.53	2.56	1.26
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.10	135.89	229.62	191.26	65.02	32.00
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.24			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.24	2.57	0.74	3.91	0.55	1.45
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	56.90	65.28	18.80	99.31	13.97	36.83
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	34.79	48.78	18.38	79.69	9.29	23.04
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.37	1.92	0.72	3.14	0.37	0.91
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.43			
I	average total precipitation, R_t, Nov - Mar (inches) (2)			2.37			
J=0.5xI	effective precipitation = 50 percent total precipitation, Nov - Mar (inches)			1.19			
K=H+J	total annual effective precipitation (inches)			9.62			
L=C-K	annual consumptive use of irrigation water (inches)			17.62			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,465.27**			

Table 2.1.4.209 Consumptive use of irrigation water, CU_W, calculations - 2001 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.51	5.37	9.08	7.56	2.57	1.27
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.35	136.40	230.63	192.02	65.28	32.26
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.36			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.24	2.57	0.74	3.91	0.55	1.45
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	56.90	65.28	18.80	99.31	13.97	36.83
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	34.81	48.84	18.42	79.83	9.29	23.05
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.37	1.92	0.73	3.14	0.37	0.91
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.44			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.37			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
K=H+J	total annual effective precipitation (inches)			9.63			
L=C-K	annual consumptive use of irrigation water (inches)			17.73			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,257.62**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.75	1.28	6.26	9.29	4.05	1.18
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	19.05	32.51	159.00	235.97	102.87	29.97
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.81			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.24	2.57	0.74	3.91	0.55	1.45
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	56.90	65.28	18.80	99.31	13.97	36.83
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	33.36	38.86	15.73	87.93	10.09	22.94
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.31	1.53	0.62	3.46	0.40	0.90
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.22			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.37			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
K=H+J	total annual effective precipitation (inches)			9.41			
L=C-K	annual consumptive use of irrigation water (inches)			13.40			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,487.88**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	2.31	5.45	8.14	7.29	3.82
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.73	58.67	138.43	206.76	185.17	97.03
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.22			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.24	2.57	0.74	3.91	0.55	1.45
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	56.90	65.28	18.80	99.31	13.97	36.83
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	34.23	41.16	15.04	82.46	12.09	26.58
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.35	1.62	0.59	3.25	0.48	1.05
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.34			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.37			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
K=H+J	total annual effective precipitation (inches)			9.53			
L=C-K	annual consumptive use of irrigation water (inches)			18.69			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,310.99**			

Table 2.1.4.209 Consumptive use of irrigation water, CU_W, calculations - 2001 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.75	2.01	8.09	9.79	7.06	1.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	19.05	51.05	205.49	248.67	179.32	49.78
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.66			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.24	2.57	0.74	3.91	0.55	1.45
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	56.90	65.28	18.80	99.31	13.97	36.83
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	33.36	40.48	17.43	90.42	11.94	23.96
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.31	1.59	0.69	3.56	0.47	0.94
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.56			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.37			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
K=H+J	total annual effective precipitation (inches)			9.75			
L=C-K	annual consumptive use of irrigation water (inches)			19.91			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,156.24**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.92	4.80	5.74	7.53	3.58	2.16
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.73			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.46			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.89			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.37			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
G=D+F	total annual effective precipitation (inches)			12.08			
H=B-G	annual consumptive use of irrigation water (inches)			13.65			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**29,272.43**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.62	3.86	7.94	9.26	5.19	3.77
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.64			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.46			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.89			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.37			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
G=D+F	total annual effective precipitation (inches)			12.08			
H=B-G	annual consumptive use of irrigation water (inches)			19.56			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**37,780.14**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	2.54	5.56	6.54	5.85	3.92
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.38			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.46			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.89			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.37			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
G=D+F	total annual effective precipitation (inches)			12.08			
H=B-G	annual consumptive use of irrigation water (inches)			13.30			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**19,726.12**			
	Total Lower Laramie consumptive use of irrigation water during 2001 (acre-feet)			**115,313**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.210 Consumptive use of irrigation water, CU_W, calculations - 1985 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.16	5.77	6.86	4.52	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	54.86	146.56	174.24	114.81	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.31			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.14	1.16	1.26	2.34	0.74	2.39
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	28.96	29.46	32.00	59.44	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.28	23.98	27.58	42.83	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.76	0.94	1.09	1.69	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.48			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.01			
K=H+J	total annual effective precipitation (inches)			5.49			
L=C-K	annual consumptive use of irrigation water (inches)			13.82			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,106.75**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.81	4.71	7.26	5.19	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.97	119.63	184.40	131.83	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.97			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.14	1.16	1.26	2.34	0.74	2.39
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	28.96	29.46	32.00	59.44	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.91	22.60	28.21	44.46	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.74	0.89	1.11	1.75	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.49			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.01			
K=H+J	total annual effective precipitation (inches)			5.50			
L=C-K	annual consumptive use of irrigation water (inches)			13.47			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**29.19**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.03	5.52	7.74	6.35	2.14	0.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	51.56	140.21	196.60	161.29	54.36	23.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.71			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.14	1.16	1.26	2.34	0.74	2.39
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	28.96	29.46	32.00	59.44	18.80	60.71
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.14	23.65	28.97	47.44	12.50	35.72
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.75	0.93	1.14	1.87	0.49	1.41
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.59			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.01			
K=H+J	total annual effective precipitation (inches)			7.60			
L=C-K	annual consumptive use of irrigation water (inches)			17.11			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,364.97**			

Table 2.1.4.210 Consumptive use of irrigation water, CU_W, calculations - 1985 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.79	4.88	6.84	5.62	1.89	0.83
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.47	123.95	173.74	142.75	48.01	21.08
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.85			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.14	1.16	1.26	2.34	0.74	2.39
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	28.96	29.46	32.00	59.44	18.80	60.71
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.89	22.82	27.55	45.54	12.33	35.52
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.74	0.90	1.08	1.79	0.49	1.40
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.40			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.01			
K=H+J	total annual effective precipitation (inches)			7.41			
L=C-K	annual consumptive use of irrigation water (inches)			14.44			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,838.69**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	1.29	5.23	7.65	3.30	0.85
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.15	32.77	132.84	194.31	83.82	21.59
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.31			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.14	1.16	1.26	2.34	0.74	2.39
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	28.96	29.46	32.00	59.44	18.80	60.71
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.06	18.67	25.18	51.01	13.34	35.56
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.71	0.74	0.99	2.01	0.53	1.40
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.38			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.01			
K=H+J	total annual effective precipitation (inches)			7.39			
L=C-K	annual consumptive use of irrigation water (inches)			11.92			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,992.21**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.06	2.99	5.87	8.64	7.65	3.53
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	52.32	75.95	149.10	219.46	194.31	89.66
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.74			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.14	1.16	1.26	2.34	0.74	2.39
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	28.96	29.46	32.00	59.44	18.80	60.71
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.17	20.53	26.10	53.91	17.01	41.30
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.75	0.81	1.03	2.12	0.67	1.63
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.01			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.01			
K=H+J	total annual effective precipitation (inches)			8.02			
L=C-K	annual consumptive use of irrigation water (inches)			22.72			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,671.79**			

Table 2.1.4.210 Consumptive use of irrigation water, CU_W, calculations - 1985 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.11	2.27	7.60	9.06	6.46	1.57
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.19	57.66	193.04	230.12	164.08	39.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.07			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.14	1.16	1.26	2.34	0.74	2.39
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	28.96	29.46	32.00	59.44	18.80	60.71
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.18	19.72	28.75	55.19	15.91	37.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.72	0.78	1.13	2.17	0.63	1.46
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.89			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.01			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.01			
K=H+J	total annual effective precipitation (inches)			7.90			
L=C-K	annual consumptive use of irrigation water (inches)			20.17			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,301.92**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.90	5.53	5.50	7.10	3.35	1.78
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.16			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.03			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.58			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.01			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.01			
G=D+F	total annual effective precipitation (inches)			9.59			
H=B-G	annual consumptive use of irrigation water (inches)			16.57			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**35,534.37**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.40	4.37	7.47	8.58	4.76	3.05
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.63			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.03			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.58			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.01			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.01			
G=D+F	total annual effective precipitation (inches)			9.59			
H=B-G	annual consumptive use of irrigation water (inches)			21.04			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**40,638.76**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.44	2.87	5.23	6.06	5.37	3.17
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.14			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.03			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.58			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.01			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.01			
G=D+F	total annual effective precipitation (inches)			9.59			
H=B-G	annual consumptive use of irrigation water (inches)			14.55			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**21,580.08**			
	Total Lower Laramie consumptive use of irrigation water during 1985 (acre-feet)			**127,059**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.211 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.37	6.17	8.17	4.80	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	60.20	156.72	207.52	121.92	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.51			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.70	1.55	0.68	2.68	1.03	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.78	39.37	17.27	68.07	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.94	32.26	16.01	49.10	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.47	1.27	0.63	1.93	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.30			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.22			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			5.41			
L=C-K	annual consumptive use of irrigation water (inches)			16.10			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,289.34**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.93	4.91	8.42	5.39	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.02	124.71	213.87	136.91	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.65			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.70	1.55	0.68	2.68	1.03	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.78	39.37	17.27	68.07	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.65	30.06	16.24	50.74	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.46	1.18	0.64	2.00	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.28			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.22			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			5.39			
L=C-K	annual consumptive use of irrigation water (inches)			15.26			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**33.06**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.59	4.22	6.60	4.85	1.70	0.84
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.39	107.19	167.64	123.19	43.18	21.34
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.80			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.70	1.55	0.68	2.68	1.03	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.78	39.37	17.27	68.07	26.16	7.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.43	28.93	14.67	49.24	17.02	3.72
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.45	1.14	0.58	1.94	0.67	0.15
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.93			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.22			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			6.04			
L=C-K	annual consumptive use of irrigation water (inches)			13.76			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,706.13**			

Table 2.1.4.211 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.31	3.49	5.45	4.00	1.40	0.69
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.27	88.65	138.43	101.60	35.56	17.53
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.34			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.70	1.55	0.68	2.68	1.03	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.78	39.37	17.27	68.07	26.16	7.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.26	27.77	13.75	46.95	16.74	3.69
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.44	1.09	0.54	1.85	0.66	0.15
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.73			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.22			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			5.84			
L=C-K	annual consumptive use of irrigation water (inches)			10.50			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,337.00**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.18	1.50	6.77	8.85	3.99	1.16
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.97	38.10	171.96	224.79	101.35	29.46
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.45			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.70	1.55	0.68	2.68	1.03	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.78	39.37	17.27	68.07	26.16	7.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.17	24.85	14.81	61.56	19.34	3.79
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.44	0.98	0.58	2.42	0.76	0.15
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.33			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.22			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			6.44			
L=C-K	annual consumptive use of irrigation water (inches)			17.01			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,696.93**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.06	2.91	6.36	8.36	7.72	4.06
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	52.32	73.91	161.54	212.34	196.09	103.12
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.47			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.70	1.55	0.68	2.68	1.03	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.78	39.37	17.27	68.07	26.16	7.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.74	26.89	14.47	59.90	23.82	4.46
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.46	1.06	0.57	2.36	0.94	0.18
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.57			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.22			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			6.68			
L=C-K	annual consumptive use of irrigation water (inches)			24.79			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,370.76**			

Table 2.1.4.211 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.20	2.41	8.93	9.52	7.08	1.97
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.48	61.21	226.82	241.81	179.83	50.04
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.11			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.70	1.55	0.68	2.68	1.03	0.29
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.78	39.37	17.27	68.07	26.16	7.37
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.19	26.15	16.71	63.91	22.99	3.97
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.44	1.03	0.66	2.52	0.91	0.16
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.72			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.22			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
K=H+J	total annual effective precipitation (inches)			6.83			
L=C-K	annual consumptive use of irrigation water (inches)			24.28			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,604.89**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.83	5.28	5.83	6.74	3.32	2.00
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.00			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.93			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.58			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.22			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.11			
G=D+F	total annual effective precipitation (inches)			7.69			
H=B-G	annual consumptive use of irrigation water (inches)			18.31			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**39,265.80**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.39	4.25	8.08	8.31	4.81	3.50
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.34			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.93			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.58			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.22			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.11			
G=D+F	total annual effective precipitation (inches)			7.69			
H=B-G	annual consumptive use of irrigation water (inches)			23.65			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**45,679.98**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.43	2.79	5.67	5.87	5.42	3.64
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.82			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.93			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.58			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.22			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.11			
G=D+F	total annual effective precipitation (inches)			7.69			
H=B-G	annual consumptive use of irrigation water (inches)			17.13			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**25,406.65**			
	Total Lower Laramie consumptive use of irrigation water during 1988 (acre-feet)			**143,391**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.212 Consumptive use of irrigation water, CU_W, calculations - 1997 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.91	6.33	7.74	5.17	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.51	160.78	196.60	131.32	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.15			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.15	2.90	1.91	2.02	2.41	1.51
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.21	73.66	48.51	51.31	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.17	57.35	42.67	38.90	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.75	2.26	1.68	1.53	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.22			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			7.36			
L=C-K	annual consumptive use of irrigation water (inches)			13.79			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,104.35**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.58	5.06	8.00	5.81	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.13	128.52	203.20	147.57	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.45			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.15	2.90	1.91	2.02	2.41	1.51
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.21	73.66	48.51	51.31	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.82	53.43	43.29	40.31	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.74	2.10	1.70	1.59	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.13			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			7.27			
L=C-K	annual consumptive use of irrigation water (inches)			13.18			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**28.56**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	5.62	8.09	6.74	2.16	1.14
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.42	142.75	205.49	171.20	54.86	28.96
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.42			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.15	2.90	1.91	2.02	2.41	1.51
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.21	73.66	48.51	51.31	61.21	38.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.92	55.12	43.51	42.46	38.54	23.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.74	2.17	1.71	1.67	1.52	0.94
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.75			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			9.89			
L=C-K	annual consumptive use of irrigation water (inches)			15.53			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,054.23**			

Table 2.1.4.212 Consumptive use of irrigation water, CU_W, calculations - 1997 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.47	4.93	7.10	5.92	1.90	1.00
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.34	125.22	180.34	150.37	48.26	25.40
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.32			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.15	2.90	1.91	2.02	2.41	1.51
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.21	73.66	48.51	51.31	61.21	38.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.71	53.04	41.17	40.56	37.98	23.58
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.74	2.09	1.62	1.60	1.50	0.93
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.48			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			9.62			
L=C-K	annual consumptive use of irrigation water (inches)			12.70			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,617.13**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.90	1.44	6.01	8.93	3.67	1.14
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.86	36.58	152.65	226.82	93.22	28.96
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.09			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.15	2.90	1.91	2.02	2.41	1.51
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.21	73.66	48.51	51.31	61.21	38.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.12	43.65	38.74	47.99	41.93	23.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.71	1.72	1.53	1.89	1.65	0.94
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.44			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			9.58			
L=C-K	annual consumptive use of irrigation water (inches)			12.51			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,189.81**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.25	2.25	4.53	6.77	5.70	3.18
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	31.75	57.15	115.06	171.96	144.78	80.77
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.68			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.15	2.90	1.91	2.02	2.41	1.51
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.21	73.66	48.51	51.31	61.21	38.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.48	45.67	35.66	42.53	46.97	26.64
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.73	1.80	1.40	1.67	1.85	1.05
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.50			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			9.64			
L=C-K	annual consumptive use of irrigation water (inches)			14.04			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,740.84**			

Table 2.1.4.212 Consumptive use of irrigation water, CU_W, calculations - 1997 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.90	2.28	7.81	9.46	6.42	1.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.86	57.91	198.37	240.28	163.07	48.26
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.77			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.15	2.90	1.91	2.02	2.41	1.51
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.21	73.66	48.51	51.31	61.21	38.35
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.12	45.74	42.84	49.43	48.89	24.80
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.71	1.80	1.69	1.95	1.92	0.98
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.05			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			10.19			
L=C-K	annual consumptive use of irrigation water (inches)			18.58			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,410.99**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.51	5.92	6.03	7.92	3.55	2.28
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.21			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.90			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.31			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
G=D+F	total annual effective precipitation (inches)			12.45			
H=B-G	annual consumptive use of irrigation water (inches)			15.76			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**33,797.32**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.79	4.04	7.07	8.25	4.36	3.38
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.89			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.90			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.31			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.14			
G=D+F	total annual effective precipitation (inches)			12.45			
H=B-G	annual consumptive use of irrigation water (inches)			16.44			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**31,753.86**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	2.65	4.96	5.83	4.91	3.51
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.93			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.90			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.31			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.14			
G=D+F	total annual effective precipitation (inches)			12.45			
H=B-G	annual consumptive use of irrigation water (inches)			10.48			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**15,543.59**			
	Total Lower Laramie consumptive use of irrigation water during 1997 (acre-feet)			**106,241**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.213 Consumptive use of irrigation water, CU_W, calculations - 1996 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.46	5.75	8.46	5.18	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	62.48	146.05	214.88	131.57	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.85			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.17	3.37	1.01	0.85	0.45	0.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.72	85.60	25.65	21.59	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.10	63.37	24.35	17.08	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.79	2.49	0.96	0.67	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.91			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.07			
K=H+J	total annual effective precipitation (inches)			6.98			
L=C-K	annual consumptive use of irrigation water (inches)			14.87			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,190.84**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.75	4.00	7.61	5.07	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.45	101.60	193.29	128.78	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.43			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.17	3.37	1.01	0.85	0.45	0.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.72	85.60	25.65	21.59	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.32	57.47	23.23	16.97	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.76	2.26	0.91	0.67	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.60			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.07			
K=H+J	total annual effective precipitation (inches)			6.67			
L=C-K	annual consumptive use of irrigation water (inches)			11.76			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**25.48**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.12	5.06	8.78	6.70	2.33	1.18
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.85	128.52	223.01	170.18	59.18	29.97
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.17			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.17	3.37	1.01	0.85	0.45	0.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.72	85.60	25.65	21.59	11.43	15.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.72	60.98	24.79	18.59	7.26	9.47
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.78	2.40	0.98	0.73	0.29	0.37
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.55			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.07			
K=H+J	total annual effective precipitation (inches)			7.62			
L=C-K	annual consumptive use of irrigation water (inches)			18.55			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,648.17**			

Table 2.1.4.213 Consumptive use of irrigation water, CU_W, calculations - 1996 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.01	4.80	8.33	6.35	2.21	1.12
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	51.05	121.92	211.58	161.29	56.13	28.45
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.82			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.17	3.37	1.01	0.85	0.45	0.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.72	85.60	25.65	21.59	11.43	15.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.60	60.10	24.18	18.23	7.21	9.44
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.77	2.37	0.95	0.72	0.28	0.37
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.46			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.07			
K=H+J	total annual effective precipitation (inches)			7.53			
L=C-K	annual consumptive use of irrigation water (inches)			17.29			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,201.59**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.03	1.17	5.90	8.01	3.58	1.07
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.16	29.72	149.86	203.45	90.93	27.18
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.76			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.17	3.37	1.01	0.85	0.45	0.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.72	85.60	25.65	21.59	11.43	15.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.56	49.07	21.11	20.00	7.79	9.41
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.73	1.93	0.83	0.79	0.31	0.37
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.96			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.07			
K=H+J	total annual effective precipitation (inches)			7.03			
L=C-K	annual consumptive use of irrigation water (inches)			13.73			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,598.41**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.73	2.19	5.32	7.26	6.67	3.57
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.94	55.63	135.13	184.40	169.42	90.68
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.74			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.17	3.37	1.01	0.85	0.45	0.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.72	85.60	25.65	21.59	11.43	15.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.30	51.95	20.44	19.18	9.25	10.82
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.76	2.05	0.80	0.76	0.36	0.43
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.16			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.07			
K=H+J	total annual effective precipitation (inches)			7.23			
L=C-K	annual consumptive use of irrigation water (inches)			19.51			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,587.88**			

Table 2.1.4.213 Consumptive use of irrigation water, CU_W, calculations - 1996 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.03	1.87	7.69	8.52	6.29	1.79
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.16	47.50	195.33	216.41	159.77	45.47
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.19			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.17	3.37	1.01	0.85	0.45	0.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	29.72	85.60	25.65	21.59	11.43	15.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	18.56	51.03	23.33	20.58	9.06	9.80
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.73	2.01	0.92	0.81	0.36	0.39
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.22			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.14			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.07			
K=H+J	total annual effective precipitation (inches)			7.29			
L=C-K	annual consumptive use of irrigation water (inches)			19.90			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,150.63**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.00	5.02	6.16	7.41	3.62	2.22
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.43			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.45			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.14			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.07			
G=D+F	total annual effective precipitation (inches)			9.15			
H=B-G	annual consumptive use of irrigation water (inches)			18.28			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**39,201.46**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.88	3.01	6.35	6.78	3.89	2.89
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.80			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.45			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.14			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.07			
G=D+F	total annual effective precipitation (inches)			9.15			
H=B-G	annual consumptive use of irrigation water (inches)			15.65			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**30,227.98**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.13	1.97	4.45	4.78	4.39	3.01
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.73			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.45			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.08			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.14			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.07			
G=D+F	total annual effective precipitation (inches)			9.15			
H=B-G	annual consumptive use of irrigation water (inches)			10.58			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**15,691.90**			
	Total Lower Laramie consumptive use of irrigation water during 1996 (acre-feet)			**114,524**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.214 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.62	5.94	8.00	5.05	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	66.55	150.88	203.20	128.27	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.61			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.53	1.89	1.68	0.68	1.19	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.46	48.01	42.67	17.27	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.93	38.22	38.49	13.45	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.35	1.50	1.52	0.53	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.90			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.77			
K=H+J	total annual effective precipitation (inches)			5.67			
L=C-K	annual consumptive use of irrigation water (inches)			15.94			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,276.53**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.88	4.13	7.20	4.95	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.75	104.90	182.88	125.73	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.16			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.53	1.89	1.68	0.68	1.19	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.46	48.01	42.67	17.27	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.57	34.55	36.81	13.38	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.34	1.36	1.45	0.53	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.68			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.77			
K=H+J	total annual effective precipitation (inches)			5.45			
L=C-K	annual consumptive use of irrigation water (inches)			12.71			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**27.54**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.13	4.91	7.79	6.13	1.93	1.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	54.10	124.71	197.87	155.70	49.02	27.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.99			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.53	1.89	1.68	0.68	1.19	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.46	48.01	42.67	17.27	30.23	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.69	36.09	38.04	14.29	19.84	11.96
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.34	1.42	1.50	0.56	0.78	0.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.07			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.77			
K=H+J	total annual effective precipitation (inches)			6.84			
L=C-K	annual consumptive use of irrigation water (inches)			17.15			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,372.83**			

Table 2.1.4.214 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.40	5.52	8.76	6.90	2.17	1.24
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	60.96	140.21	222.50	175.26	55.12	31.50
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.99			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.53	1.89	1.68	0.68	1.19	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.46	48.01	42.67	17.27	30.23	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.82	37.34	40.16	14.91	20.10	12.05
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.35	1.47	1.58	0.59	0.79	0.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.25			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.77			
K=H+J	total annual effective precipitation (inches)			7.02			
L=C-K	annual consumptive use of irrigation water (inches)			19.97			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,542.85**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.18	1.30	6.00	8.42	3.41	1.14
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.97	33.02	152.40	213.87	86.61	28.96
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.45			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.53	1.89	1.68	0.68	1.19	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.46	48.01	42.67	17.27	30.23	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.24	29.50	34.42	16.24	21.55	11.99
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.32	1.16	1.36	0.64	0.85	0.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.80			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.77			
K=H+J	total annual effective precipitation (inches)			6.57			
L=C-K	annual consumptive use of irrigation water (inches)			14.88			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,983.56**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.15	2.63	5.85	8.26	6.85	4.14
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	54.61	66.80	148.59	209.80	173.99	105.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.88			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.53	1.89	1.68	0.68	1.19	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.46	48.01	42.67	17.27	30.23	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.70	31.77	34.14	16.09	26.11	14.17
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.34	1.25	1.34	0.63	1.03	0.56
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.15			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.77			
K=H+J	total annual effective precipitation (inches)			6.92			
L=C-K	annual consumptive use of irrigation water (inches)			22.96			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,752.83**			

Table 2.1.4.214 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.22	2.14	8.08	9.26	6.18	1.97
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.99	54.36	205.23	235.20	156.97	50.04
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.85			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.53	1.89	1.68	0.68	1.19	0.75
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.46	48.01	42.67	17.27	30.23	19.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.26	30.91	38.66	17.02	25.15	12.55
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.33	1.22	1.52	0.67	0.99	0.49
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.22			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.77			
K=H+J	total annual effective precipitation (inches)			6.99			
L=C-K	annual consumptive use of irrigation water (inches)			21.86			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**12,248.89**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.15	5.08	5.71	7.09	3.13	2.17
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.33			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.72			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.38			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.77			
G=D+F	total annual effective precipitation (inches)			8.15			
H=B-G	annual consumptive use of irrigation water (inches)			18.18			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**38,987.01**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.14	3.30	6.37	7.03	3.65	3.05
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.54			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.72			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.38			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.77			
G=D+F	total annual effective precipitation (inches)			8.15			
H=B-G	annual consumptive use of irrigation water (inches)			17.39			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**33,588.79**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.28	2.16	4.47	4.96	4.12	3.18
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.17			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.72			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.38			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.53			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.77			
G=D+F	total annual effective precipitation (inches)			8.15			
H=B-G	annual consumptive use of irrigation water (inches)			12.02			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,827.66**			
	Total Lower Laramie consumptive use of irrigation water during 1987 (acre-feet)			**122,608**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.215 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.32	5.63	7.26	5.51	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	58.93	143.00	184.40	139.95	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.72			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.89	3.45	1.65	2.21	2.16	4.61
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.61	87.63	41.91	56.13	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.25	64.26	36.32	42.99	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.60	2.53	1.43	1.69	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.25			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.89			
K=H+J	total annual effective precipitation (inches)			7.14			
L=C-K	annual consumptive use of irrigation water (inches)			13.58			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,087.53**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.89	4.46	7.45	6.15	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.01	113.28	189.23	156.21	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.95			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.89	3.45	1.65	2.21	2.16	4.61
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.61	87.63	41.91	56.13	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.89	60.19	36.71	44.56	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	2.37	1.45	1.75	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.16			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.89			
K=H+J	total annual effective precipitation (inches)			7.05			
L=C-K	annual consumptive use of irrigation water (inches)			12.90			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**27.95**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.01	4.95	7.53	7.14	2.33	1.06
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	51.05	125.73	191.26	181.36	59.18	26.92
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.02			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.89	3.45	1.65	2.21	2.16	4.61
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.61	87.63	41.91	56.13	54.86	117.09
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.99	61.86	36.88	47.09	35.26	64.05
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	2.44	1.45	1.85	1.39	2.52
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.24			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.89			
K=H+J	total annual effective precipitation (inches)			11.13			
L=C-K	annual consumptive use of irrigation water (inches)			13.89			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,731.70**			

Table 2.1.4.215 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.01	4.95	7.53	7.14	2.33	1.06
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	51.05	125.73	191.26	181.36	59.18	26.92
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.02			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.89	3.45	1.65	2.21	2.16	4.61
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.61	87.63	41.91	56.13	54.86	117.09
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.99	61.86	36.88	47.09	35.26	64.05
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	2.44	1.45	1.85	1.39	2.52
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.24			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.89			
K=H+J	total annual effective precipitation (inches)			11.13			
L=C-K	annual consumptive use of irrigation water (inches)			13.89			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,768.66**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	1.18	5.18	8.75	3.67	0.98
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.40	29.97	131.57	222.25	93.22	24.89
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.76			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.89	3.45	1.65	2.21	2.16	4.61
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.61	87.63	41.91	56.13	54.86	117.09
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.16	50.12	32.34	51.52	38.00	63.76
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.56	1.97	1.27	2.03	1.50	2.51
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.84			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.89			
K=H+J	total annual effective precipitation (inches)			10.73			
L=C-K	annual consumptive use of irrigation water (inches)			10.03			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,359.21**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.85	2.43	5.17	8.79	7.56	3.66
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.99	61.72	131.32	223.27	192.02	92.96
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.46			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.89	3.45	1.65	2.21	2.16	4.61
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.61	87.63	41.91	56.13	54.86	117.09
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.85	53.74	32.32	51.64	47.22	74.06
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.58	2.12	1.27	2.03	1.86	2.92
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.78			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.89			
K=H+J	total annual effective precipitation (inches)			11.67			
L=C-K	annual consumptive use of irrigation water (inches)			17.79			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,007.09**			

Table 2.1.4.215 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.08	2.01	7.27	10.01	6.93	1.77
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.43	51.05	184.66	254.25	176.02	44.96
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.07			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.89	3.45	1.65	2.21	2.16	4.61
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.61	87.63	41.91	56.13	54.86	117.09
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.23	52.49	36.35	55.28	45.59	66.64
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.56	2.07	1.43	2.18	1.79	2.62
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.65			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.89			
K=H+J	total annual effective precipitation (inches)			11.54			
L=C-K	annual consumptive use of irrigation water (inches)			17.53			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,822.64**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.56	4.44	4.77	7.13	3.26	1.81
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.97			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			14.97			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			14.22			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.78			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.89			
G=D+F	total annual effective precipitation (inches)			15.11			
H=B-G	annual consumptive use of irrigation water (inches)			8.86			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**19,000.27**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.79	2.97	5.48	7.27	3.92	2.62
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.05			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			14.97			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			14.22			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.78			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.89			
G=D+F	total annual effective precipitation (inches)			15.11			
H=B-G	annual consumptive use of irrigation water (inches)			8.94			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,267.61**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	1.95	3.84	5.14	4.42	2.73
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.15			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			14.97			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			14.22			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.78			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.89			
G=D+F	total annual effective precipitation (inches)			15.11			
H=B-G	annual consumptive use of irrigation water (inches)			4.04			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,991.99**			
	Total Lower Laramie consumptive use of irrigation water during 1982 (acre-feet)			**67,065**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.216 Consumptive use of irrigation water, CU_W, calculations - 1998 - normal or average stream flow year - Lower Laramie subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.27	6.35	7.04	5.26	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	57.66	161.29	178.82	133.60	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.92			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.43	2.91	2.50	2.35	3.25	0.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.32	73.91	63.50	59.69	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	24.06	57.59	52.30	44.80	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.95	2.27	2.06	1.76	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.04			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.06			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.03			
K=H+J	total annual effective precipitation (inches)			9.07			
L=C-K	annual consumptive use of irrigation water (inches)			11.85			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**948.99**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)						
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)			Not cultivated			
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)						
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)						
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)						
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)						
H	calculated effective precipitation, Re, Apr-Sep (inches)						
I	average total precipitation, R_t, Oct - Mar (inches) (2)						
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)						
K=H+J	total annual effective precipitation (inches)						
L=C-K	annual consumptive use of irrigation water (inches)						
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)						
N	**consumptive use of irrigation water (acre-feet per irrigation season)**						
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.97	5.59	7.30	6.80	2.24	1.30
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.04	141.99	185.42	172.72	56.90	33.02
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.20			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.43	2.91	2.50	2.35	3.25	0.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.32	73.91	63.50	59.69	82.55	17.78
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.66	55.20	53.07	48.83	50.46	11.25
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.93	2.17	2.09	1.92	1.99	0.44
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.54			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.06			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.03			
K=H+J	total annual effective precipitation (inches)			11.57			
L=C-K	annual consumptive use of irrigation water (inches)			13.63			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,680.57**			

Table 2.1.4.216 Consumptive use of irrigation water, CU_W, calculations - 1998 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.44	4.09	5.34	4.97	1.64	0.95
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.58	103.89	135.64	126.24	41.66	24.13
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.43			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.43	2.91	2.50	2.35	3.25	0.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.32	73.91	63.50	59.69	82.55	17.78
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.97	50.76	47.57	44.09	48.80	11.03
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.90	2.00	1.87	1.74	1.92	0.43
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.86			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.06			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.03			
K=H+J	total annual effective precipitation (inches)			10.89			
L=C-K	annual consumptive use of irrigation water (inches)			7.54			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**960.09**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	1.43	5.43	9.01	3.81	1.30
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.67	36.32	137.92	228.85	96.77	33.02
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.03			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.43	2.91	2.50	2.35	3.25	0.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.32	73.91	63.50	59.69	82.55	17.78
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.48	43.75	47.81	55.24	55.08	11.25
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.89	1.72	1.88	2.17	2.17	0.44
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.27			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.06			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.03			
K=H+J	total annual effective precipitation (inches)			11.30			
L=C-K	annual consumptive use of irrigation water (inches)			10.73			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,593.66**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.57	2.39	4.36	7.28	6.32	3.89
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.88	60.71	110.74	184.91	160.53	98.81
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.81			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.43	2.91	2.50	2.35	3.25	0.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.32	73.91	63.50	59.69	82.55	17.78
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	23.14	46.16	45.03	50.16	63.37	13.00
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.91	1.82	1.77	1.97	2.49	0.51
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.47			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.06			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.03			
K=H+J	total annual effective precipitation (inches)			11.50			
L=C-K	annual consumptive use of irrigation water (inches)			14.31			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,832.01**			

Table 2.1.4.216 Consumptive use of irrigation water, CU_W, calculations - 1998 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	2.27	7.05	9.55	6.67	2.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.67	57.66	179.07	242.57	169.42	55.12
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.76			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.43	2.91	2.50	2.35	3.25	0.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	36.32	73.91	63.50	59.69	82.55	17.78
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.48	45.85	52.33	56.94	64.63	11.81
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.89	1.81	2.06	2.24	2.54	0.46
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.00			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.06			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.03			
K=H+J	total annual effective precipitation (inches)			12.03			
L=C-K	annual consumptive use of irrigation water (inches)			16.73			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,374.38**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.95	5.89	5.44	7.99	3.69	2.61
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.57			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.14			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.48			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.06			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.03			
G=D+F	total annual effective precipitation (inches)			14.51			
H=B-G	annual consumptive use of irrigation water (inches)			14.06			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**30,151.67**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.62	3.08	4.90	6.39	3.48	2.97
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.44			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.14			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.48			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.06			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.03			
G=D+F	total annual effective precipitation (inches)			14.51			
H=B-G	annual consumptive use of irrigation water (inches)			7.93			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**15,316.80**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	2.03	3.43	4.51	3.91	3.08
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.93			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.14			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.48			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.06			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.03			
G=D+F	total annual effective precipitation (inches)			14.51			
H=B-G	annual consumptive use of irrigation water (inches)			3.42			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,072.43**			
	Total Lower Laramie consumptive use of irrigation water during 1998 (acre-feet)			**72,931**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.217 Consumptive use of irrigation water, CU_W, calculations - 1981 - normal or average stream flow year - Lower Laramie subbasin

	Crop							
winter wheat		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.50	5.00	8.22	5.05	--	--	
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	63.50	127.00	208.79	128.27	--	--	
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.77				
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.96	4.09	0.63	3.29	1.32	0.35	
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.38	103.89	16.00	83.57	--	--	
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.61	71.96	14.79	59.67	--	--	
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.65	2.83	0.58	2.35	--	--	
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.41				
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.86				
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.43				
K=H+J	total annual effective precipitation (inches)			7.84				
L=C-K	annual consumptive use of irrigation water (inches)			12.93				
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			961				
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,035.48**				
spring wheat		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.89	3.69	7.84	5.24	--	--	
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.01	93.73	199.14	133.10	--	--	
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.66				
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.96	4.09	0.63	3.29	1.32	0.35	
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.38	103.89	16.00	83.57	--	--	
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.05	66.88	14.48	60.31	--	--	
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.63	2.63	0.57	2.37	--	--	
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.20				
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.86				
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.43				
K=H+J	total annual effective precipitation (inches)			7.63				
L=C-K	annual consumptive use of irrigation water (inches)			11.03				
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			26				
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**23.90**				
barley		Apr	May	Jun	Jul	Aug	Sep	
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.11	4.31	8.33	6.40	2.06	1.19	
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.59	109.47	211.58	162.56	52.32	30.23	
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.40				
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.96	4.09	0.63	3.29	1.32	0.35	
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.38	103.89	16.00	83.57	33.53	8.89	
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.25	69.24	14.88	64.35	22.05	4.95	
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	2.73	0.59	2.53	0.87	0.19	
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.55				
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.86				
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.43				
K=H+J	total annual effective precipitation (inches)			8.98				
L=C-K	annual consumptive use of irrigation water (inches)			15.42				
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,360				
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,032.60**				

Table 2.1.4.217 Consumptive use of irrigation water, CU_W, calculations - 1981 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.22	4.52	8.75	6.71	2.16	1.25
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	56.39	114.81	222.25	170.43	54.86	31.75
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.61			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.96	4.09	0.63	3.29	1.32	0.35
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.38	103.89	16.00	83.57	33.53	8.89
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.35	70.05	15.24	65.47	22.18	4.97
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	2.76	0.60	2.58	0.87	0.20
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.65			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.86			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.43			
K=H+J	total annual effective precipitation (inches)			9.08			
L=C-K	annual consumptive use of irrigation water (inches)			16.53			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			1,528			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,104.82**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.24	1.21	6.78	9.26	3.83	1.30
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	31.50	30.73	172.21	235.20	97.28	33.02
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.62			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.96	4.09	0.63	3.29	1.32	0.35
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.38	103.89	16.00	83.57	33.53	8.89
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.48	58.23	13.65	75.49	24.35	4.98
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.61	2.29	0.54	2.97	0.96	0.20
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.57			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.86			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.43			
K=H+J	total annual effective precipitation (inches)			9.00			
L=C-K	annual consumptive use of irrigation water (inches)			14.62			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,019			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,896.48**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.12	2.31	6.26	8.61	7.30	4.47
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.85	58.67	159.00	218.69	185.42	113.54
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.07			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.96	4.09	0.63	3.29	1.32	0.35
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.38	103.89	16.00	83.57	33.53	8.89
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.26	61.92	13.26	72.80	29.55	5.95
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	2.44	0.52	2.87	1.16	0.23
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.86			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.86			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.43			
K=H+J	total annual effective precipitation (inches)			9.29			
L=C-K	annual consumptive use of irrigation water (inches)			21.78			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			4,052			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,354.38**			

Table 2.1.4.217 Consumptive use of irrigation water, CU_W, calculations - 1981 - normal or average stream flow year - Lower Laramie subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.24	1.91	8.80	9.81	6.70	2.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	31.50	48.51	223.52	249.17	170.18	55.12
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.63			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.96	4.09	0.63	3.29	1.32	0.35
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.38	103.89	16.00	83.57	33.53	8.89
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.48	60.55	15.28	77.85	28.58	5.23
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.61	2.38	0.60	3.06	1.13	0.21
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.99			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.86			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.43			
K=H+J	total annual effective precipitation (inches)			9.42			
L=C-K	annual consumptive use of irrigation water (inches)			21.21			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			6,724			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,884.67**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.34	4.79	6.56	7.93	3.58	2.52
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.72			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.64			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.11			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.86			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.43			
G=D+F	total annual effective precipitation (inches)			11.54			
H=B-G	annual consumptive use of irrigation water (inches)			17.18			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			25,734			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**36,842.51**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.47	3.38	7.97	8.56	4.55	3.86
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.79			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.64			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.11			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.86			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.43			
G=D+F	total annual effective precipitation (inches)			11.54			
H=B-G	annual consumptive use of irrigation water (inches)			19.25			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			23,178			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**37,181.38**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.48	2.22	5.58	6.04	5.13	4.01
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.46			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.64			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.11			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.86			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.43			
G=D+F	total annual effective precipitation (inches)			11.54			
H=B-G	annual consumptive use of irrigation water (inches)			12.92			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			17,798			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**19,162.51**			
	Total Lower Laramie consumptive use of irrigation water during 1981 (acre-feet)			**123,519**			

Notes:
(1) See Table 2.1.4.78.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.218 Summary – consumptive use of irrigation water - Lower Laramie subbasin

No.	Year	Consumptive use of irrigation water (acre-feet)		
1	1983	104,196	**High stream flow years:**	
2	1984	100,776	**Average:**	**102,486**
3	1995	53,643		
4	1986	117,140		
5	1980	146,091		
6	1999	78,910		
7	1991	72,681		
8	2000	97,424		
9	1993	79,547		
10	2001	115,313		
11	1985	127,059		
12	1988	143,391		
13	1997	106,241		
14	1996	114,524	**Normal or average stream flow**	
15	1987	122,608	**years:**	
16	1982	67,065	**Average:**	**102,380**
17	1998	72,931	**Maximum:**	**146,091**
18	1981	123,519	**Minimum:**	**53,643**
19	1990	111,372	**Low stream flow years:**	
20	1994	105,129	**Average:**	**102,937**
21	1992	87,369	**Maximum:**	**111,372**
22	1989	107,877	**Minimum:**	**87,369**
	Average:	**102,491**		
	Maximum:	**146,091**		
	Minimum:	**53,643**		
		designates high flow year and flow volume		
		designates low flow year and flow volume		
Years which are neither shaded or outlined are normal or average stream flow years				
See Table 3.1.1.5. in Technical Memorandum 3.1., Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year Determination				

2.1.4.9.6 Consumptive Use of Irrigation Water – Horse Creek Subbasin

Table 2.1.4.219 through Table 2.1.4.239 contain unit and annual consumptive use calculation parameters and results for all crops under consideration during each high, low, and normal or average stream flow year in the Horse Creek subbasin. Annual consumptive use values for the Horse Creek subbasin are summarized in Table 2.1.4.240.

Table 2.1.4.219 Consumptive use of irrigation water, CU_W, calculations - 1986 - high stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.20	6.06	8.56	5.36	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	55.88	153.92	217.42	136.14	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.18			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	4.49	1.56	4.05	1.25	0.43	1.21
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	114.05	39.62	102.87	31.75	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	66.72	32.25	87.04	25.18	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.63	1.27	3.43	0.99	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.32			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			10.48			
L=C-K	annual consumptive use of irrigation water (inches)			11.70			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,434.23**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.80	4.80	8.78	5.98	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.72	121.92	223.01	151.89	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.36			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	4.49	1.56	4.05	1.25	0.43	1.21
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	114.05	39.62	102.87	31.75	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	65.25	30.06	88.11	26.07	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.57	1.18	3.47	1.03	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.25			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			10.41			
L=C-K	annual consumptive use of irrigation water (inches)			10.95			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**113.15**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.91	5.33	8.88	6.94	2.28	1.02
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.51	135.38	225.55	176.28	57.91	25.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.36			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	4.49	1.56	4.05	1.25	0.43	1.21
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	114.05	39.62	102.87	31.75	10.92	30.73
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	65.65	30.96	88.61	27.50	6.85	19.15
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.58	1.22	3.49	1.08	0.27	0.75
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.39			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			11.55			
L=C-K	annual consumptive use of irrigation water (inches)			14.81			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,946.28**			

Table 2.1.4.219 Consumptive use of irrigation water, CU_W, calculations - 1986 - high stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.88	5.25	8.75	6.84	2.25	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.75	133.35	222.25	173.74	57.15	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.98			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	4.49	1.56	4.05	1.25	0.43	1.21
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	114.05	39.62	102.87	31.75	10.92	30.73
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	65.54	30.82	87.97	27.35	6.84	19.14
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.58	1.21	3.46	1.08	0.27	0.75
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			11.51			
L=C-K	annual consumptive use of irrigation water (inches)			14.47			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**876.64**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.98	1.32	6.34	8.83	3.73	0.98
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.89	33.53	161.04	224.28	94.74	24.89
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.18			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	4.49	1.56	4.05	1.25	0.43	1.21
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	114.05	39.62	102.87	31.75	10.92	30.73
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	62.33	24.75	76.89	30.56	7.43	19.11
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.45	0.97	3.03	1.20	0.29	0.75
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.69			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			10.85			
L=C-K	annual consumptive use of irrigation water (inches)			11.33			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,178.88**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.75	2.62	6.10	8.55	7.40	3.52
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.45	66.55	154.94	217.17	187.96	89.41
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.94			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	4.49	1.56	4.05	1.25	0.43	1.21
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	114.05	39.62	102.87	31.75	10.92	30.73
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	65.07	26.61	75.86	30.09	9.12	22.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.56	1.05	2.99	1.18	0.36	0.87
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.01			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			11.17			
L=C-K	annual consumptive use of irrigation water (inches)			18.77			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,562.25**			

Table 2.1.4.219 Consumptive use of irrigation water, CU_W, calculations - 1986 - high stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.02	2.17	8.57	9.74	6.79	1.71
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.91	55.12	217.68	247.40	172.47	43.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.00			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	4.49	1.56	4.05	1.25	0.43	1.21
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	114.05	39.62	102.87	31.75	10.92	30.73
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	62.47	25.95	87.09	32.16	8.81	19.90
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.46	1.02	3.43	1.27	0.35	0.78
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.31			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
K=H+J	total annual effective precipitation (inches)			11.47			
L=C-K	annual consumptive use of irrigation water (inches)			18.53			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,822.77**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.86	5.62	6.61	8.15	3.76	2.05
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.05			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.99			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.34			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.16			
G=D+F	total annual effective precipitation (inches)			14.50			
H=B-G	annual consumptive use of irrigation water (inches)			14.55			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**20,140.84**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.04	3.83	7.76	8.49	4.61	3.03
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.76			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.99			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.34			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.16			
G=D+F	total annual effective precipitation (inches)			14.50			
H=B-G	annual consumptive use of irrigation water (inches)			15.26			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,064.77**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.22	2.52	5.44	6.00	5.20	3.16
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.54			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.99			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.34			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.16			
G=D+F	total annual effective precipitation (inches)			14.50			
H=B-G	annual consumptive use of irrigation water (inches)			9.04			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,680.56**			
	Total Horse Creek consumptive use of irrigation water during 1986 (acre-feet)			**72,820**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.220 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.76	6.64	7.91	5.24	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.70	168.66	200.91	133.10	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.55			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	4.32	0.93	3.47	3.36	0.51	2.48
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	109.73	23.62	88.14	85.34	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	62.96	20.28	73.35	61.43	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.48	0.80	2.89	2.42	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.59			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			11.46			
L=C-K	annual consumptive use of irrigation water (inches)			10.09			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,236.87**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.43	5.26	8.12	5.85	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.32	133.60	206.25	148.59	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.66			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	4.32	0.93	3.47	3.36	0.51	2.48
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	109.73	23.62	88.14	85.34	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	61.81	18.77	74.22	63.56	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.43	0.74	2.92	2.50	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.59			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			11.46			
L=C-K	annual consumptive use of irrigation water (inches)			9.20			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**95.07**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.52	5.84	8.21	6.79	2.28	1.06
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.61	148.34	208.53	172.47	57.91	26.92
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.70			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	4.32	0.93	3.47	3.36	0.51	2.48
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	109.73	23.62	88.14	85.34	12.95	62.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	62.13	19.39	74.59	66.99	8.39	37.18
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.45	0.76	2.94	2.64	0.33	1.46
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.58			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			13.45			
L=C-K	annual consumptive use of irrigation water (inches)			12.25			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,609.85**			

Table 2.1.4.220 Consumptive use of irrigation water, CU_w, calculations - 1984 - high stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.35	5.18	7.29	6.03	2.02	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.29	131.57	185.17	153.16	51.31	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.81			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	4.32	0.93	3.47	3.36	0.51	2.48
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	109.73	23.62	88.14	85.34	12.95	62.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	61.54	18.69	70.86	64.20	8.27	36.94
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.42	0.74	2.79	2.53	0.33	1.45
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.26			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			13.13			
L=C-K	annual consumptive use of irrigation water (inches)			9.68			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**586.45**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.82	1.50	6.10	8.99	3.89	1.06
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.83	38.10	154.94	228.35	98.81	26.92
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.36			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	4.32	0.93	3.47	3.36	0.51	2.48
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	109.73	23.62	88.14	85.34	12.95	62.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	59.74	15.22	66.30	75.74	9.18	37.18
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.35	0.60	2.61	2.98	0.36	1.46
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.36			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			13.23			
L=C-K	annual consumptive use of irrigation water (inches)			9.13			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,367.45**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.27	2.61	5.13	7.61	6.74	3.32
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.26	66.29	130.30	193.29	171.20	84.33
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.68			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	4.32	0.93	3.47	3.36	0.51	2.48
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	109.73	23.62	88.14	85.34	12.95	62.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	61.26	16.19	62.80	70.12	10.76	42.19
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.41	0.64	2.47	2.76	0.42	1.66
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.36			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			13.23			
L=C-K	annual consumptive use of irrigation water (inches)			13.45			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,135.44**			

Table 2.1.4.220 Consumptive use of irrigation water, CU_w, calculations - 1984 - high stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.79	2.29	7.67	9.21	6.58	1.71
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.07	58.17	194.82	233.93	167.13	43.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.25			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	4.32	0.93	3.47	3.36	0.51	2.48
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	109.73	23.62	88.14	85.34	12.95	62.99
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	59.64	15.90	72.38	76.68	10.66	38.56
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.35	0.63	2.85	3.02	0.42	1.52
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.79			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
K=H+J	total annual effective precipitation (inches)			13.66			
L=C-K	annual consumptive use of irrigation water (inches)			14.59			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,033.15**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.20	5.91	5.88	7.65	3.61	2.04
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.29			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			15.07			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			14.32			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.87			
G=D+F	total annual effective precipitation (inches)			17.19			
H=B-G	annual consumptive use of irrigation water (inches)			10.10			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,980.93**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.63	4.20	7.18	8.31	4.62	3.15
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.09			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			15.07			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			14.32			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.87			
G=D+F	total annual effective precipitation (inches)			17.19			
H=B-G	annual consumptive use of irrigation water (inches)			11.90			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,628.49**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.98	2.76	5.03	5.87	5.20	3.27
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.11			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			15.07			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			14.32			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.73			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.87			
G=D+F	total annual effective precipitation (inches)			17.19			
H=B-G	annual consumptive use of irrigation water (inches)			5.92			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,374.88**			
	Total Horse Creek consumptive use of irrigation water during 1984 (acre-feet)			**54,049**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.221 Consumptive use of irrigation water, CU_W, calculations - 1985 - high stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.98	5.32	6.32	4.17	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.29	135.13	160.53	105.92	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.79			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.27	2.99	4.09	1.38	0.50	2.82
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.26	75.95	103.89	35.05	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.17	55.69	77.46	25.87	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.83	2.19	3.05	1.02	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.09			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.64			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.32			
K=H+J	total annual effective precipitation (inches)			8.41			
L=C-K	annual consumptive use of irrigation water (inches)			9.38			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,149.83**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.68	4.39	6.75	4.85	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.67	111.51	171.45	123.19	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.67			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.27	2.99	4.09	1.38	0.50	2.82
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.26	75.95	103.89	35.05	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.81	52.87	79.35	26.88	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.82	2.08	3.12	1.06	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.08			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.64			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.32			
K=H+J	total annual effective precipitation (inches)			8.40			
L=C-K	annual consumptive use of irrigation water (inches)			9.27			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**95.79**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.20	6.01	8.41	6.93	2.34	1.05
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	55.88	152.65	213.61	176.02	59.44	26.67
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.94			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.27	2.99	4.09	1.38	0.50	2.82
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.26	75.95	103.89	35.05	12.70	71.63
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.43	57.88	87.05	30.19	8.23	41.66
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.84	2.28	3.43	1.19	0.32	1.64
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.70			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.64			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.32			
K=H+J	total annual effective precipitation (inches)			11.02			
L=C-K	annual consumptive use of irrigation water (inches)			15.92			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,092.15**			

Table 2.1.4.221 Consumptive use of irrigation water, CU_w, calculations - 1985 - high stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.02	5.51	7.72	6.36	2.15	0.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	51.31	139.95	196.09	161.54	54.61	24.38
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.72			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.27	2.99	4.09	1.38	0.50	2.82
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.26	75.95	103.89	35.05	12.70	71.63
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.21	56.29	83.76	29.24	8.14	41.45
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.84	2.22	3.30	1.15	0.32	1.63
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.46			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.64			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.32			
K=H+J	total annual effective precipitation (inches)			10.78			
L=C-K	annual consumptive use of irrigation water (inches)			13.94			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**844.53**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.17	1.52	6.18	9.08	3.95	1.04
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.72	38.61	156.97	230.63	100.33	26.42
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.94			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.27	2.99	4.09	1.38	0.50	2.82
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.26	75.95	103.89	35.05	12.70	71.63
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.23	45.04	76.86	34.04	9.00	41.64
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.80	1.77	3.03	1.34	0.35	1.64
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.93			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.64			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.32			
K=H+J	total annual effective precipitation (inches)			10.25			
L=C-K	annual consumptive use of irrigation water (inches)			12.69			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,680.50**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.03	2.95	5.78	8.54	7.60	3.59
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	51.56	74.93	146.81	216.92	193.04	91.19
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.49			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.27	2.99	4.09	1.38	0.50	2.82
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.26	75.95	103.89	35.05	12.70	71.63
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.23	48.79	75.16	33.03	11.04	48.01
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.84	1.92	2.96	1.30	0.43	1.89
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.34			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.64			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.32			
K=H+J	total annual effective precipitation (inches)			10.66			
L=C-K	annual consumptive use of irrigation water (inches)			19.83			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,045.79**			

Table 2.1.4.221 Consumptive use of irrigation water, CU_w, calculations - 1985 - high stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.09	2.24	7.47	8.94	6.41	1.60
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.69	56.90	189.74	227.08	162.81	40.64
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.75			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.27	2.99	4.09	1.38	0.50	2.82
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	32.26	75.95	103.89	35.05	12.70	71.63
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.14	46.89	82.60	33.77	10.33	42.96
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.79	1.85	3.25	1.33	0.41	1.69
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.32			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.64			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.32			
K=H+J	total annual effective precipitation (inches)			10.64			
L=C-K	annual consumptive use of irrigation water (inches)			17.11			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**16,456.97**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.55	4.89	4.85	6.29	2.98	1.62
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.18			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.05			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.40			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.64			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.32			
G=D+F	total annual effective precipitation (inches)			13.72			
H=B-G	annual consumptive use of irrigation water (inches)			9.46			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,095.01**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.12	3.89	6.62	7.63	4.26	2.79
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.31			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.05			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.40			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.64			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.32			
G=D+F	total annual effective precipitation (inches)			13.72			
H=B-G	annual consumptive use of irrigation water (inches)			13.59			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,853.88**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.27	2.56	4.64	5.39	4.80	2.91
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.57			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.05			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.40			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.64			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.32			
G=D+F	total annual effective precipitation (inches)			13.72			
H=B-G	annual consumptive use of irrigation water (inches)			7.85			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,801.15**			
	Total Horse Creek consumptive use of irrigation water during 1985 (acre-feet)			**63,116**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.222 Consumptive use of irrigation water, CU_W, calculations - 1973 - high stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inchesper month) (1)	1.78	5.92	8.17	4.96	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.21	150.37	207.52	125.98	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.83			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.73	1.14	0.54	4.08	0.18	4.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	28.96	13.72	103.63	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.94	23.79	12.45	71.64	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.10	0.94	0.49	2.82	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.94			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.97			
K=H+J	total annual effective precipitation (inches)			8.32			
L=C-K	annual consumptive use of irrigation water (inches)			12.51			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,533.52**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.37	4.42	7.89	5.22	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.80	112.27	200.41	132.59	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.90			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.73	1.14	0.54	4.08	0.18	4.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	28.96	13.72	103.63	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.31	21.87	12.25	72.69	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.08	0.86	0.48	2.86	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.28			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.94			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.97			
K=H+J	total annual effective precipitation (inches)			8.25			
L=C-K	annual consumptive use of irrigation water (inches)			10.65			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**110.05**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.51	5.11	8.30	6.29	2.34	0.95
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.35	129.79	210.82	159.77	59.44	24.13
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.50			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.73	1.14	0.54	4.08	0.18	4.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	28.96	13.72	103.63	4.57	116.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.52	22.73	12.54	77.17	1.64	63.54
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.08	0.89	0.49	3.04	0.06	2.50
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.06			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.94			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.97			
K=H+J	total annual effective precipitation (inches)			11.03			
L=C-K	annual consumptive use of irrigation water (inches)			13.47			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,770.18**			

Table 2.1.4.222 Consumptive use of irrigation water, CU_w, calculations - 1973 - high stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.54	5.21	8.47	6.42	2.39	0.97
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.12	132.33	215.14	163.07	60.71	24.64
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.00			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.73	1.14	0.54	4.08	0.18	4.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	28.96	13.72	103.63	4.57	116.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.57	22.86	12.66	77.73	1.65	63.61
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.09	0.90	0.50	3.06	0.06	2.50
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.11			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.94			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.97			
K=H+J	total annual effective precipitation (inches)			11.08			
L=C-K	annual consumptive use of irrigation water (inches)			13.92			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**843.32**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.79	1.29	6.10	8.24	3.94	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.07	32.77	154.94	209.30	100.08	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.30			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.73	1.14	0.54	4.08	0.18	4.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	28.96	13.72	103.63	4.57	116.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.44	18.37	11.09	86.05	1.80	63.50
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.04	0.72	0.44	3.39	0.07	2.50
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.16			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.94			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.97			
K=H+J	total annual effective precipitation (inches)			11.13			
L=C-K	annual consumptive use of irrigation water (inches)			10.17			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,751.04**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.31	2.38	5.41	7.35	7.21	3.11
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.27	60.45	137.41	186.69	183.13	78.99
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.77			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.73	1.14	0.54	4.08	0.18	4.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	28.96	13.72	103.63	4.57	116.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.21	19.52	10.67	81.87	2.16	71.68
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.07	0.77	0.42	3.22	0.09	2.82
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.39			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.94			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.97			
K=H+J	total annual effective precipitation (inches)			11.36			
L=C-K	annual consumptive use of irrigation water (inches)			15.41			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,029.53**			

Table 2.1.4.222 Consumptive use of irrigation water, CU_w, calculations - 1973 - high stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.82	2.12	8.18	9.01	7.11	1.62
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.83	53.85	207.77	228.85	180.59	41.15
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.86			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.73	1.14	0.54	4.08	0.18	4.60
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	28.96	13.72	103.63	4.57	116.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.48	19.24	12.45	89.83	2.15	65.96
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.04	0.76	0.49	3.54	0.08	2.60
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.51			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.94			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.97			
K=H+J	total annual effective precipitation (inches)			11.48			
L=C-K	annual consumptive use of irrigation water (inches)			17.38			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**16,716.66**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.24	5.32	6.12	7.32	3.81	1.89
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.70			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.27			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.66			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.94			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.97			
G=D+F	total annual effective precipitation (inches)			14.63			
H=B-G	annual consumptive use of irrigation water (inches)			12.07			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**16,707.90**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.55	3.52	6.98	7.40	4.55	2.72
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.72			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.27			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.66			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.94			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.97			
G=D+F	total annual effective precipitation (inches)			14.63			
H=B-G	annual consumptive use of irrigation water (inches)			12.09			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,766.26**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.93	2.32	4.89	5.22	5.12	2.82
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.30			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.27			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.66			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.94			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.97			
G=D+F	total annual effective precipitation (inches)			14.63			
H=B-G	annual consumptive use of irrigation water (inches)			6.67			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,929.13**			
	Total Horse Creek consumptive use of irrigation water during 1973 (acre-feet)			**62,158**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.223 Consumptive use of irrigation water, CU_W, calculations - 1972 - low stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.10	5.97	7.92	4.97	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.34	151.64	201.17	126.24	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.96			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.34	1.13	2.50	1.53	2.20	0.73
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	84.84	28.70	63.50	38.86	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	51.28	23.64	54.94	29.80	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	2.02	0.93	2.16	1.17	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.28			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.68			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			7.62			
L=C-K	annual consumptive use of irrigation water (inches)			13.34			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,635.26**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.71	4.73	8.13	5.55	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.43	120.14	206.50	140.97	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.12			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.34	1.13	2.50	1.53	2.20	0.73
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	84.84	28.70	63.50	38.86	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	50.18	22.06	55.59	30.78	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.98	0.87	2.19	1.21	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.25			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.68			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			7.59			
L=C-K	annual consumptive use of irrigation water (inches)			12.53			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**129.48**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.82	5.26	8.22	6.44	2.17	1.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.23	133.60	208.79	163.58	55.12	29.72
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.08			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.34	1.13	2.50	1.53	2.20	0.73
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	84.84	28.70	63.50	38.86	55.88	18.54
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	50.49	22.73	55.87	32.35	35.53	11.67
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.99	0.89	2.20	1.27	1.40	0.46
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.21			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.68			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			9.55			
L=C-K	annual consumptive use of irrigation water (inches)			15.53			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,040.90**			

Table 2.1.4.223 Consumptive use of irrigation water, CU_W, calculations - 1972 - low stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.82	5.26	8.22	6.44	2.17	1.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.23	133.60	208.79	163.58	55.12	29.72
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.08			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.34	1.13	2.50	1.53	2.20	0.73
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	84.84	28.70	63.50	38.86	55.88	18.54
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	50.49	22.73	55.87	32.35	35.53	11.67
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.99	0.89	2.20	1.27	1.40	0.46
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.21			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.68			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			9.55			
L=C-K	annual consumptive use of irrigation water (inches)			15.53			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**940.86**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	1.35	6.11	8.53	3.69	1.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.64	34.29	155.19	216.66	93.73	29.72
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.82			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.34	1.13	2.50	1.53	2.20	0.73
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	84.84	28.70	63.50	38.86	55.88	18.54
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	48.15	18.27	49.66	36.36	38.68	11.67
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.90	0.72	1.96	1.43	1.52	0.46
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.99			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.68			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			9.33			
L=C-K	annual consumptive use of irrigation water (inches)			12.49			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,606.73**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	2.58	5.65	7.93	7.03	4.02
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.42	65.53	143.51	201.42	178.56	102.11
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.88			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.34	1.13	2.50	1.53	2.20	0.73
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	84.84	28.70	63.50	38.86	55.88	18.54
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	50.07	19.57	48.40	35.16	46.61	13.68
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.97	0.77	1.91	1.38	1.84	0.54
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.41			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.68			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			9.75			
L=C-K	annual consumptive use of irrigation water (inches)			19.13			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,726.47**			

Table 2.1.4.223 Consumptive use of irrigation water, CUW, calculations - 1972 - low stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	2.14	7.94	9.03	6.45	1.95
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.64	54.36	201.68	229.36	163.83	49.53
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.48			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.34	1.13	2.50	1.53	2.20	0.73
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	84.84	28.70	63.50	38.86	55.88	18.54
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	48.15	19.09	55.00	37.39	45.13	12.19
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.90	0.75	2.17	1.47	1.78	0.48
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.55			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.68			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			9.89			
L=C-K	annual consumptive use of irrigation water (inches)			18.59			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,880.48**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.56	5.19	5.74	7.08	3.34	2.19
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.10			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.43			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.86			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.68			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
G=D+F	total annual effective precipitation (inches)			12.20			
H=B-G	annual consumptive use of irrigation water (inches)			13.90			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**19,241.08**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.92	3.72	7.08	7.76	4.31	3.42
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.21			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.43			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.86			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.68			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.34			
G=D+F	total annual effective precipitation (inches)			12.20			
H=B-G	annual consumptive use of irrigation water (inches)			16.01			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,608.58**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	2.44	4.97	5.49	4.86	3.56
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.47			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.43			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.86			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.68			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.34			
G=D+F	total annual effective precipitation (inches)			12.20			
H=B-G	annual consumptive use of irrigation water (inches)			10.27			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,589.53**			
	Total Horse Creek consumptive use of irrigation water during 1972 (acre-feet)			**74,399**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.224 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.14	5.75	6.77	4.80	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	54.36	146.05	171.96	121.92	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.46			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.01	3.27	1.65	1.84	3.74	2.03
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.65	83.06	41.91	46.74	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	17.11	61.72	35.34	35.00	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.67	2.43	1.39	1.38	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.87			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.87			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			7.31			
L=C-K	annual consumptive use of irrigation water (inches)			12.15			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,489.39**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.68	4.39	6.69	5.16	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.67	111.51	169.93	131.06	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.92			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.01	3.27	1.65	1.84	3.74	2.03
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.65	83.06	41.91	46.74	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.68	57.21	35.19	35.71	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.66	2.25	1.39	1.41	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.71			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.87			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			7.15			
L=C-K	annual consumptive use of irrigation water (inches)			10.77			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**111.29**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.87	5.11	7.09	6.28	1.91	1.02
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.50	129.79	180.09	159.51	48.51	25.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.28			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.01	3.27	1.65	1.84	3.74	2.03
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.65	83.06	41.91	46.74	95.00	51.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.86	59.55	35.98	38.01	56.02	30.99
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.66	2.34	1.42	1.50	2.21	1.22
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.87			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			10.79			
L=C-K	annual consumptive use of irrigation water (inches)			12.49			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,641.39**			

Table 2.1.4.224 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.64	4.48	6.21	5.51	1.67	0.89
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.66	113.79	157.73	139.95	42.42	22.61
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.40			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.01	3.27	1.65	1.84	3.74	2.03
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.65	83.06	41.91	46.74	95.00	51.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.64	57.49	34.26	36.41	55.27	30.76
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.66	2.26	1.35	1.43	2.18	1.21
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.09			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.87			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			10.53			
L=C-K	annual consumptive use of irrigation water (inches)			9.87			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**597.96**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	1.47	5.91	9.31	3.65	1.14
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.45	37.34	150.11	236.47	92.71	28.96
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.60			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.01	3.27	1.65	1.84	3.74	2.03
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.65	83.06	41.91	46.74	95.00	51.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.16	48.60	33.69	45.02	61.73	31.19
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	1.91	1.33	1.77	2.43	1.23
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.31			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.87			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			10.75			
L=C-K	annual consumptive use of irrigation water (inches)			11.85			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,370.68**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.76	2.56	4.96	7.87	6.31	3.56
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.70	65.02	125.98	199.90	160.27	90.42
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.02			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.01	3.27	1.65	1.84	3.74	2.03
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.65	83.06	41.91	46.74	95.00	51.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.75	51.65	31.95	41.55	71.62	35.71
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.66	2.03	1.26	1.64	2.82	1.41
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.82			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.87			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			11.26			
L=C-K	annual consumptive use of irrigation water (inches)			15.76			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,189.19**			

Table 2.1.4.224 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	2.06	6.79	8.72	5.64	1.68
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.15	52.32	172.47	221.49	143.26	42.67
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.88			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.01	3.27	1.65	1.84	3.74	2.03
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.65	83.06	41.91	46.74	95.00	51.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.05	50.23	35.38	43.57	68.99	32.15
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.63	1.98	1.39	1.72	2.72	1.27
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.71			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.87			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
K=H+J	total annual effective precipitation (inches)			11.15			
L=C-K	annual consumptive use of irrigation water (inches)			14.73			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,167.81**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inchesper month) (1)	3.17	6.07	5.96	8.30	3.55	2.30
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.35			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.54			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.86			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.87			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.44			
G=D+F	total annual effective precipitation (inches)			14.30			
H=B-G	annual consumptive use of irrigation water (inches)			15.05			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**20,832.96**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.81	3.32	5.61	6.94	3.49	2.74
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.91			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.54			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.86			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.87			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.44			
G=D+F	total annual effective precipitation (inches)			14.30			
H=B-G	annual consumptive use of irrigation water (inches)			9.61			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,968.05**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.09	2.18	3.93	4.91	3.94	2.84
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.89			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.54			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.86			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.87			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.44			
G=D+F	total annual effective precipitation (inches)			14.30			
H=B-G	annual consumptive use of irrigation water (inches)			4.59			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,392.01**			
	Total Horse Creek consumptive use of irrigation water during 1989 (acre-feet)			**60,761**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.225 Consumptive use of irrigation water, CU_W, calculations - 1990 - low stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.21	5.55	8.18	4.60	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	56.13	140.97	207.77	116.84	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.54			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.35	3.44	1.12	7.16	2.24	0.66
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.29	87.38	28.45	181.86	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.72	63.81	26.53	113.84	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.89	2.51	1.04	4.48	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.92			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			11.92			
L=C-K	annual consumptive use of irrigation water (inches)			8.62			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,056.67**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	4.06	7.75	4.75	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.42	103.12	196.85	120.65	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.23			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.35	3.44	1.12	7.16	2.24	0.66
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.29	87.38	28.45	181.86	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.04	58.71	25.90	114.80	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.87	2.31	1.02	4.52	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.72			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			11.72			
L=C-K	annual consumptive use of irrigation water (inches)			6.51			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			1471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**798.02**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.80	4.60	8.00	5.62	2.04	1.13
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.72	116.84	203.20	142.75	51.82	28.70
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.19			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.35	3.44	1.12	7.16	2.24	0.66
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.29	87.38	28.45	181.86	56.90	16.76
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.20	60.51	26.26	120.52	35.86	10.47
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.87	2.38	1.03	4.74	1.41	0.41
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.84			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			13.84			
L=C-K	annual consumptive use of irrigation water (inches)			9.35			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,228.75**			

Table 2.1.4.225 Consumptive use of irrigation water, CU_W, calculations - 1990 - low stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.65	4.21	7.32	5.15	1.87	1.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.91	106.93	185.93	130.81	47.50	26.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.23			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.35	3.44	1.12	7.16	2.24	0.66
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.29	87.38	28.45	181.86	56.90	16.76
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.02	59.21	25.28	117.39	35.52	10.41
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.87	2.33	1.00	4.62	1.40	0.41
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.63			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			13.63			
L=C-K	annual consumptive use of irrigation water (inches)			7.60			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**460.43**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	1.30	6.54	8.19	3.82	1.24
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.92	33.02	166.12	208.03	97.03	31.50
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.15			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.35	3.44	1.12	7.16	2.24	0.66
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.29	87.38	28.45	181.86	56.90	16.76
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.30	50.33	24.20	139.12	39.60	10.53
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.84	1.98	0.95	5.48	1.56	0.41
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.22			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			14.22			
L=C-K	annual consumptive use of irrigation water (inches)			7.93			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,924.85**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.64	2.24	5.43	6.84	6.54	3.82
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.66	56.90	137.92	173.74	166.12	97.03
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.51			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.35	3.44	1.12	7.16	2.24	0.66
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.29	87.38	28.45	181.86	56.90	16.76
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.00	53.04	22.75	129.01	46.10	12.16
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.87	2.09	0.90	5.08	1.81	0.48
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.23			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			14.23			
L=C-K	annual consumptive use of irrigation water (inches)			12.28			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,601.73**			

Table 2.1.4.225 Consumptive use of irrigation water, CU_W, calculations - 1990 - low stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	2.06	8.49	8.67	6.68	2.06
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.92	52.32	215.65	220.22	169.67	52.32
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.02			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.35	3.44	1.12	7.16	2.24	0.66
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.29	87.38	28.45	181.86	56.90	16.76
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.30	52.51	26.99	142.90	46.46	11.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.84	2.07	1.06	5.63	1.83	0.43
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.86			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			6.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			14.86			
L=C-K	annual consumptive use of irrigation water (inches)			14.16			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,619.56**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.85	5.12	6.29	6.97	3.54	2.37
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.14			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			15.97			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			15.17			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			18.17			
H=B-G	annual consumptive use of irrigation water (inches)			8.97			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**12,416.72**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.89	3.24	6.85	6.74	4.04	3.27
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.03			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			15.97			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			15.17			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			18.17			
H=B-G	annual consumptive use of irrigation water (inches)			7.86			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,699.16**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.13	2.13	4.80	4.76	4.55	3.40
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.77			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			15.97			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			15.17			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			6.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			18.17			
H=B-G	annual consumptive use of irrigation water (inches)			2.60			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,921.40**			
	Total Horse Creek consumptive use of irrigation water during 1990 (acre-feet)			**45,727**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.226 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.37	6.18	6.87	4.32	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	60.20	156.97	174.50	109.73	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.74			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.33	2.24	1.96	2.31	2.67	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.38	56.90	49.78	58.67	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.88	45.18	41.61	41.86	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.19	1.78	1.64	1.65	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.26			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.29			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			7.41			
L=C-K	annual consumptive use of irrigation water (inches)			12.33			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,511.45**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.83	4.63	6.67	4.56	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.48	117.60	169.42	115.82	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.69			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.33	2.24	1.96	2.31	2.67	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.38	56.90	49.78	58.67	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.74	41.44	41.15	42.43	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.19	1.63	1.62	1.67	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.11			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.29			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			7.26			
L=C-K	annual consumptive use of irrigation water (inches)			10.43			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**107.78**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.29	6.08	7.95	6.24	2.07	1.24
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	58.17	154.43	201.93	158.50	52.58	31.50
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.87			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.33	2.24	1.96	2.31	2.67	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.38	56.90	49.78	58.67	67.82	5.08
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.86	44.93	44.20	46.60	42.02	1.97
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.19	1.77	1.74	1.83	1.65	0.08
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.26			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.29			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			9.41			
L=C-K	annual consumptive use of irrigation water (inches)			16.46			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,163.12**			

Table 2.1.4.226 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.32	6.16	8.06	6.32	2.10	1.26
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	58.93	156.46	204.72	160.53	53.34	32.00
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.22			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.33	2.24	1.96	2.31	2.67	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.38	56.90	49.78	58.67	67.82	5.08
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.87	45.13	44.47	46.81	42.09	1.97
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.19	1.78	1.75	1.84	1.66	0.08
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.30			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.29			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			9.45			
L=C-K	annual consumptive use of irrigation water (inches)			16.77			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,015.98**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	1.42	5.40	7.55	3.22	1.13
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.45	36.07	137.16	191.77	81.79	28.70
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.84			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.33	2.24	1.96	2.31	2.67	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.38	56.90	49.78	58.67	67.82	5.08
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.55	34.63	38.33	50.14	44.81	1.96
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.18	1.36	1.51	1.97	1.76	0.08
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.86			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.29			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			9.01			
L=C-K	annual consumptive use of irrigation water (inches)			10.83			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,994.47**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.70	2.40	4.41	6.20	5.42	3.46
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.18	60.96	112.01	157.48	137.67	87.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.59			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.33	2.24	1.96	2.31	2.67	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.38	56.90	49.78	58.67	67.82	5.08
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.70	36.58	36.27	46.50	50.66	2.23
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.19	1.44	1.43	1.83	1.99	0.09
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.97			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.29			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			9.12			
L=C-K	annual consumptive use of irrigation water (inches)			14.47			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,600.73**			

Table 2.1.4.226 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.08	2.17	6.76	7.69	5.42	1.83
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.43	55.12	171.70	195.33	137.67	46.48
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.95			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.33	2.24	1.96	2.31	2.67	0.20
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	8.38	56.90	49.78	58.67	67.82	5.08
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	4.54	36.12	41.36	50.53	50.66	2.04
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.18	1.42	1.63	1.99	1.99	0.08
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.29			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.29			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
K=H+J	total annual effective precipitation (inches)			9.44			
L=C-K	annual consumptive use of irrigation water (inches)			15.51			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,918.04**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.07	5.72	5.31	6.56	3.05	2.23
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.94			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.71			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.22			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.29			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.15			
G=D+F	total annual effective precipitation (inches)			11.37			
H=B-G	annual consumptive use of irrigation water (inches)			14.57			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**20,168.52**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.95	3.46	5.51	6.05	3.32	2.93
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.22			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.71			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.22			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.29			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.15			
G=D+F	total annual effective precipitation (inches)			11.37			
H=B-G	annual consumptive use of irrigation water (inches)			11.85			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,592.24**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.16	2.27	3.86	4.28	3.74	3.05
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.36			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.71			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.22			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.29			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.15			
G=D+F	total annual effective precipitation (inches)			11.37			
H=B-G	annual consumptive use of irrigation water (inches)			6.99			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,165.61**			
	Total Horse Creek consumptive use of irrigation water during 1992 (acre-feet)			**64,238**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.227 Consumptive use of irrigation water, CU_W, calculations - 1974 - normal or average stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.03	6.38	8.23	5.46	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	51.56	162.05	209.04	138.68	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.10			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.82	0.21	2.40	1.28	0.12	1.01
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.23	5.33	60.96	32.51	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.68	2.90	53.90	25.90	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.17	0.11	2.12	1.02	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.42			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.00			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.50			
K=H+J	total annual effective precipitation (inches)			6.92			
L=C-K	annual consumptive use of irrigation water (inches)			15.18			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,860.82**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.60	4.89	8.15	5.89	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.64	124.21	207.01	149.61	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.53			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.82	0.21	2.40	1.28	0.12	1.01
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.23	5.33	60.96	32.51	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.98	2.67	53.66	26.53	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.14	0.11	2.11	1.04	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.40			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.00			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.50			
K=H+J	total annual effective precipitation (inches)			6.90			
L=C-K	annual consumptive use of irrigation water (inches)			13.63			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**140.84**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.79	5.75	8.76	7.24	2.18	1.08
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.47	146.05	222.50	183.90	55.37	27.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.80			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.82	0.21	2.40	1.28	0.12	1.01
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.23	5.33	60.96	32.51	3.05	25.65
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.29	2.80	55.51	28.60	0.23	16.13
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.15	0.11	2.19	1.13	0.01	0.64
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.23			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.00			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.50			
K=H+J	total annual effective precipitation (inches)			7.73			
L=C-K	annual consumptive use of irrigation water (inches)			19.07			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,506.12**			

Table 2.1.4.227 Consumptive use of irrigation water, CU_W, calculations - 1974 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.60	5.12	7.79	6.44	1.94	0.96
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.64	130.05	197.87	163.58	49.28	24.38
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.85			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.82	0.21	2.40	1.28	0.12	1.01
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.23	5.33	60.96	32.51	3.05	25.65
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.98	2.71	52.59	27.35	0.23	16.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.14	0.11	2.07	1.08	0.01	0.63
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.04			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.00			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.50			
K=H+J	total annual effective precipitation (inches)			7.54			
L=C-K	annual consumptive use of irrigation water (inches)			16.31			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**988.11**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	1.49	6.57	9.69	3.74	1.09
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.64	37.85	166.88	246.13	95.00	27.69
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.55			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.82	0.21	2.40	1.28	0.12	1.01
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.23	5.33	60.96	32.51	3.05	25.65
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.98	2.21	49.12	32.80	0.25	16.14
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.10	0.09	1.93	1.29	0.01	0.64
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.06			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.00			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.50			
K=H+J	total annual effective precipitation (inches)			7.56			
L=C-K	annual consumptive use of irrigation water (inches)			15.99			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,897.65**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.56	2.67	5.67	8.41	6.66	3.50
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.62	67.82	144.02	213.61	169.16	88.90
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.47			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.82	0.21	2.40	1.28	0.12	1.01
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.23	5.33	60.96	32.51	3.05	25.65
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.91	2.36	46.72	30.53	0.29	18.46
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.14	0.09	1.84	1.20	0.01	0.73
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.01			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.00			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.50			
K=H+J	total annual effective precipitation (inches)			7.51			
L=C-K	annual consumptive use of irrigation water (inches)			20.96			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,561.25**			

Table 2.1.4.227 Consumptive use of irrigation water, CU_W, calculations - 1974 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.91	2.22	8.05	9.67	6.17	1.71
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.11	56.39	204.47	245.62	156.72	43.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.73			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.82	0.21	2.40	1.28	0.12	1.01
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	46.23	5.33	60.96	32.51	3.05	25.65
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.88	2.30	53.36	32.76	0.29	16.70
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.10	0.09	2.10	1.29	0.01	0.66
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.25			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			5.00			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.50			
K=H+J	total annual effective precipitation (inches)			7.75			
L=C-K	annual consumptive use of irrigation water (inches)			20.98			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**20,179.26**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.72	6.12	6.59	8.59	3.62	2.18
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.82			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.84			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.50			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.00			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.50			
G=D+F	total annual effective precipitation (inches)			9.00			
H=B-G	annual consumptive use of irrigation water (inches)			20.82			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**28,820.09**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.81	3.91	7.23	8.37	4.16	3.03
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.51			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.84			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.50			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.00			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.50			
G=D+F	total annual effective precipitation (inches)			9.00			
H=B-G	annual consumptive use of irrigation water (inches)			19.51			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,146.38**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.09	2.56	5.07	5.91	4.69	.0417 in
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.32			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.84			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.50			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			5.00			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.50			
G=D+F	total annual effective precipitation (inches)			9.00			
H=B-G	annual consumptive use of irrigation water (inches)			10.32			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,626.48**			
	Total Horse Creek consumptive use of irrigation water during 1974 (acre-feet)			**91,727**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.228 Consumptive use of irrigation water, CU_W, calculations - 1983 - normal or average stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.84	5.65	7.00	5.40	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.74	143.51	177.80	137.16	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.89			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.96	4.86	4.13	2.26	1.11	0.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	49.78	123.44	104.90	57.40	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	31.42	86.62	81.14	43.60	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.24	3.41	3.19	1.72	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.56			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			10.39			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			12.56			
L=C-K	annual consumptive use of irrigation water (inches)			7.33			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**898.54**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.50	4.48	7.19	6.02	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.10	113.79	182.63	152.91	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.19			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.96	4.86	4.13	2.26	1.11	0.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	49.78	123.44	104.90	57.40	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.83	81.14	82.01	45.13	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.21	3.19	3.23	1.78	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.41			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			10.39			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			12.41			
L=C-K	annual consumptive use of irrigation water (inches)			6.78			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**70.06**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.59	4.97	7.27	6.98	2.36	1.25
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.39	126.24	184.66	177.29	59.94	31.75
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.42			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.96	4.86	4.13	2.26	1.11	0.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	49.78	123.44	104.90	57.40	28.19	6.10
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.98	83.40	82.37	47.62	18.99	2.81
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.22	3.28	3.24	1.87	0.75	0.11
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.47			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			10.39			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			13.47			
L=C-K	annual consumptive use of irrigation water (inches)			10.95			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,439.01**			

Table 2.1.4.228 Consumptive use of irrigation water, CU_W, calculations - 1983 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.50	4.70	6.88	6.60	2.23	1.18
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.10	119.38	174.75	167.64	56.64	29.97
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.09			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.96	4.86	4.13	2.26	1.11	0.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	49.78	123.44	104.90	57.40	28.19	6.10
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.83	82.15	80.60	46.62	18.86	2.79
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.21	3.23	3.17	1.84	0.74	0.11
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.30			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			10.39			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			13.30			
L=C-K	annual consumptive use of irrigation water (inches)			9.79			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**593.11**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.83	1.23	5.25	8.99	3.91	1.22
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.08	31.24	133.35	228.35	99.31	30.99
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.43			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.96	4.86	4.13	2.26	1.11	0.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	49.78	123.44	104.90	57.40	28.19	6.10
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.70	67.67	73.59	53.28	20.71	2.80
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.17	2.66	2.90	2.10	0.82	0.11
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.76			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			10.39			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			12.76			
L=C-K	annual consumptive use of irrigation water (inches)			8.67			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,197.79**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.13	1.88	3.83	6.61	5.89	3.29
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.70	47.75	97.28	167.89	149.61	83.57
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.63			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.96	4.86	4.13	2.26	1.11	0.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	49.78	123.44	104.90	57.40	28.19	6.10
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.20	70.18	67.97	46.65	23.13	3.14
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.19	2.76	2.68	1.84	0.91	0.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.50			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			10.39			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			12.50			
L=C-K	annual consumptive use of irrigation water (inches)			10.13			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,620.97**			

Table 2.1.4.228 Consumptive use of irrigation water, CU_W, calculations - 1983 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	2.02	7.02	9.80	7.03	2.08
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.59	51.31	178.31	248.92	178.56	52.83
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.80			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.96	4.86	4.13	2.26	1.11	0.24
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	49.78	123.44	104.90	57.40	28.19	6.10
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.73	70.73	81.23	55.74	24.66	2.94
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.17	2.78	3.20	2.19	0.97	0.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.43			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			10.39			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			13.43			
L=C-K	annual consumptive use of irrigation water (inches)			15.37			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,783.38**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.39	5.24	5.41	8.20	3.89	2.49
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.62			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			14.56			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			13.83			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			10.39			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			16.83			
H=B-G	annual consumptive use of irrigation water (inches)			10.79			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,936.06**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.62	3.38	6.00	8.08	4.51	3.50
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.09			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			14.56			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			13.83			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			10.39			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			16.83			
H=B-G	annual consumptive use of irrigation water (inches)			10.26			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,439.36**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.96	2.22	4.21	5.71	5.09	3.63
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.82			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			14.56			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			13.83			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			10.39			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			16.83			
H=B-G	annual consumptive use of irrigation water (inches)			4.99			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,687.61**			
	Total Horse Creek consumptive use of irrigation water during 1983 (acre-feet)			**51,666**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.229 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.62	6.33	9.38	5.33	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	66.55	160.78	238.25	135.38	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.66			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.79	4.51	0.80	1.68	0.83	1.68
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	70.87	114.55	20.32	42.67	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	45.05	84.35	20.30	33.16	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.77	3.32	0.80	1.31	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.20			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.52			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			10.20			
L=C-K	annual consumptive use of irrigation water (inches)			13.46			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,649.97**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.11	4.98	9.54	5.90	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.59	126.49	242.32	149.86	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.53			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.79	4.51	0.80	1.68	0.83	1.68
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	70.87	114.55	20.32	42.67	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	43.79	78.23	20.48	34.23	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.72	3.08	0.81	1.35	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.96			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.52			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.96			
L=C-K	annual consumptive use of irrigation water (inches)			12.57			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**129.89**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.54	3.80	6.64	4.71	1.62	0.81
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.12	96.52	168.66	119.63	41.15	20.57
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.12			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.79	4.51	0.80	1.68	0.83	1.68
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	70.87	114.55	20.32	42.67	21.08	42.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	42.42	73.24	17.42	32.03	13.66	25.76
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.67	2.88	0.69	1.26	0.54	1.01
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.05			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.52			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			11.05			
L=C-K	annual consumptive use of irrigation water (inches)			8.07			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,060.53**			

Table 2.1.4.229 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.52	3.75	6.55	4.65	1.60	0.80
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.61	95.25	166.37	118.11	40.64	20.32
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.87			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.79	4.51	0.80	1.68	0.83	1.68
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	70.87	114.55	20.32	42.67	21.08	42.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	42.37	73.03	17.33	31.92	13.65	25.75
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.67	2.88	0.68	1.26	0.54	1.01
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.04			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.52			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			11.04			
L=C-K	annual consumptive use of irrigation water (inches)			7.83			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**474.37**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	1.43	7.24	9.14	4.05	1.19
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.73	36.32	183.90	232.16	102.87	30.23
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.26			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.79	4.51	0.80	1.68	0.83	1.68
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	70.87	114.55	20.32	42.67	21.08	42.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	41.64	64.16	18.01	41.02	15.65	26.31
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.64	2.53	0.71	1.61	0.62	1.04
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.15			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.52			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			11.15			
L=C-K	annual consumptive use of irrigation water (inches)			13.11			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,835.41**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.09	2.74	6.69	8.50	7.72	4.09
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.09	69.60	169.93	215.90	196.09	103.89
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.83			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.79	4.51	0.80	1.68	0.83	1.68
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	70.87	114.55	20.32	42.67	21.08	42.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	43.74	69.03	17.47	39.58	19.21	30.94
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.72	2.72	0.69	1.56	0.76	1.22
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.67			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.52			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			11.67			
L=C-K	annual consumptive use of irrigation water (inches)			20.16			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,196.32**			

Table 2.1.4.229 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	2.26	9.40	9.69	7.08	1.98
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.73	57.40	238.76	246.13	179.83	50.29
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			31.62			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.79	4.51	0.80	1.68	0.83	1.68
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	70.87	114.55	20.32	42.67	21.08	42.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	41.64	67.20	20.32	42.30	18.53	27.50
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.64	2.65	0.80	1.67	0.73	1.08
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.57			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.52			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			11.57			
L=C-K	annual consumptive use of irrigation water (inches)			20.05			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**19,284.76**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.40	5.87	7.25	8.11	3.92	2.38
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.93			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.29			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.68			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.52			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			14.68			
H=B-G	annual consumptive use of irrigation water (inches)			16.25			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**22,494.06**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.97	3.24	6.89	6.84	3.89	2.85
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.68			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.29			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.68			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.52			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			14.68			
H=B-G	annual consumptive use of irrigation water (inches)			11.00			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,975.92**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.18	2.13	4.82	4.83	4.39	2.97
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.32			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.29			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.68			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.52			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			14.68			
H=B-G	annual consumptive use of irrigation water (inches)			5.64			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,167.96**			
	Total Horse Creek consumptive use of irrigation water during 1988 (acre-feet)			**71,269**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.230 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.29	5.94	7.03	5.35	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	58.17	150.88	178.56	135.89	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.61			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.62	4.36	1.81	3.78	2.75	2.27
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	110.74	45.97	96.01	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.44	80.16	39.04	68.51	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.41	3.16	1.54	2.70	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.81			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			8.89			
L=C-K	annual consumptive use of irrigation water (inches)			11.72			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,436.68**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.87	4.71	7.21	5.97	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.50	119.63	183.13	151.64	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.76			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.62	4.36	1.81	3.78	2.75	2.27
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	110.74	45.97	96.01	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.20	74.83	39.44	70.93	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.40	2.95	1.55	2.79	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.69			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			8.77			
L=C-K	annual consumptive use of irrigation water (inches)			10.99			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**113.56**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.75	4.62	6.44	6.11	1.99	0.95
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.45	117.35	163.58	155.19	50.55	24.13
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.86			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.62	4.36	1.81	3.78	2.75	2.27
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	110.74	45.97	96.01	69.85	57.66
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.13	74.46	37.78	71.48	42.94	34.14
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.40	2.93	1.49	2.81	1.69	1.34
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.66			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			11.74			
L=C-K	annual consumptive use of irrigation water (inches)			10.12			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,329.94**			

Table 2.1.4.230 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.98	5.23	7.29	6.92	2.25	1.08
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.29	132.84	185.17	175.77	57.15	27.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.75			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.62	4.36	1.81	3.78	2.75	2.27
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	110.74	45.97	96.01	69.85	57.66
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.26	77.04	39.62	74.79	43.57	34.39
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.40	3.03	1.56	2.94	1.72	1.35
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.00			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			12.08			
L=C-K	annual consumptive use of irrigation water (inches)			12.67			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**767.59**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	1.27	5.14	8.69	3.64	1.02
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.40	32.26	130.56	220.73	92.46	25.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.76			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.62	4.36	1.81	3.78	2.75	2.27
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	110.74	45.97	96.01	69.85	57.66
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.72	61.75	35.13	82.56	47.09	34.28
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.38	2.43	1.38	3.25	1.85	1.35
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.64			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			11.72			
L=C-K	annual consumptive use of irrigation water (inches)			9.04			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,334.25**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.76	2.49	4.85	8.26	7.09	3.60
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.70	63.25	123.19	209.80	180.09	91.44
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.05			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.62	4.36	1.81	3.78	2.75	2.27
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	110.74	45.97	96.01	69.85	57.66
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.14	66.11	34.57	80.60	57.09	39.59
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.40	2.60	1.36	3.17	2.25	1.56
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.34			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			12.42			
L=C-K	annual consumptive use of irrigation water (inches)			15.63			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,129.89**			

Table 2.1.4.230 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	2.12	7.04	9.71	6.71	1.80
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.92	53.85	178.82	246.63	170.43	45.72
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.44			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.62	4.36	1.81	3.78	2.75	2.27
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	15.75	110.74	45.97	96.01	69.85	57.66
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	9.75	64.75	39.07	87.40	55.89	35.80
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.38	2.55	1.54	3.44	2.20	1.41
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.52			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.16			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
K=H+J	total annual effective precipitation (inches)			12.60			
L=C-K	annual consumptive use of irrigation water (inches)			15.84			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**15,235.44**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.73	5.06	4.99	7.47	3.41	1.98
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.64			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			15.59			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			14.81			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.16			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.08			
G=D+F	total annual effective precipitation (inches)			15.89			
H=B-G	annual consumptive use of irrigation water (inches)			9.75			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,496.44**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.12	3.76	6.37	8.47	4.56	3.21
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.49			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			15.59			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			14.81			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.16			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.08			
G=D+F	total annual effective precipitation (inches)			15.89			
H=B-G	annual consumptive use of irrigation water (inches)			12.60			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,136.05**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.27	2.47	4.47	5.98	5.13	3.34
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.66			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			15.59			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			14.81			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.16			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.08			
G=D+F	total annual effective precipitation (inches)			15.89			
H=B-G	annual consumptive use of irrigation water (inches)			6.77			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,003.03**			
	Total Horse Creek consumptive use of irrigation water during 1982 (acre-feet)			**56,983**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.231 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.35	5.77	7.31	4.87	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	59.69	146.56	185.67	123.70	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.30			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.80	2.94	1.87	1.41	2.17	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.72	74.68	47.50	35.81	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.91	56.27	40.86	27.45	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.18	2.22	1.61	1.08	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.09			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			8.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.09			
L=C-K	annual consumptive use of irrigation water (inches)			11.21			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,374.16**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.53	3.64	5.97	4.32	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.86	92.46	151.64	109.73	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.46			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.80	2.94	1.87	1.41	2.17	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.72	74.68	47.50	35.81	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.57	49.96	37.92	26.62	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.12	1.97	1.49	1.05	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.63			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			8.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			8.63			
L=C-K	annual consumptive use of irrigation water (inches)			6.83			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**70.58**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.84	4.59	6.87	5.71	1.77	1.04
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.74	116.59	174.50	145.03	44.96	26.42
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.82			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.80	2.94	1.87	1.41	2.17	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.72	74.68	47.50	35.81	55.12	5.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.07	52.68	39.87	28.77	34.32	2.57
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.14	2.07	1.57	1.13	1.35	0.10
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.36			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			8.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			10.36			
L=C-K	annual consumptive use of irrigation water (inches)			11.46			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,506.04**			

Table 2.1.4.231 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.30	5.73	8.57	7.12	2.21	1.30
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	58.42	145.54	217.68	180.85	56.13	33.02
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.23			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.80	2.94	1.87	1.41	2.17	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.72	74.68	47.50	35.81	55.12	5.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.83	56.14	43.84	31.13	35.18	2.60
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.17	2.21	1.73	1.23	1.39	0.10
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.83			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			8.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			10.83			
L=C-K	annual consumptive use of irrigation water (inches)			16.40			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**993.57**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	1.44	6.25	9.26	3.69	1.28
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.73	36.58	158.75	235.20	93.73	32.51
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.13			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.80	2.94	1.87	1.41	2.17	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.72	74.68	47.50	35.81	55.12	5.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.07	44.18	38.51	35.08	38.21	2.60
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.11	1.74	1.52	1.38	1.50	0.10
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			8.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			10.35			
L=C-K	annual consumptive use of irrigation water (inches)			12.78			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,713.69**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.10	2.79	5.84	8.69	7.09	4.43
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.34	70.87	148.34	220.73	180.09	112.52
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.94			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.80	2.94	1.87	1.41	2.17	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.72	74.68	47.50	35.81	55.12	5.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.50	47.64	37.64	33.98	46.20	3.10
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.16	1.88	1.48	1.34	1.82	0.12
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.80			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			8.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			10.80			
L=C-K	annual consumptive use of irrigation water (inches)			20.14			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,187.20**			

Table 2.1.4.231 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.23	2.33	8.27	9.99	6.57	2.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	31.24	59.18	210.06	253.75	166.88	55.12
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.56			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.80	2.94	1.87	1.41	2.17	0.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.72	74.68	47.50	35.81	55.12	5.84
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.10	46.43	43.12	36.54	44.88	2.73
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.11	1.83	1.70	1.44	1.77	0.11
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.96			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			8.78			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			10.96			
L=C-K	annual consumptive use of irrigation water (inches)			19.60			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**18,851.93**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.18	5.54	5.86	7.67	3.33	2.40
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.98			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.42			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.90			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			8.78			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			12.90			
H=B-G	annual consumptive use of irrigation water (inches)			15.08			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**20,874.49**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.36	3.93	7.15	8.31	4.26	3.68
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.69			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.42			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.90			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			8.78			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			12.90			
H=B-G	annual consumptive use of irrigation water (inches)			16.79			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**12,174.15**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.41	2.59	5.01	5.87	4.80	3.83
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.51			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.42			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.90			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			8.78			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			12.90			
H=B-G	annual consumptive use of irrigation water (inches)			10.61			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,840.79**			
	Total Horse Creek consumptive use of irrigation water during 1987 (acre-feet)			**77,587**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.232 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.12	5.21	7.07	4.83	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.85	132.33	179.58	122.68	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.23			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.91	2.04	3.94	1.45	3.40	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	51.82	100.08	36.83	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.41	39.33	78.20	28.12	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.61	1.55	3.08	1.11	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.35			
L=C-K	annual consumptive use of irrigation water (inches)			9.88			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,211.12**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.88	4.49	7.89	5.86	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.75	114.05	200.41	148.84	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.12			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.91	2.04	3.94	1.45	3.40	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	51.82	100.08	36.83	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.21	37.79	81.86	29.79	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.60	1.49	3.22	1.17	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.48			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.48			
L=C-K	annual consumptive use of irrigation water (inches)			10.64			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**109.95**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.68	4.19	6.71	5.71	1.67	1.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.67	106.43	170.43	145.03	42.42	26.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.99			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.91	2.04	3.94	1.45	3.40	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	51.82	100.08	36.83	86.36	8.38
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.04	37.16	76.64	29.54	50.85	4.53
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	1.46	3.02	1.16	2.00	0.18
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.41			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			11.41			
L=C-K	annual consumptive use of irrigation water (inches)			9.58			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,258.97**			

Table 2.1.4.232 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.82	4.54	7.27	6.19	1.81	1.12
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.23	115.32	184.66	157.23	45.97	28.45
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.75			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.91	2.04	3.94	1.45	3.40	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	51.82	100.08	36.83	86.36	8.38
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.16	37.89	79.08	30.34	51.25	4.55
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.60	1.49	3.11	1.19	2.02	0.18
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.59			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			11.59			
L=C-K	annual consumptive use of irrigation water (inches)			11.16			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**676.11**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.10	1.31	6.09	9.25	3.48	1.26
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	27.94	33.27	154.69	234.95	88.39	32.00
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.49			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.91	2.04	3.94	1.45	3.40	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	51.82	100.08	36.83	86.36	8.38
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.56	31.64	74.03	36.00	56.26	4.59
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.57	1.25	2.91	1.42	2.21	0.18
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.54			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			11.54			
L=C-K	annual consumptive use of irrigation water (inches)			10.95			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,038.73**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.69	2.26	5.05	7.71	5.94	3.87
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.93	57.40	128.27	195.83	150.88	98.30
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.52			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.91	2.04	3.94	1.45	3.40	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	51.82	100.08	36.83	86.36	8.38
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.05	33.36	69.85	33.03	64.55	5.31
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	1.31	2.75	1.30	2.54	0.21
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.70			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			11.70			
L=C-K	annual consumptive use of irrigation water (inches)			14.82			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,760.39**			

Table 2.1.4.232 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	1.87	7.11	8.81	5.47	1.88
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.15	47.50	180.59	223.77	138.94	47.75
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.13			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.91	2.04	3.94	1.45	3.40	0.33
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	23.11	51.82	100.08	36.83	86.36	8.38
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.47	32.64	78.37	35.12	62.88	4.75
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.57	1.29	3.09	1.38	2.48	0.19
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.00			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			12.00			
L=C-K	annual consumptive use of irrigation water (inches)			14.13			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,590.71**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.90	5.07	5.75	7.71	3.16	2.37
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.96			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.07			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.47			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			14.47			
H=B-G	annual consumptive use of irrigation water (inches)			12.49			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,289.28**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.87	3.13	6.10	7.28	3.51	3.17
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.06			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.07			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.47			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			14.47			
H=B-G	annual consumptive use of irrigation water (inches)			10.59			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,678.63**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	2.06	4.27	5.14	3.97	3.30
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.86			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.07			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			11.47			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			14.47			
H=B-G	annual consumptive use of irrigation water (inches)			5.39			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,983.21**			
	Total Horse Creek consumptive use of irrigation water during 1979 (acre-feet)			**56,597**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.233 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.64	4.64	6.09	4.48	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.66	117.86	154.69	113.79	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.85			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.03	2.66	1.01	2.05	1.19	0.76
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.56	67.56	25.65	52.07	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	32.08	48.34	21.34	37.93	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.26	1.90	0.84	1.49	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.49			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			7.15			
L=C-K	annual consumptive use of irrigation water (inches)			9.70			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,189.06**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.49	4.13	7.01	5.62	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.85	104.90	178.05	142.75	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.25			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.03	2.66	1.01	2.05	1.19	0.76
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.56	67.56	25.65	52.07	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	31.81	46.98	22.46	40.42	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.25	1.85	0.88	1.59	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.57			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			7.23			
L=C-K	annual consumptive use of irrigation water (inches)			11.02			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**113.87**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.54	4.46	6.89	6.33	2.03	1.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.12	113.28	175.01	160.78	51.56	26.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.28			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.03	2.66	1.01	2.05	1.19	0.76
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.56	67.56	25.65	52.07	30.23	19.30
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	31.90	47.85	22.31	42.06	19.95	12.07
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.26	1.88	0.88	1.66	0.79	0.48
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.95			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			8.61			
L=C-K	annual consumptive use of irrigation water (inches)			13.67			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,796.47**			

Table 2.1.4.233 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.54	4.45	6.88	6.32	2.03	1.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.12	113.03	174.75	160.53	51.56	26.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.25			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.03	2.66	1.01	2.05	1.19	0.76
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.56	67.56	25.65	52.07	30.23	19.30
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	31.90	47.83	22.30	42.03	19.95	12.07
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.26	1.88	0.88	1.65	0.79	0.48
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.94			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			8.60			
L=C-K	annual consumptive use of irrigation water (inches)			13.65			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**826.96**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.83	1.15	5.15	8.43	3.47	1.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.08	29.21	130.81	214.12	88.14	26.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.06			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.03	2.66	1.01	2.05	1.19	0.76
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.56	67.56	25.65	52.07	30.23	19.30
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.66	39.78	20.24	47.29	21.62	12.07
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.21	1.57	0.80	1.86	0.85	0.48
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.77			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			8.43			
L=C-K	annual consumptive use of irrigation water (inches)			11.63			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,289.53**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.52	2.34	5.07	8.34	7.03	3.77
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.61	59.44	128.78	211.84	178.56	95.76
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.07			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.03	2.66	1.01	2.05	1.19	0.76
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.56	67.56	25.65	52.07	30.23	19.30
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	31.86	42.51	20.15	47.05	26.37	14.07
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.25	1.67	0.79	1.85	1.04	0.55
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.15			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			8.81			
L=C-K	annual consumptive use of irrigation water (inches)			19.26			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,785.77**			

Table 2.1.4.233 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.88	1.94	7.12	9.50	6.45	1.83
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.35	49.28	180.85	241.30	163.83	46.48
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.72			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.03	2.66	1.01	2.05	1.19	0.76
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	51.56	67.56	25.65	52.07	30.23	19.30
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.74	41.57	22.60	50.20	25.53	12.63
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.21	1.64	0.89	1.98	1.01	0.50
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.23			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
K=H+J	total annual effective precipitation (inches)			8.89			
L=C-K	annual consumptive use of irrigation water (inches)			18.83			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**18,111.32**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.31	4.70	5.14	7.44	3.34	2.05
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.98			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.70			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.22			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.66			
G=D+F	total annual effective precipitation (inches)			10.88			
H=B-G	annual consumptive use of irrigation water (inches)			14.10			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**19,517.93**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.31	4.70	5.14	7.44	3.34	2.05
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.98			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.70			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.22			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.66			
G=D+F	total annual effective precipitation (inches)			10.88			
H=B-G	annual consumptive use of irrigation water (inches)			14.10			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,223.68**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	1.80	3.62	4.69	3.95	2.71
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.62			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.70			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.22			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.32			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.66			
G=D+F	total annual effective precipitation (inches)			10.88			
H=B-G	annual consumptive use of irrigation water (inches)			6.74			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,980.86**			
	Total Horse Creek consumptive use of irrigation water during 1976 (acre-feet)			**69,835**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.234 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.12	5.67	7.80	5.57	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.85	144.02	198.12	141.48	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.16			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.64	3.60	0.19	2.61	1.75	0.95
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	16.26	91.44	4.83	66.29	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.71	66.84	2.54	50.06	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.42	2.63	0.10	1.97	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.12			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			9.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			8.12			
L=C-K	annual consumptive use of irrigation water (inches)			13.04			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,598.49**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.28	3.32	5.91	4.58	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.51	84.33	150.11	116.33	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.09			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.64	3.60	0.19	2.61	1.75	0.95
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	16.26	91.44	4.83	66.29	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.22	58.62	2.29	47.37	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.40	2.31	0.09	1.86	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.66			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			9.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			7.66			
L=C-K	annual consumptive use of irrigation water (inches)			7.43			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**76.78**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.55	4.21	6.82	6.08	1.91	1.02
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.37	106.93	173.23	154.43	48.51	25.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.59			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.64	3.60	0.19	2.61	1.75	0.95
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	16.26	91.44	4.83	66.29	44.45	24.13
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.37	61.61	2.41	51.51	28.44	15.13
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.41	2.43	0.09	2.03	1.12	0.60
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.68			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			9.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.68			
L=C-K	annual consumptive use of irrigation water (inches)			11.91			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,565.17**			

Table 2.1.4.234 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.80	4.89	7.93	7.07	2.23	1.19
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.72	124.21	201.42	179.58	56.64	30.23
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.11			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.64	3.60	0.19	2.61	1.75	0.95
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	16.26	91.44	4.83	66.29	44.45	24.13
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.52	63.99	2.56	54.44	28.95	15.28
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.41	2.52	0.10	2.14	1.14	0.60
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.91			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			9.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.91			
L=C-K	annual consumptive use of irrigation water (inches)			15.20			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**920.87**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.98	1.28	6.01	9.55	3.87	1.21
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.89	32.51	152.65	242.57	98.30	30.73
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.90			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.64	3.60	0.19	2.61	1.75	0.95
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	16.26	91.44	4.83	66.29	44.45	24.13
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.05	52.31	2.30	62.53	31.73	15.29
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.40	2.06	0.09	2.46	1.25	0.60
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.86			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			9.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.86			
L=C-K	annual consumptive use of irrigation water (inches)			13.04			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,809.59**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.69	2.45	5.56	8.88	7.38	4.15
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.93	62.23	141.22	225.55	187.45	105.41
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.11			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.64	3.60	0.19	2.61	1.75	0.95
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	16.26	91.44	4.83	66.29	44.45	24.13
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.45	55.84	2.25	60.23	38.61	18.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.41	2.20	0.09	2.37	1.52	0.71
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.30			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			9.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			10.30			
L=C-K	annual consumptive use of irrigation water (inches)			19.81			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,036.66**			

Table 2.1.4.234 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.98	2.03	7.81	10.11	6.77	2.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.89	51.56	198.37	256.79	171.96	51.05
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.71			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.64	3.60	0.19	2.61	1.75	0.95
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	16.26	91.44	4.83	66.29	44.45	24.13
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.05	54.54	2.55	64.51	37.31	15.99
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.40	2.15	0.10	2.54	1.47	0.63
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.29			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			9.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			10.29			
L=C-K	annual consumptive use of irrigation water (inches)			19.42			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**18,678.80**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.45	4.68	5.37	7.54	3.33	2.15
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.52			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.74			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.25			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			9.63			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			12.25			
H=B-G	annual consumptive use of irrigation water (inches)			13.27			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**18,369.00**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.48	2.70	5.31	6.62	3.45	2.69
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.25			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.74			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.25			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			9.63			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			12.25			
H=B-G	annual consumptive use of irrigation water (inches)			10.00			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,250.83**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.89	1.77	3.72	4.68	3.89	2.79
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.74			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.74			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			9.25			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			9.63			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			12.25			
H=B-G	annual consumptive use of irrigation water (inches)			5.49			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,057.11**			
	Total Horse Creek consumptive use of irrigation water during 1980 (acre-feet)			**66,363**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.235 Consumptive use of irrigation water, CU_W, calculations - 1977 - normal or average stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.36	3.84	5.15	3.23	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.54	97.54	130.81	82.04	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.58			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.05	2.52	1.45	2.56	0.85	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	77.47	64.01	36.83	65.02	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	45.43	44.06	28.63	43.18	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.79	1.73	1.13	1.70	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.99			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.00			
K=H+J	total annual effective precipitation (inches)			8.35			
L=C-K	annual consumptive use of irrigation water (inches)			5.23			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**641.11**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.56	4.29	7.46	5.08	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.62	108.97	189.48	129.03	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.39			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.05	2.52	1.45	2.56	0.85	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	77.47	64.01	36.83	65.02	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	45.94	45.18	32.57	47.88	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.81	1.78	1.28	1.89	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.76			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.99			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.00			
K=H+J	total annual effective precipitation (inches)			8.76			
L=C-K	annual consumptive use of irrigation water (inches)			9.63			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**99.51**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.34	3.85	6.10	4.76	1.66	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.04	97.79	154.94	120.90	42.16	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.65			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.05	2.52	1.45	2.56	0.85	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	77.47	64.01	36.83	65.02	21.59	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	45.38	44.08	30.19	47.03	14.03	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.79	1.74	1.19	1.85	0.55	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.12			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.99			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.00			
K=H+J	total annual effective precipitation (inches)			9.12			
L=C-K	annual consumptive use of irrigation water (inches)			9.53			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,252.40**			

Table 2.1.4.235 Consumptive use of irrigation water, CU_W, calculations - 1977 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.33	3.82	6.04	4.71	1.65	0.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.78	97.03	153.42	119.63	41.91	23.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.48			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.05	2.52	1.45	2.56	0.85	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	77.47	64.01	36.83	65.02	21.59	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	45.35	44.01	30.09	46.90	14.02	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.79	1.73	1.18	1.85	0.55	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.10			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.99			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.00			
K=H+J	total annual effective precipitation (inches)			9.10			
L=C-K	annual consumptive use of irrigation water (inches)			9.38			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**568.27**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.94	1.30	5.93	8.26	3.72	1.23
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.88	33.02	150.62	209.80	94.49	31.24
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.38			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.05	2.52	1.45	2.56	0.85	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	77.47	64.01	36.83	65.02	21.59	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	44.38	38.23	29.91	57.19	15.74	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.75	1.51	1.18	2.25	0.62	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.31			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.99			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.00			
K=H+J	total annual effective precipitation (inches)			9.31			
L=C-K	annual consumptive use of irrigation water (inches)			12.07			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,451.82**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.66	2.55	5.64	7.89	7.27	4.35
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.16	64.77	143.26	200.41	184.66	110.49
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.36			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.05	2.52	1.45	2.56	0.85	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	77.47	64.01	36.83	65.02	21.59	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	46.20	40.99	29.43	56.02	19.19	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.82	1.61	1.16	2.21	0.76	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.56			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.99			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.00			
K=H+J	total annual effective precipitation (inches)			9.56			
L=C-K	annual consumptive use of irrigation water (inches)			19.80			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,032.10**			

Table 2.1.4.235 Consumptive use of irrigation water, CU_W, calculations - 1977 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	2.11	7.92	8.99	6.67	2.11
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.64	53.59	201.17	228.35	169.42	53.59
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.77			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.05	2.52	1.45	2.56	0.85	0.11
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	77.47	64.01	36.83	65.02	21.59	2.79
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	44.45	40.00	33.42	59.57	18.56	-0.02
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.75	1.57	1.32	2.35	0.73	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.72			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.99			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.00			
K=H+J	total annual effective precipitation (inches)			9.72			
L=C-K	annual consumptive use of irrigation water (inches)			19.05			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**18,322.93**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.46	4.98	5.57	6.85	3.36	2.31
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.53			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.54			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.01			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.99			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.00			
G=D+F	total annual effective precipitation (inches)			12.01			
H=B-G	annual consumptive use of irrigation water (inches)			13.52			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**18,715.06**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.47	2.84	5.45	5.96	3.44	2.86
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.02			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.54			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.01			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.99			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.00			
G=D+F	total annual effective precipitation (inches)			12.01			
H=B-G	annual consumptive use of irrigation water (inches)			10.01			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,258.08**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.88	1.86	3.83	4.21	3.88	2.97
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.63			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			10.54			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.01			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.99			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.00			
G=D+F	total annual effective precipitation (inches)			12.01			
H=B-G	annual consumptive use of irrigation water (inches)			5.62			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,153.18**			
	Total Horse Creek consumptive use of irrigation water during 1977 (acre-feet)			**64,494**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.236 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.20	5.45	8.18	5.47	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	55.88	138.43	207.77	138.94	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.30			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.04	3.17	1.16	2.33	1.45	0.10
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	26.42	80.52	29.46	59.18	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	17.67	59.06	27.43	44.99	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.70	2.33	1.08	1.77	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.88			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.09			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.05			
K=H+J	total annual effective precipitation (inches)			7.93			
L=C-K	annual consumptive use of irrigation water (inches)			13.37			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,638.94**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.44	3.47	6.74	4.91	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.58	88.14	171.20	124.71	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.56			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.04	3.17	1.16	2.33	1.45	0.10
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	26.42	80.52	29.46	59.18	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.94	52.88	25.31	43.60	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.67	2.08	1.00	1.72	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.47			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.09			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.05			
K=H+J	total annual effective precipitation (inches)			7.52			
L=C-K	annual consumptive use of irrigation water (inches)			9.04			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**93.41**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.87	4.73	8.36	6.98	2.23	1.26
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.50	120.14	212.34	177.29	56.64	32.00
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.43			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.04	3.17	1.16	2.33	1.45	0.10
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	26.42	80.52	29.46	59.18	36.83	2.54
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	17.35	56.73	27.71	48.94	24.32	-0.25
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.68	2.23	1.09	1.93	0.96	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.89			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.09			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.05			
K=H+J	total annual effective precipitation (inches)			8.94			
L=C-K	annual consumptive use of irrigation water (inches)			16.49			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,167.06**			

Table 2.1.4.236 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.90	4.80	8.48	7.08	2.26	1.28
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	48.26	121.92	215.39	179.83	57.40	32.51
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.80			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.04	3.17	1.16	2.33	1.45	0.10
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	26.42	80.52	29.46	59.18	36.83	2.54
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	17.38	56.96	27.90	49.22	24.36	-0.25
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.68	2.24	1.10	1.94	0.96	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.92			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.09			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.05			
K=H+J	total annual effective precipitation (inches)			8.97			
L=C-K	annual consumptive use of irrigation water (inches)			16.83			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,019.62**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.89	1.07	5.48	8.15	3.34	1.11
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.61	27.18	139.19	207.01	84.84	28.19
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.04			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.04	3.17	1.16	2.33	1.45	0.10
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	26.42	80.52	29.46	59.18	36.83	2.54
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.43	46.24	23.59	52.25	25.88	-0.25
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.65	1.82	0.93	2.06	1.02	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.48			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.09			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.05			
K=H+J	total annual effective precipitation (inches)			8.53			
L=C-K	annual consumptive use of irrigation water (inches)			11.51			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,245.27**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.58	2.13	5.26	7.86	6.62	3.97
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.13	54.10	133.60	199.64	168.15	100.84
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.42			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.04	3.17	1.16	2.33	1.45	0.10
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	26.42	80.52	29.46	59.18	36.83	2.54
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	17.07	49.06	23.31	51.41	31.08	-0.29
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.67	1.93	0.92	2.02	1.22	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.76			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.09			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.05			
K=H+J	total annual effective precipitation (inches)			8.81			
L=C-K	annual consumptive use of irrigation water (inches)			18.61			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,489.26**			

Table 2.1.4.236 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.91	1.74	7.32	8.88	6.01	1.91
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.11	44.20	185.93	225.55	152.65	48.51
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.77			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.04	3.17	1.16	2.33	1.45	0.10
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	26.42	80.52	29.46	59.18	36.83	2.54
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.45	48.01	26.15	54.42	30.04	-0.26
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.65	1.89	1.03	2.14	1.18	0.00
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.89			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			4.09			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.05			
K=H+J	total annual effective precipitation (inches)			8.94			
L=C-K	annual consumptive use of irrigation water (inches)			17.83			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,149.49**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.74	4.85	6.07	7.99	3.57	2.47
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.69			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.25			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.79			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.09			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			2.05			
G=D+F	total annual effective precipitation (inches)			10.84			
H=B-G	annual consumptive use of irrigation water (inches)			16.85			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**23,324.61**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.04	3.45	7.42	8.67	4.57	3.80
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.95			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.25			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.79			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.09			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.05			
G=D+F	total annual effective precipitation (inches)			10.84			
H=B-G	annual consumptive use of irrigation water (inches)			19.11			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,856.34**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.22	2.26	5.20	6.12	5.15	3.95
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.90			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			9.25			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.79			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			4.09			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			2.05			
G=D+F	total annual effective precipitation (inches)			10.84			
H=B-G	annual consumptive use of irrigation water (inches)			13.06			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,651.34**			
	Total Horse Creek consumptive use of irrigation water during 1978 (acre-feet)			**81,635**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.237 Consumptive use of irrigation water, CU_W, calculations - 1981 - normal or average stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.49	5.42	7.89	4.97	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	63.25	137.67	200.41	126.24	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.77			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.32	4.68	2.31	2.92	1.21	0.64
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.53	118.87	58.67	74.17	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.59	82.78	51.10	53.48	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.89	3.26	2.01	2.11	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.27			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.82			
K=H+J	total annual effective precipitation (inches)			10.09			
L=C-K	annual consumptive use of irrigation water (inches)			10.68			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,309.19**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.62	3.41	6.43	4.41	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.15	86.61	163.32	112.01	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.87			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.32	4.68	2.31	2.92	1.21	0.64
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.53	118.87	58.67	74.17	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.52	73.99	47.10	51.84	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.85	2.91	1.85	2.04	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.65			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.82			
K=H+J	total annual effective precipitation (inches)			9.47			
L=C-K	annual consumptive use of irrigation water (inches)			6.40			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**66.13**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.70	3.76	6.45	5.07	1.69	0.92
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.18	95.50	163.83	128.78	42.93	23.37
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.59			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.32	4.68	2.31	2.92	1.21	0.64
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.53	118.87	58.67	74.17	30.73	16.26
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.62	75.45	47.15	53.78	19.88	10.01
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.85	2.97	1.86	2.12	0.78	0.39
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.97			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.82			
K=H+J	total annual effective precipitation (inches)			10.79			
L=C-K	annual consumptive use of irrigation water (inches)			8.80			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,156.47**			

Table 2.1.4.237 Consumptive use of irrigation water, CU_W, calculations - 1981 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.26	4.99	8.57	6.73	2.25	1.22
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	57.40	126.75	217.68	170.94	57.15	30.99
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.02			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.32	4.68	2.31	2.92	1.21	0.64
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.53	118.87	58.67	74.17	30.73	16.26
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.30	80.82	53.08	59.01	20.51	10.18
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.88	3.18	2.09	2.32	0.81	0.40
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.68			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.82			
K=H+J	total annual effective precipitation (inches)			11.50			
L=C-K	annual consumptive use of irrigation water (inches)			14.52			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**879.67**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	1.28	6.37	8.92	3.83	1.22
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.73	32.51	161.80	226.57	97.28	30.99
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.83			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.32	4.68	2.31	2.92	1.21	0.64
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.53	118.87	58.67	74.17	30.73	16.26
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.03	65.69	46.94	66.69	22.41	10.18
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.83	2.59	1.85	2.63	0.88	0.40
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.18			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.82			
K=H+J	total annual effective precipitation (inches)			11.00			
L=C-K	annual consumptive use of irrigation water (inches)			11.83			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,363.30**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.08	2.45	5.89	8.29	7.29	4.21
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	52.83	62.23	149.61	210.57	185.17	106.93
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			30.21			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.32	4.68	2.31	2.92	1.21	0.64
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.53	118.87	58.67	74.17	30.73	16.26
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.08	70.13	45.70	64.38	27.18	12.03
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.87	2.76	1.80	2.53	1.07	0.47
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.50			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.82			
K=H+J	total annual effective precipitation (inches)			11.32			
L=C-K	annual consumptive use of irrigation water (inches)			18.89			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**8,616.99**			

Table 2.1.4.237 Consumptive use of irrigation water, CU_W, calculations - 1981 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	2.03	8.27	9.45	6.69	2.04
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.73	51.56	210.06	240.03	169.93	51.82
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.69			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.32	4.68	2.31	2.92	1.21	0.64
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	33.53	118.87	58.67	74.17	30.73	16.26
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.03	68.50	52.19	68.69	26.29	10.66
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.83	2.70	2.05	2.70	1.04	0.42
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.74			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.63			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.82			
K=H+J	total annual effective precipitation (inches)			11.56			
L=C-K	annual consumptive use of irrigation water (inches)			18.13			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,438.04**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.39	5.26	6.38	7.91	3.70	2.45
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.09			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.08			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.43			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.63			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.82			
G=D+F	total annual effective precipitation (inches)			14.25			
H=B-G	annual consumptive use of irrigation water (inches)			14.84			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**20,542.27**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.30	3.41	7.11	7.83	4.31	3.45
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.41			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.08			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.43			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.63			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.82			
G=D+F	total annual effective precipitation (inches)			14.25			
H=B-G	annual consumptive use of irrigation water (inches)			14.16			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,267.18**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.38	2.24	4.99	5.53	4.86	3.59
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.59			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			13.08			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.43			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.63			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.82			
G=D+F	total annual effective precipitation (inches)			14.25			
H=B-G	annual consumptive use of irrigation water (inches)			8.34			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**6,163.26**			
	Total Horse Creek consumptive use of irrigation water during 1981 (acre-feet)			**70,803**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.238 Consumptive use of irrigation water, CU_W, calculations - 1975 - normal or average stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.99	5.55	7.71	5.59	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.55	140.97	195.83	141.99	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.84			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.36	2.67	0.63	1.29	0.54	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	67.82	16.00	32.77	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.59	51.03	14.38	26.28	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.89	2.01	0.57	1.03	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.50			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			5.64			
L=C-K	annual consumptive use of irrigation water (inches)			15.20			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,863.27**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.63	4.42	7.93	6.26	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.40	112.27	201.42	159.00	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.24			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.36	2.67	0.63	1.29	0.54	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	67.82	16.00	32.77	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.14	47.91	14.56	27.29	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.87	1.89	0.57	1.07	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.40			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			5.54			
L=C-K	annual consumptive use of irrigation water (inches)			14.70			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**151.90**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.73	4.90	8.02	7.26	2.42	1.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.94	124.46	203.71	184.40	61.47	27.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.43			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.36	2.67	0.63	1.29	0.54	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	67.82	16.00	32.77	13.72	12.70
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.27	49.21	14.63	28.85	9.03	7.68
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.88	1.94	0.58	1.14	0.36	0.30
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.20			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			6.34			
L=C-K	annual consumptive use of irrigation water (inches)			19.09			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,508.74**			

Table 2.1.4.238 Consumptive use of irrigation water, CU_W, calculations - 1975 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.40	3.96	6.48	5.86	1.95	0.89
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.56	100.58	164.59	148.84	49.53	22.61
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.54			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.36	2.67	0.63	1.29	0.54	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	67.82	16.00	32.77	13.72	12.70
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.86	46.70	13.42	26.68	8.79	7.59
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.86	1.84	0.53	1.05	0.35	0.30
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.93			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			6.07			
L=C-K	annual consumptive use of irrigation water (inches)			14.47			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**876.64**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	1.16	5.48	8.84	3.80	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.59	29.46	139.19	224.54	96.52	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.14			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.36	2.67	0.63	1.29	0.54	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	67.82	16.00	32.77	13.72	12.70
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.20	39.93	12.69	31.52	9.75	7.64
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.83	1.57	0.50	1.24	0.38	0.30
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.82			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			5.96			
L=C-K	annual consumptive use of irrigation water (inches)			15.18			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,598.89**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.58	2.38	5.43	8.81	7.76	3.74
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.13	60.45	137.92	223.77	197.10	95.00
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.70			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.36	2.67	0.63	1.29	0.54	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	67.82	16.00	32.77	13.72	12.70
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	22.08	42.75	12.66	31.46	12.17	8.90
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.87	1.68	0.50	1.24	0.48	0.35
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.12			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			6.26			
L=C-K	annual consumptive use of irrigation water (inches)			23.44			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,692.55**			

Table 2.1.4.238 Consumptive use of irrigation water, CUW, calculations - 1975 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.84	1.80	6.98	9.20	6.51	1.66
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.34	45.72	177.29	233.68	165.35	42.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.99			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.36	2.67	0.63	1.29	0.54	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	34.54	67.82	16.00	32.77	13.72	12.70
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	21.19	41.39	13.80	32.16	11.34	7.92
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.83	1.63	0.54	1.27	0.45	0.31
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.03			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
K=H+J	total annual effective precipitation (inches)			6.17			
L=C-K	annual consumptive use of irrigation water (inches)			20.82			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**20,025.37**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.42	4.82	5.56	7.95	3.72	2.06
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.53			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.99			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.64			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.14			
G=D+F	total annual effective precipitation (inches)			7.78			
H=B-G	annual consumptive use of irrigation water (inches)			18.75			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**25,954.69**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.86	3.52	7.01	8.89	4.90	3.27
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.45			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.99			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.64			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.14			
G=D+F	total annual effective precipitation (inches)			7.78			
H=B-G	annual consumptive use of irrigation water (inches)			21.67			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**15,712.56**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.86	3.52	7.01	8.89	4.90	3.27
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.45			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			6.99			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			6.64			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.28			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.14			
G=D+F	total annual effective precipitation (inches)			7.78			
H=B-G	annual consumptive use of irrigation water (inches)			21.67			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**16,014.13**			
	Total Horse Creek consumptive use of irrigation water during 1975 (acre-feet)			**99,399**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.239 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Horse Creek subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.19	6.38	7.69	5.12	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	55.63	162.05	195.33	130.05	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.38			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.99	4.48	4.36	0.55	0.80	1.72
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	113.79	110.74	13.97	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.83	84.10	88.39	10.71	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.66	3.31	3.48	0.42	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.87			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			9.78			
L=C-K	annual consumptive use of irrigation water (inches)			11.60			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			1,471			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,421.97**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.60	4.55	7.09	5.13	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.64	115.57	180.09	130.30	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.37			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.99	4.48	4.36	0.55	0.80	1.72
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	113.79	110.74	13.97	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.28	75.93	85.47	10.72	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	2.99	3.36	0.42	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.41			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			9.32			
L=C-K	annual consumptive use of irrigation water (inches)			9.05			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			124			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**93.52**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.88	5.60	7.96	6.61	2.28	1.14
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	47.75	142.24	202.18	167.89	57.91	28.96
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.47			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.99	4.48	4.36	0.55	0.80	1.72
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	113.79	110.74	13.97	20.32	43.69
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.54	80.52	89.73	11.64	13.65	26.82
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.65	3.17	3.53	0.46	0.54	1.06
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.41			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			11.32			
L=C-K	annual consumptive use of irrigation water (inches)			14.15			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			1,577			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,859.55**			

Table 2.1.4.239 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.83	5.45	7.74	6.43	2.22	1.11
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.48	138.43	196.60	163.32	56.39	28.19
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.78			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.99	4.48	4.36	0.55	0.80	1.72
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	113.79	110.74	13.97	20.32	43.69
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.49	79.85	88.63	11.53	13.61	26.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.65	3.14	3.49	0.45	0.54	1.05
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.32			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			11.23			
L=C-K	annual consumptive use of irrigation water (inches)			13.55			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			727			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**820.90**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	1.39	5.72	8.47	3.75	1.10
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.64	35.31	145.29	215.14	95.25	27.94
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.40			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.99	4.48	4.36	0.55	0.80	1.72
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	113.79	110.74	13.97	20.32	43.69
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.72	63.65	79.18	12.92	14.82	26.76
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.62	2.51	3.12	0.51	0.58	1.05
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.39			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			10.30			
L=C-K	annual consumptive use of irrigation water (inches)			11.10			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			4,426			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**4,094.05**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.54	2.44	4.86	7.23	6.58	3.47
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.12	61.98	123.44	183.64	167.13	88.14
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.12			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.99	4.48	4.36	0.55	0.80	1.72
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	113.79	110.74	13.97	20.32	43.69
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.23	67.49	75.46	12.05	17.36	30.54
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	2.66	2.97	0.47	0.68	1.20
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.62			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			10.53			
L=C-K	annual consumptive use of irrigation water (inches)			15.59			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			5,474			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,111.64**			

Table 2.1.4.239 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - Horse Creek subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.01	2.28	7.71	9.30	6.81	1.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.65	57.91	195.83	236.22	172.97	48.26
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			29.01			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.99	4.48	4.36	0.55	0.80	1.72
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	113.79	110.74	13.97	20.32	43.69
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.76	66.89	88.48	13.53	17.58	27.98
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.62	2.63	3.48	0.53	0.69	1.10
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.05			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
K=H+J	total annual effective precipitation (inches)			10.96			
L=C-K	annual consumptive use of irrigation water (inches)			18.05			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			11,542			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**17,361.09**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.63	5.49	5.52	7.21	3.49	2.11
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			26.45			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.90			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.26			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.91			
G=D+F	total annual effective precipitation (inches)			14.17			
H=B-G	annual consumptive use of irrigation water (inches)			12.28			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			16,611			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**16,998.59**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	3.32	5.74	6.67	3.80	2.78
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.98			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.90			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.26			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.91			
G=D+F	total annual effective precipitation (inches)			14.17			
H=B-G	annual consumptive use of irrigation water (inches)			9.81			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			8,701			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,113.07**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	2.18	4.02	4.71	4.28	2.89
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.08			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			12.90			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			12.26			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.82			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.91			
G=D+F	total annual effective precipitation (inches)			14.17			
H=B-G	annual consumptive use of irrigation water (inches)			4.91			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			8,868			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,628.49**			
	Total Horse Creek consumptive use of irrigation water during 1991 (acre-feet)			**60,503**			

Notes:
(1) See Table 2.1.4.83.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.240 Summary – consumptive use of irrigation water - Horse Creek subbasin

No.	Year	Consumptive use of irrigation water (acre-feet)		
1	1986	72,820	**High stream flow years:**	
2	1984	54,049	**Average:**	**63,036**
3	1985	63,116	**Maximum:**	**72,820**
4	1973	62,158	**Minimum:**	**54,049**
5	1974	91,727		
6	1983	51,666		
7	1988	71,269		
8	1982	56,983		
9	1987	77,587		
10	1979	56,597		
11	1976	69,835		
12	1980	66,363		
13	1977	64,494	**Normal or average stream flow**	
14	1978	81,635	**years:**	
15	1981	70,803	**Average:**	**70,682**
16	1975	99,399	**Maximum:**	**99,399**
17	1991	60,503	**Minimum:**	**51,666**
18	1972	74,399	**Low stream flow years:**	
19	1989	60,761	**Average:**	**61,281**
20	1990	45,727	**Maximum:**	**74,399**
21	1992	64,238	**Minimum:**	**45,727**
	Average:	**67,435**		
	Maximum:	**99,399**		
	Minimum:	**45,727**		
		designates high stream flow years		
		designates low stream flow years		

Years which are neither shaded or outlined are normal or average stream flow years

See Table 3.1.1.5. in Technical Memorandum 3.1., Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year Determination

2.1.4.9.7 Consumptive Use of Irrigation Water – South Platte Subbasin

Table 2.1.4.241 through Table 2.1.4.261 contain unit and annual consumptive use calculation parameters and results for all crops under consideration during each high, low, and normal or average stream flow year in the South Platte subbasin. Annual consumptive use values for the South Platte subbasin are summarized in Table 2.1.4.262.

Table 2.1.4.241 Consumptive use of irrigation water, CU_W, calculations - 1986 - high stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.01	5.46	7.45	4.90	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	51.05	138.68	189.23	124.46	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.82					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.68	1.10	2.70	1.15	1.18	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	68.07	27.94	68.58	29.21	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	42.01	22.39	57.31	22.66	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.65	0.88	2.26	0.89	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	5.68					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.74					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.87					
K=H+J	total annual effective precipitation (inches)	7.55					
L=C-K	annual consumptive use of irrigation water (inches)	12.27					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,723.95**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.64	4.33	7.65	5.47	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.66	109.98	194.31	138.94	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.09					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.68	1.10	2.70	1.15	1.18	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	68.07	27.94	68.58	29.21	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	41.15	21.02	57.95	23.39	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.62	0.83	2.28	0.92	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	5.65					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.74					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.87					
K=H+J	total annual effective precipitation (inches)	7.52					
L=C-K	annual consumptive use of irrigation water (inches)	11.57					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**439.66**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.74	4.81	7.73	6.34	2.06	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.20	122.17	196.34	161.04	52.32	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	23.62					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	2.68	1.10	2.70	1.15	1.18	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	68.07	27.94	68.58	29.21	29.97	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	41.39	21.59	58.21	24.55	19.82	26.23
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.63	0.85	2.29	0.97	0.78	1.03
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.55					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.74					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.87					
K=H+J	total annual effective precipitation (inches)	9.42					
L=C-K	annual consumptive use of irrigation water (inches)	14.20					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,694.45**					

Table 2.1.4.241 Consumptive use of irrigation water, CU_W, calculations - 1986 - high stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.74	4.81	7.73	6.34	2.06	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	44.20	122.17	196.34	161.04	52.32	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	23.62					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.68	1.10	2.70	1.15	1.18	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	68.07	27.94	68.58	29.21	29.97	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	41.39	21.59	58.21	24.55	19.82	26.23
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.63	0.85	2.29	0.97	0.78	1.03
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.55					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.74					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.87					
K=H+J	total annual effective precipitation (inches)	9.42					
L=C-K	annual consumptive use of irrigation water (inches)	14.20					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,078.02**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	1.12	5.24	7.66	3.19	0.86
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.59	28.45	133.10	194.56	81.03	21.84
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.92					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.68	1.10	2.70	1.15	1.18	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	68.07	27.94	68.58	29.21	29.97	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	39.38	17.57	50.66	26.43	21.11	26.12
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.55	0.69	1.99	1.04	0.83	1.03
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.13					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.74					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.87					
K=H+J	total annual effective precipitation (inches)	9.00					
L=C-K	annual consumptive use of irrigation water (inches)	9.92					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,882.32**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.60	2.36	5.31	7.81	6.68	3.24
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.64	59.94	134.87	198.37	169.67	82.30
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	27.00					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.68	1.10	2.70	1.15	1.18	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	68.07	27.94	68.58	29.21	29.97	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	41.06	18.83	50.85	26.65	25.65	29.83
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.62	0.74	2.00	1.05	1.01	1.17
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.59					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.74					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.87					
K=H+J	total annual effective precipitation (inches)	9.46					
L=C-K	annual consumptive use of irrigation water (inches)	17.54					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,331.58**					

Table 2.1.4.241 Consumptive use of irrigation water, CU_W, calculations - 1986 - high stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.93	1.95	7.46	8.90	6.12	1.57
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.62	49.53	189.48	226.06	155.45	39.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	26.93					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	2.68	1.10	2.70	1.15	1.18	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	68.07	27.94	68.58	29.21	29.97	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	39.55	18.40	57.34	28.33	24.86	27.17
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.56	0.72	2.26	1.12	0.98	1.07
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.71					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.74					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.87					
K=H+J	total annual effective precipitation (inches)	9.58					
L=C-K	annual consumptive use of irrigation water (inches)	17.35					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,292.16**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.61	5.06	5.76	7.45	3.39	1.89
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	26.16					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	10.50					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	9.98					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.74					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.87					
G=D+F	total annual effective precipitation (inches)	11.85					
H=B-G	annual consumptive use of irrigation water (inches)	14.31					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**16,301.48**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.87	3.45	6.76	7.76	4.16	0.00
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.00					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	10.50					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	9.98					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.74					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.87					
G=D+F	total annual effective precipitation (inches)	11.85					
H=B-G	annual consumptive use of irrigation water (inches)	12.15					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**16,334.66**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	2.27	4.74	5.48	4.69	2.91
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.21					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	10.50					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	9.98					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.74					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.87					
G=D+F	total annual effective precipitation (inches)	11.85					
H=B-G	annual consumptive use of irrigation water (inches)	9.36					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,262.00**					
	Total South Platte consumptive use of irrigation water during 1986 (acre-feet)	**49,340**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.242 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - South Platte subbasin

Crop							
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.54	5.95	7.04	4.80	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.12	151.13	178.82	121.92	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.33					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.35	0.85	2.74	2.80	2.05	0.87
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	85.09	21.59	69.60	71.12	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	49.83	17.83	56.75	51.05	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.96	0.70	2.23	2.01	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	6.90					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.77					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.39					
K=H+J	total annual effective precipitation (inches)	9.29					
L=C-K	annual consumptive use of irrigation water (inches)	10.04					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,047.14**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	4.34	6.63	4.92	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.21	110.24	168.40	124.97	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.04					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.35	0.85	2.74	2.80	2.05	0.87
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	85.09	21.59	69.60	71.12	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	48.76	16.29	55.47	51.39	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.92	0.64	2.18	2.02	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	6.76					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.77					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.39					
K=H+J	total annual effective precipitation (inches)	9.15					
L=C-K	annual consumptive use of irrigation water (inches)	7.89					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**299.82**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.33	5.24	7.30	6.22	2.02	0.98
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.78	133.10	185.42	157.99	51.31	24.89
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	23.09					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.35	0.85	2.74	2.80	2.05	0.87
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	85.09	21.59	69.60	71.12	52.07	22.10
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	49.25	17.13	57.58	55.26	33.06	13.83
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.94	0.67	2.27	2.18	1.30	0.54
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.90					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.77					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.39					
K=H+J	total annual effective precipitation (inches)	11.29					
L=C-K	annual consumptive use of irrigation water (inches)	11.80					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,239.05**					

Table 2.1.4.242 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.23	4.84	6.75	5.75	1.87	0.91
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	31.24	122.94	171.45	146.05	47.50	23.11
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.35					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.35	0.85	2.74	2.80	2.05	0.87
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	85.09	21.59	69.60	71.12	52.07	22.10
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	48.98	16.75	55.84	53.83	32.78	13.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.93	0.66	2.20	2.12	1.29	0.54
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.74					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.77					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.39					
K=H+J	total annual effective precipitation (inches)	11.13					
L=C-K	annual consumptive use of irrigation water (inches)	10.22					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**775.87**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.71	1.34	5.43	8.23	3.44	0.98
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	18.03	34.04	137.92	209.04	87.38	24.89
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.13					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.35	0.85	2.74	2.80	2.05	0.87
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	85.09	21.59	69.60	71.12	52.07	22.10
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	47.57	13.78	51.87	61.82	35.79	13.83
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.87	0.54	2.04	2.43	1.41	0.54
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.83					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.77					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.39					
K=H+J	total annual effective precipitation (inches)	11.22					
L=C-K	annual consumptive use of irrigation water (inches)	8.91					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,690.67**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.70	1.46	2.84	4.34	3.72	1.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	17.78	37.08	72.14	110.24	94.49	48.26
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	14.96					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.35	0.85	2.74	2.80	2.05	0.87
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	85.09	21.59	69.60	71.12	52.07	22.10
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	47.55	13.87	44.88	49.75	36.35	14.56
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.87	0.55	1.77	1.96	1.43	0.57
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.15					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.77					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.39					
K=H+J	total annual effective precipitation (inches)	10.54					
L=C-K	annual consumptive use of irrigation water (inches)	4.42					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**335.55**					

Table 2.1.4.242 Consumptive use of irrigation water, CU_W, calculations - 1984 - high stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.68	2.03	6.73	8.33	5.75	1.56
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	17.27	51.56	170.94	211.58	146.05	39.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	25.08					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.35	0.85	2.74	2.80	2.05	0.87
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	85.09	21.59	69.60	71.12	52.07	22.10
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	47.50	14.32	55.78	62.17	40.72	14.28
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.87	0.56	2.20	2.45	1.60	0.56
H	calculated effective precipitation, Re, Apr-Sep (inches)	9.24					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.77					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.39					
K=H+J	total annual effective precipitation (inches)	11.63					
L=C-K	annual consumptive use of irrigation water (inches)	13.45					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,552.14**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.93	5.34	5.26	7.06	3.22	1.90
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.71					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	12.64					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	12.01					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.77					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.39					
G=D+F	total annual effective precipitation (inches)	14.40					
H=B-G	annual consumptive use of irrigation water (inches)	10.31					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**11,744.81**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	2.81	4.76	5.68	3.05	2.16
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.53					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	12.64					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	12.01					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.77					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.39					
G=D+F	total annual effective precipitation (inches)	14.40					
H=B-G	annual consumptive use of irrigation water (inches)	5.13					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**6,896.86**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.64	1.84	3.33	4.01	3.44	2.25
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	15.51					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	12.64					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	12.01					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.77					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.39					
G=D+F	total annual effective precipitation (inches)	14.40					
H=B-G	annual consumptive use of irrigation water (inches)	1.11					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**268.25**					
	Total South Platte consumptive use of irrigation water during 1984 (acre-feet)	**29,850**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.243 Consumptive use of irrigation water, CU_W, calculations - 1985 - high stream flow year - South Platte subbasin

Crop							
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.69	4.65	5.69	3.63	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.93	118.11	144.53	92.20	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	15.66					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.98	0.98	1.42	2.90	3.60	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.89	24.89	36.07	73.66	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.20	19.11	28.94	49.32	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	0.75	1.14	1.94	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	4.47					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.09					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.55					
K=H+J	total annual effective precipitation (inches)	6.02					
L=C-K	annual consumptive use of irrigation water (inches)	9.64					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,925.74**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.39	3.70	5.86	4.08	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.31	93.98	148.84	103.63	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	15.03					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.98	0.98	1.42	2.90	3.60	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.89	24.89	36.07	73.66	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.93	18.12	29.21	50.58	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.63	0.71	1.15	1.99	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	4.48					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.09					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.55					
K=H+J	total annual effective precipitation (inches)	6.03					
L=C-K	annual consumptive use of irrigation water (inches)	9.00					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**342.00**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.93	5.38	7.77	6.19	2.17	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.02	136.65	197.36	157.23	55.12	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.38					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.98	0.98	1.42	2.90	3.60	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.89	24.89	36.07	73.66	91.44	53.85
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.42	19.91	32.50	56.91	54.97	32.09
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.65	0.78	1.28	2.24	2.16	1.26
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.37					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.09					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.55					
K=H+J	total annual effective precipitation (inches)	9.92					
L=C-K	annual consumptive use of irrigation water (inches)	14.46					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,743.79**					

Table 2.1.4.243 Consumptive use of irrigation water, CU_W, calculations - 1985 - high stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.64	4.58	6.61	5.27	1.85	0.80
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.66	116.33	167.89	133.86	46.99	20.32
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.75					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.98	0.98	1.42	2.90	3.60	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.89	24.89	36.07	73.66	91.44	53.85
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.15	19.04	30.46	54.06	54.00	31.84
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	0.75	1.20	2.13	2.13	1.25
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.10					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.09					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.55					
K=H+J	total annual effective precipitation (inches)	9.65					
L=C-K	annual consumptive use of irrigation water (inches)	11.10					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**842.68**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	1.33	5.57	7.91	3.57	0.91
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.15	33.78	141.48	200.91	90.68	23.11
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.28					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.98	0.98	1.42	2.90	3.60	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.89	24.89	36.07	73.66	91.44	53.85
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.58	15.88	28.74	62.64	59.44	32.03
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.61	0.63	1.13	2.47	2.34	1.26
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.44					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.09					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.55					
K=H+J	total annual effective precipitation (inches)	9.99					
L=C-K	annual consumptive use of irrigation water (inches)	10.29					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,952.53**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.78	2.64	5.34	7.62	7.05	3.24
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.21	67.06	135.64	193.55	179.07	82.30
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	27.67					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.98	0.98	1.42	2.90	3.60	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.89	24.89	36.07	73.66	91.44	53.85
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.28	17.08	28.38	61.64	72.20	36.48
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	0.67	1.12	2.43	2.84	1.44
H	calculated effective precipitation, Re, Apr-Sep (inches)	9.14					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.09					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.55					
K=H+J	total annual effective precipitation (inches)	10.69					
L=C-K	annual consumptive use of irrigation water (inches)	16.98					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,289.07**					

Table 2.1.4.243 Consumptive use of irrigation water, CU_W, calculations - 1985 - high stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.95	2.01	6.90	7.98	5.95	1.44
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.13	51.05	175.26	202.69	151.13	36.58
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	25.23					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.98	0.98	1.42	2.90	3.60	2.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	24.89	24.89	36.07	73.66	91.44	53.85
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.54	16.49	30.96	62.89	67.90	32.99
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.61	0.65	1.22	2.48	2.67	1.30
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.93					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.09					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.55					
K=H+J	total annual effective precipitation (inches)	10.48					
L=C-K	annual consumptive use of irrigation water (inches)	14.75					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,798.81**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.64	5.17	5.28	6.62	3.26	1.72
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.69					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.98					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	11.38					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.09					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.55					
G=D+F	total annual effective precipitation (inches)	12.93					
H=B-G	annual consumptive use of irrigation water (inches)	11.76					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**13,396.60**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.90	3.55	6.23	6.95	4.03	2.57
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	25.23					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.98					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	11.38					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.09					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.55					
G=D+F	total annual effective precipitation (inches)	12.93					
H=B-G	annual consumptive use of irrigation water (inches)	12.30					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**16,536.33**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	2.33	4.37	4.91	4.54	2.67
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.96					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.98					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	11.38					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.09					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.55					
G=D+F	total annual effective precipitation (inches)	12.93					
H=B-G	annual consumptive use of irrigation water (inches)	7.03					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,698.92**					
	Total South Platte consumptive use of irrigation water during 1985 (acre-feet)	**44,526**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.244 Consumptive use of irrigation water, CU_W, calculations - 1973 - high stream flow year - South Platte subbasin

Crop							
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.62	5.34	6.98	4.03	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.15	135.64	177.29	102.36	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.97					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.73	0.51	1.20	5.01	0.27	4.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	12.95	30.48	127.25	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.69	9.95	26.51	81.23	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.09	0.39	1.04	3.20	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	5.72					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.83					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.42					
K=H+J	total annual effective precipitation (inches)	8.14					
L=C-K	annual consumptive use of irrigation water (inches)	9.83					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,983.41**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.21	3.92	6.63	4.17	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.73	99.57	168.40	105.92	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	15.93					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.73	0.51	1.20	5.01	0.27	4.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	12.95	30.48	127.25	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.06	9.19	26.00	81.87	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.07	0.36	1.02	3.22	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	5.67					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.83					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.42					
K=H+J	total annual effective precipitation (inches)	8.09					
L=C-K	annual consumptive use of irrigation water (inches)	7.84					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**297.92**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.42	4.81	7.40	5.33	1.95	0.84
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.07	122.17	187.96	135.38	49.53	21.34
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.75					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.73	0.51	1.20	5.01	0.27	4.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	12.95	30.48	127.25	6.86	114.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.38	9.66	27.14	87.35	3.55	62.20
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.08	0.38	1.07	3.44	0.14	2.45
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.56					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.83					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.42					
K=H+J	total annual effective precipitation (inches)	10.98					
L=C-K	annual consumptive use of irrigation water (inches)	10.77					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,043.61**					

Table 2.1.4.244 Consumptive use of irrigation water, CU_W, calculations - 1973 - high stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.42	4.81	7.40	5.33	1.95	0.84
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.07	122.17	187.96	135.38	49.53	21.34
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.75					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.73	0.51	1.20	5.01	0.27	4.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	12.95	30.48	127.25	6.86	114.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.38	9.66	27.14	87.35	3.55	62.20
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.08	0.38	1.07	3.44	0.14	2.45
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.56					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.83					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.42					
K=H+J	total annual effective precipitation (inches)	10.98					
L=C-K	annual consumptive use of irrigation water (inches)	10.77					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**817.62**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.73	1.19	5.31	6.81	3.20	0.81
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	18.54	30.23	134.87	172.97	81.28	20.57
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.05					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.73	0.51	1.20	5.01	0.27	4.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	12.95	30.48	127.25	6.86	114.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.35	7.89	24.15	94.87	3.80	62.09
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.04	0.31	0.95	3.74	0.15	2.44
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.63					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.83					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.42					
K=H+J	total annual effective precipitation (inches)	11.05					
L=C-K	annual consumptive use of irrigation water (inches)	7.00					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,328.25**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.02	1.84	3.97	5.13	4.95	2.26
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.91	46.74	100.84	130.30	125.73	57.40
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.17					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.73	0.51	1.20	5.01	0.27	4.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	12.95	30.48	127.25	6.86	114.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.78	8.18	22.41	86.38	4.19	67.33
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.05	0.32	0.88	3.40	0.16	2.65
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.46					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.83					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.42					
K=H+J	total annual effective precipitation (inches)	10.88					
L=C-K	annual consumptive use of irrigation water (inches)	8.29					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**629.35**					

Table 2.1.4.244 Consumptive use of irrigation water, CU_W, calculations - 1973 - high stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.76	1.95	7.14	7.48	5.80	1.40
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	19.30	49.53	181.36	189.99	147.32	35.56
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.53					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.73	0.51	1.20	5.01	0.27	4.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	43.94	12.95	30.48	127.25	6.86	114.81
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	26.39	8.23	26.75	98.49	4.40	64.17
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.04	0.32	1.05	3.88	0.17	2.53
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.99					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.83					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.42					
K=H+J	total annual effective precipitation (inches)	11.41					
L=C-K	annual consumptive use of irrigation water (inches)	13.12					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,489.52**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.00	4.74	5.16	5.86	3.01	1.57
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	22.34					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	13.06					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	12.41					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.83					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.42					
G=D+F	total annual effective precipitation (inches)	14.83					
H=B-G	annual consumptive use of irrigation water (inches)	7.51					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**8,555.14**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.41	3.17	5.95	6.00	3.62	2.29
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	22.44					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	13.06					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	12.41					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.83					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.42					
G=D+F	total annual effective precipitation (inches)	14.83					
H=B-G	annual consumptive use of irrigation water (inches)	7.61					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**10,231.01**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	2.09	4.17	4.24	4.08	2.38
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.81					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	13.06					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	12.41					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.83					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.42					
G=D+F	total annual effective precipitation (inches)	14.83					
H=B-G	annual consumptive use of irrigation water (inches)	2.98					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**720.17**					
	Total South Platte consumptive use of irrigation water during 1973 (acre-feet)	**30,096**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.245 Consumptive use of irrigation water, CU_W, calculations - 1972 - low stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.97	5.38	7.29	4.51	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.04	136.65	185.17	114.55	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.15					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.69	2.49	1.55	3.90	1.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	68.33	63.25	39.37	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.62	50.89	52.85	29.40	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.65	2.00	2.08	1.16	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	5.89					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.10					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.05					
K=H+J	total annual effective precipitation (inches)	6.94					
L=C-K	annual consumptive use of irrigation water (inches)	12.21					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,705.74**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.53	4.06	7.11	4.78	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.86	103.12	180.59	121.41	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.48					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.69	2.49	1.55	3.90	1.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	68.33	63.25	39.37	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.22	47.27	52.32	29.85	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	1.86	2.06	1.18	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	5.74					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.10					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.05					
K=H+J	total annual effective precipitation (inches)	6.79					
L=C-K	annual consumptive use of irrigation water (inches)	10.69					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**406.22**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.70	4.74	7.56	5.83	1.93	1.04
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.18	120.40	192.02	148.08	49.02	26.42
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	22.80					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.69	2.49	1.55	3.90	1.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	68.33	63.25	39.37	99.06	28.45
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.38	49.10	53.66	31.65	58.16	17.80
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	1.93	2.11	1.25	2.29	0.70
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.92					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.10					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.05					
K=H+J	total annual effective precipitation (inches)	9.97					
L=C-K	annual consumptive use of irrigation water (inches)	12.83					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,434.49**					

Table 2.1.4.245 Consumptive use of irrigation water, CU_W, calculations - 1972 - low stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.60	4.45	7.10	5.48	1.81	0.98
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.64	113.03	180.34	139.19	45.97	24.89
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.42					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.69	2.49	1.55	3.90	1.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	68.33	63.25	39.37	99.06	28.45
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.28	48.31	52.30	31.04	57.77	17.74
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	1.90	2.06	1.22	2.27	0.70
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.79					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.10					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.05					
K=H+J	total annual effective precipitation (inches)	9.84					
L=C-K	annual consumptive use of irrigation water (inches)	11.58					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**879.12**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.89	1.18	5.48	7.53	3.20	1.02
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.61	29.97	139.19	191.26	81.28	25.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.30					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.69	2.49	1.55	3.90	1.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	68.33	63.25	39.37	99.06	28.45
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.65	40.25	47.77	34.80	62.44	17.78
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.62	1.58	1.88	1.37	2.46	0.70
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.61					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.10					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.05					
K=H+J	total annual effective precipitation (inches)	9.66					
L=C-K	annual consumptive use of irrigation water (inches)	9.64					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,829.19**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.57	2.33	5.20	7.18	6.26	3.56
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.88	59.18	132.08	182.37	159.00	90.42
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	26.10					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.69	2.49	1.55	3.90	1.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	68.33	63.25	39.37	99.06	28.45
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	16.26	42.92	47.03	34.13	74.07	20.49
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.64	1.69	1.85	1.34	2.92	0.81
H	calculated effective precipitation, Re, Apr-Sep (inches)	9.25					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.10					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.05					
K=H+J	total annual effective precipitation (inches)	10.30					
L=C-K	annual consumptive use of irrigation water (inches)	15.80					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,199.48**					

Table 2.1.4.245 Consumptive use of irrigation water, CU_W, calculations - 1972 - low stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	1.80	6.81	7.63	5.35	1.61
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.59	45.72	172.97	193.80	135.89	40.89
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.05					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.99	2.69	2.49	1.55	3.90	1.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	25.15	68.33	63.25	39.37	99.06	28.45
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	15.62	41.66	51.45	35.00	70.40	18.38
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.61	1.64	2.03	1.38	2.77	0.72
H	calculated effective precipitation, Re, Apr-Sep (inches)	9.15					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.10					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.05					
K=H+J	total annual effective precipitation (inches)	10.20					
L=C-K	annual consumptive use of irrigation water (inches)	13.85					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,628.04**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.34	4.56	5.15	6.26	2.90	1.89
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	23.10					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	12.73					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	12.09					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	2.10					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.05					
G=D+F	total annual effective precipitation (inches)	13.14					
H=B-G	annual consumptive use of irrigation water (inches)	9.96					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**11,346.10**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.83	3.40	6.61	7.14	3.90	3.07
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	25.95					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	12.73					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	12.09					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	2.10					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.05					
G=D+F	total annual effective precipitation (inches)	13.14					
H=B-G	annual consumptive use of irrigation water (inches)	12.81					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**17,221.98**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.10	2.24	4.63	5.04	4.39	3.20
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.60					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	12.73					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	12.09					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	2.10					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.05					
G=D+F	total annual effective precipitation (inches)	13.14					
H=B-G	annual consumptive use of irrigation water (inches)	7.46					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,802.83**					
	Total South Platte consumptive use of irrigation water during 1972 (acre-feet)	**43,453**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.246 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.96	5.33	6.17	4.73	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.78	135.38	156.72	120.14	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.19					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.52	1.29	2.90	1.82	3.07	1.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	32.77	73.66	46.23	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.43	25.90	56.84	34.51	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.33	1.02	2.24	1.36	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	4.95					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.34					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.17					
K=H+J	total annual effective precipitation (inches)	6.12					
L=C-K	annual consumptive use of irrigation water (inches)	12.07					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,663.25**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.30	3.43	5.13	4.28	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.02	87.12	130.30	108.71	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	14.14					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.52	1.29	2.90	1.82	3.07	1.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	32.77	73.66	46.23	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.12	23.30	53.63	33.66	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.32	0.92	2.11	1.33	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	4.68					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.34					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.17					
K=H+J	total annual effective precipitation (inches)	5.85					
L=C-K	annual consumptive use of irrigation water (inches)	8.29					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**315.02**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.65	4.56	6.21	5.95	1.77	0.92
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.91	115.82	157.73	151.13	44.96	23.37
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.06					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.52	1.29	2.90	1.82	3.07	1.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	32.77	73.66	46.23	77.98	37.34
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.28	24.81	56.97	36.95	46.75	22.90
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.33	0.98	2.24	1.45	1.84	0.90
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.74					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.34					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.17					
K=H+J	total annual effective precipitation (inches)	8.91					
L=C-K	annual consumptive use of irrigation water (inches)	12.15					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,305.46**					

Table 2.1.4.246 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.61	4.46	6.07	5.81	1.73	0.90
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.89	113.28	154.18	147.57	43.94	22.86
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.58					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.52	1.29	2.90	1.82	3.07	1.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	32.77	73.66	46.23	77.98	37.34
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.26	24.68	56.53	36.66	46.65	22.87
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.33	0.97	2.23	1.44	1.84	0.90
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.71					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.34					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.17					
K=H+J	total annual effective precipitation (inches)	8.88					
L=C-K	annual consumptive use of irrigation water (inches)	11.70					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**888.23**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.98	1.30	5.14	8.78	3.36	1.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.89	33.02	130.56	223.01	85.34	26.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.59					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.52	1.29	2.90	1.82	3.07	1.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	32.77	73.66	46.23	77.98	37.34
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.98	20.68	53.67	43.28	51.09	23.04
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	0.81	2.11	1.70	2.01	0.91
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.85					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.34					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.17					
K=H+J	total annual effective precipitation (inches)	9.02					
L=C-K	annual consumptive use of irrigation water (inches)	11.57					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,195.41**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.98	1.30	5.14	8.78	3.36	1.03
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.89	33.02	130.56	223.01	85.34	26.16
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.59					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.52	1.29	2.90	1.82	3.07	1.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	32.77	73.66	46.23	77.98	37.34
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.98	20.68	53.67	43.28	51.09	23.04
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	0.81	2.11	1.70	2.01	0.91
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.85					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.34					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.17					
K=H+J	total annual effective precipitation (inches)	9.02					
L=C-K	annual consumptive use of irrigation water (inches)	11.57					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**878.36**					

Table 2.1.4.246 Consumptive use of irrigation water, CU_W, calculations - 1989 - low stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.91	1.92	6.22	8.66	5.47	1.59
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.11	48.77	157.99	219.96	138.94	40.39
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.77					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.52	1.29	2.90	1.82	3.07	1.47
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	32.77	73.66	46.23	77.98	37.34
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.95	21.41	57.00	42.99	57.48	23.77
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	0.84	2.24	1.69	2.26	0.94
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.28					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	2.34					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.17					
K=H+J	total annual effective precipitation (inches)	9.45					
L=C-K	annual consumptive use of irrigation water (inches)	15.32					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,906.97**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.75	5.35	5.16	7.78	3.25	2.05
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	26.34					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.06					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	10.51					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	2.34					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.17					
G=D+F	total annual effective precipitation (inches)	11.68					
H=B-G	annual consumptive use of irrigation water (inches)	14.66					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**16,700.18**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.65	3.05	5.06	6.78	3.34	2.54
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	22.42					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.06					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	10.51					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	2.34					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.17					
G=D+F	total annual effective precipitation (inches)	11.68					
H=B-G	annual consumptive use of irrigation water (inches)	10.74					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**14,439.04**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.99	2.01	3.55	4.79	3.75	2.65
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.74					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.06					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	10.51					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	2.34					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.17					
G=D+F	total annual effective precipitation (inches)	11.68					
H=B-G	annual consumptive use of irrigation water (inches)	6.06					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,464.50**					
	Total South Platte consumptive use of irrigation water during 1989 (acre-feet)	**45,756**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.247 Consumptive use of irrigation water, CU_W, calculations - 1990 - low stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.99	5.14	7.61	4.29	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.55	130.56	193.29	108.97	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.03					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.23	2.75	1.08	3.66	1.64	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	31.24	69.85	27.43	92.96	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.54	51.20	24.80	62.78	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.81	2.02	0.98	2.47	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	6.28					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	8.69					
L=C-K	annual consumptive use of irrigation water (inches)	10.34					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,138.19**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.29	3.24	6.22	3.82	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.77	82.30	157.99	97.03	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	14.57					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.23	2.75	1.08	3.66	1.64	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	31.24	69.85	27.43	92.96	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.75	46.05	22.95	61.15	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.78	1.81	0.90	2.41	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	5.90					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	8.31					
L=C-K	annual consumptive use of irrigation water (inches)	6.26					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**237.88**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.62	4.25	7.43	5.22	1.90	1.04
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.15	107.95	188.72	132.59	48.26	26.42
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.46					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.23	2.75	1.08	3.66	1.64	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	31.24	69.85	27.43	92.96	41.66	33.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	20.12	48.72	24.55	66.13	26.78	20.68
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.79	1.92	0.97	2.60	1.05	0.81
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.14					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	10.55					
L=C-K	annual consumptive use of irrigation water (inches)	10.91					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,070.17**					

Table 2.1.4.247 Consumptive use of irrigation water, CU_W, calculations - 1990 - low stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.36	3.58	6.26	4.40	1.60	0.88
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.54	90.93	159.00	111.76	40.64	22.35
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.08					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.23	2.75	1.08	3.66	1.64	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	31.24	69.85	27.43	92.96	41.66	33.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.83	46.93	23.00	63.17	26.33	20.50
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.78	1.85	0.91	2.49	1.04	0.81
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.88					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	10.29					
L=C-K	annual consumptive use of irrigation water (inches)	7.79					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**591.39**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.92	1.16	5.86	7.35	3.44	1.11
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.37	29.46	148.84	186.69	87.38	28.19
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.84					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.23	2.75	1.08	3.66	1.64	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	31.24	69.85	27.43	92.96	41.66	33.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.35	40.99	22.49	74.48	29.18	20.76
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.76	1.61	0.89	2.93	1.15	0.82
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.16					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	10.57					
L=C-K	annual consumptive use of irrigation water (inches)	9.27					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,758.98**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.97	1.36	3.33	4.19	4.02	2.35
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	24.64	34.54	84.58	106.43	102.11	59.69
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	16.22					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.23	2.75	1.08	3.66	1.64	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	31.24	69.85	27.43	92.96	41.66	33.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.40	41.45	19.53	62.43	30.14	22.25
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.76	1.63	0.77	2.46	1.19	0.88
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.69					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	10.10					
L=C-K	annual consumptive use of irrigation water (inches)	6.12					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**464.61**					

Table 2.1.4.247 Consumptive use of irrigation water, CU_W, calculations - 1990 - low stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.92	1.84	7.63	7.79	6.01	1.86
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.37	46.74	193.80	197.87	152.65	47.24
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	26.05					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.23	2.75	1.08	3.66	1.64	1.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	31.24	69.85	27.43	92.96	41.66	33.27
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	19.35	42.58	24.83	76.34	33.69	21.65
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.76	1.68	0.98	3.01	1.33	0.85
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.61					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	11.02					
L=C-K	annual consumptive use of irrigation water (inches)	15.03					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,851.94**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.46	4.51	5.59	6.18	3.16	2.11
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.01					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.66					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	11.08					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
G=D+F	total annual effective precipitation (inches)	13.49					
H=B-G	annual consumptive use of irrigation water (inches)	10.52					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**11,984.03**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.78	3.13	6.65	6.56	3.93	3.18
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	25.23					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.66					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	11.08					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.41					
G=D+F	total annual effective precipitation (inches)	13.49					
H=B-G	annual consumptive use of irrigation water (inches)	11.74					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**15,783.45**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.07	2.05	4.67	4.63	4.43	3.32
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.17					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.66					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	11.08					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.41					
G=D+F	total annual effective precipitation (inches)	13.49					
H=B-G	annual consumptive use of irrigation water (inches)	6.68					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,614.33**					
	Total South Platte consumptive use of irrigation water during 1990 (acre-feet)	**40,495**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.248 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.12	5.42	5.82	3.75	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.85	137.67	147.83	95.25	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.11					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.22	1.47	2.27	3.14	2.02	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	5.59	37.34	57.66	79.76	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	2.51	29.44	44.82	53.27	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.10	1.16	1.76	2.10	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	5.12					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.45					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.73					
K=H+J	total annual effective precipitation (inches)	6.85					
L=C-K	annual consumptive use of irrigation water (inches)	10.26					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,113.91**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.97	4.88	6.80	4.76	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	50.04	123.95	172.72	120.90	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.41					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.22	1.47	2.27	3.14	2.02	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	5.59	37.34	57.66	79.76	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	2.49	28.57	47.34	56.36	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.10	1.12	1.86	2.22	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	5.30					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.45					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.73					
K=H+J	total annual effective precipitation (inches)	7.03					
L=C-K	annual consumptive use of irrigation water (inches)	11.38					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**432.44**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.09	5.42	6.87	5.52	1.87	1.13
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.09	137.67	174.50	140.21	47.50	28.70
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	22.90					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.22	1.47	2.27	3.14	2.02	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	5.59	37.34	57.66	79.76	51.31	10.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	2.51	29.44	47.52	58.80	32.35	6.24
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.10	1.16	1.87	2.31	1.27	0.25
H	calculated effective precipitation, Re, Apr-Sep (inches)	6.96					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.45					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.73					
K=H+J	total annual effective precipitation (inches)	8.69					
L=C-K	annual consumptive use of irrigation water (inches)	14.21					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,696.35**					

Table 2.1.4.248 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.83	4.76	6.03	4.85	1.64	0.99
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	46.48	120.90	153.16	123.19	41.66	25.15
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.10					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.22	1.47	2.27	3.14	2.02	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	5.59	37.34	57.66	79.76	51.31	10.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	2.47	28.38	45.34	56.64	31.94	6.20
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.10	1.12	1.79	2.23	1.26	0.24
H	calculated effective precipitation, Re, Apr-Sep (inches)	6.74					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.45					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.73					
K=H+J	total annual effective precipitation (inches)	8.47					
L=C-K	annual consumptive use of irrigation water (inches)	11.63					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**882.91**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	1.06	3.89	5.56	2.43	0.86
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.59	26.92	98.81	141.22	61.72	21.84
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	14.65					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.22	1.47	2.27	3.14	2.02	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	5.59	37.34	57.66	79.76	51.31	10.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	2.34	23.08	40.24	58.93	33.38	6.15
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.09	0.91	1.58	2.32	1.31	0.24
H	calculated effective precipitation, Re, Apr-Sep (inches)	6.45					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.45					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.73					
K=H+J	total annual effective precipitation (inches)	8.18					
L=C-K	annual consumptive use of irrigation water (inches)	6.47					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,227.68**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.43	1.98	3.52	5.07	4.53	2.91
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.32	50.29	89.41	128.78	115.06	73.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.44					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.22	1.47	2.27	3.14	2.02	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	5.59	37.34	57.66	79.76	51.31	10.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	2.42	24.30	39.41	57.34	37.53	6.90
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.10	0.96	1.55	2.26	1.48	0.27
H	calculated effective precipitation, Re, Apr-Sep (inches)	6.62					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.45					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.73					
K=H+J	total annual effective precipitation (inches)	8.35					
L=C-K	annual consumptive use of irrigation water (inches)	11.09					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**841.92**					

Table 2.1.4.248 Consumptive use of irrigation water, CU_W, calculations - 1992 - low stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	1.97	5.95	6.94	5.00	1.69
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.40	50.04	151.13	176.28	127.00	42.93
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	22.55					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.22	1.47	2.27	3.14	2.02	0.42
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	5.59	37.34	57.66	79.76	51.31	10.67
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	2.36	24.28	45.14	63.65	38.53	6.44
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.09	0.96	1.78	2.51	1.52	0.25
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.11					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.45					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.73					
K=H+J	total annual effective precipitation (inches)	8.84					
L=C-K	annual consumptive use of irrigation water (inches)	13.71					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,601.47**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	3.07	5.61	5.03	6.36	3.04	2.23
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	25.34					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	9.52					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	9.04					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.45					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.73					
G=D+F	total annual effective precipitation (inches)	10.77					
H=B-G	annual consumptive use of irrigation water (inches)	14.57					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**16,597.66**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.81	3.14	4.84	5.44	3.05	2.71
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.99					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	9.52					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	9.04					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.45					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.73					
G=D+F	total annual effective precipitation (inches)	10.77					
H=B-G	annual consumptive use of irrigation water (inches)	10.22					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**13,739.94**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.08	2.06	3.39	3.84	3.44	2.82
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	16.63					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	9.52					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	9.04					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.45					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.73					
G=D+F	total annual effective precipitation (inches)	10.77					
H=B-G	annual consumptive use of irrigation water (inches)	5.86					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,416.17**					
	Total South Platte consumptive use of irrigation water during 1992 (acre-feet)	**43,550**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.249 Consumptive use of irrigation water, CU_W, calculations - 1974 - normal or average stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.70	5.32	6.24	4.21	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.18	135.13	158.50	106.93	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.47					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.50	0.11	2.81	1.41	1.29	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	2.79	71.37	35.81	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.94	-0.03	55.49	26.46	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	0.00	2.18	1.04	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	3.53					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.12					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.06					
K=H+J	total annual effective precipitation (inches)	5.59					
L=C-K	annual consumptive use of irrigation water (inches)	11.88					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,605.58**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.49	4.54	6.88	5.05	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.85	115.32	174.75	128.27	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.96					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.50	0.11	2.81	1.41	1.29	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	2.79	71.37	35.81	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.85	-0.02	57.51	27.73	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	0.00	2.26	1.09	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	3.66					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.12					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.06					
K=H+J	total annual effective precipitation (inches)	5.72					
L=C-K	annual consumptive use of irrigation water (inches)	12.24					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**465.12**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.39	4.44	6.13	5.17	1.64	0.81
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.31	112.78	155.70	131.32	41.66	20.57
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.58					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.50	0.11	2.81	1.41	1.29	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	2.79	71.37	35.81	32.77	12.70
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.80	-0.02	55.15	27.92	21.08	7.55
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	0.00	2.17	1.10	0.83	0.30
H	calculated effective precipitation, Re, Apr-Sep (inches)	4.71					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.12					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.06					
K=H+J	total annual effective precipitation (inches)	6.77					
L=C-K	annual consumptive use of irrigation water (inches)	12.81					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,430.70**					

Table 2.1.4.249 Consumptive use of irrigation water, CU_W, calculations - 1974 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.59	5.07	7.00	5.90	1.87	0.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.39	128.78	177.80	149.86	47.50	23.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	22.36					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.50	0.11	2.81	1.41	1.29	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	2.79	71.37	35.81	32.77	12.70
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.89	-0.02	57.90	29.08	21.35	7.60
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	0.00	2.28	1.14	0.84	0.30
H	calculated effective precipitation, Re, Apr-Sep (inches)	4.87					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.12					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.06					
K=H+J	total annual effective precipitation (inches)	6.93					
L=C-K	annual consumptive use of irrigation water (inches)	15.43					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,171.39**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	1.30	5.21	7.82	3.18	0.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.59	33.02	132.33	198.63	80.77	23.62
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.29					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.50	0.11	2.81	1.41	1.29	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	2.79	71.37	35.81	32.77	12.70
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.57	-0.02	52.39	32.37	22.97	7.60
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.30	0.00	2.06	1.27	0.90	0.30
H	calculated effective precipitation, Re, Apr-Sep (inches)	4.83					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.12					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.06					
K=H+J	total annual effective precipitation (inches)	6.89					
L=C-K	annual consumptive use of irrigation water (inches)	12.40					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,352.90**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.44	2.45	4.73	7.15	5.96	3.15
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.58	62.23	120.14	181.61	151.38	80.01
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.88					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.50	0.11	2.81	1.41	1.29	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	2.79	71.37	35.81	32.77	12.70
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.82	-0.02	51.00	31.18	26.83	8.61
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	0.00	2.01	1.23	1.06	0.34
H	calculated effective precipitation, Re, Apr-Sep (inches)	4.95					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.12					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.06					
K=H+J	total annual effective precipitation (inches)	7.01					
L=C-K	annual consumptive use of irrigation water (inches)	17.87					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,356.63**					

Table 2.1.4.249 Consumptive use of irrigation water, CU_W, calculations - 1974 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	2.06	6.76	8.28	5.56	1.55
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.59	52.32	171.70	210.31	141.22	39.37
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	25.06					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.50	0.11	2.81	1.41	1.29	0.50
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	12.70	2.79	71.37	35.81	32.77	12.70
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.57	-0.02	57.13	33.21	26.24	7.87
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.30	0.00	2.25	1.31	1.03	0.31
H	calculated effective precipitation, Re, Apr-Sep (inches)	5.20					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.12					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.06					
K=H+J	total annual effective precipitation (inches)	7.26					
L=C-K	annual consumptive use of irrigation water (inches)	17.80					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,377.55**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.38	5.34	5.22	6.93	3.07	1.86
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.80					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	6.62					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.29					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.12					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.06					
G=D+F	total annual effective precipitation (inches)	8.35					
H=B-G	annual consumptive use of irrigation water (inches)	16.45					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**18,739.29**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	3.57	6.00	7.08	3.69	2.70
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.71					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	6.62					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.29					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.12					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.06					
G=D+F	total annual effective precipitation (inches)	8.35					
H=B-G	annual consumptive use of irrigation water (inches)	16.36					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**21,994.66**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.00	2.34	4.20	5.00	4.17	2.81
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.52					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	6.62					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	6.29					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.12					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.06					
G=D+F	total annual effective precipitation (inches)	8.35					
H=B-G	annual consumptive use of irrigation water (inches)	11.17					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,699.42**					
	Total South Platte consumptive use of irrigation water during 1974 (acre-feet)	**58,193**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.250 Consumptive use of irrigation water, CU_W, calculations - 1983 - normal or average stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.56	4.74	6.28	4.82	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.62	120.40	159.51	122.43	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.40					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.39	3.24	3.43	3.65	2.82	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	86.11	82.30	87.12	92.71	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	50.41	57.87	66.29	64.52	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.98	2.28	2.61	2.54	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	9.41					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.23					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.62					
K=H+J	total annual effective precipitation (inches)	12.03					
L=C-K	annual consumptive use of irrigation water (inches)	5.37					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,629.80**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.27	3.76	6.44	5.38	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.26	95.50	163.58	136.65	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	16.85					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.39	3.24	3.43	3.65	2.82	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	86.11	82.30	87.12	92.71	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	49.60	54.78	66.89	66.56	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.95	2.16	2.63	2.62	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	9.36					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.23					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.62					
K=H+J	total annual effective precipitation (inches)	11.98					
L=C-K	annual consumptive use of irrigation water (inches)	4.87					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**185.06**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.34	4.17	6.51	6.24	2.18	1.15
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.04	105.92	165.35	158.50	55.37	29.21
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.59					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	3.39	3.24	3.43	3.65	2.82	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	86.11	82.30	87.12	92.71	71.63	15.75
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	49.80	56.05	67.15	69.84	44.38	9.80
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.96	2.21	2.64	2.75	1.75	0.39
H	calculated effective precipitation, Re, Apr-Sep (inches)	11.70					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.23					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.62					
K=H+J	total annual effective precipitation (inches)	14.32					
L=C-K	annual consumptive use of irrigation water (inches)	7.27					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,379.48**					

Table 2.1.4.250 Consumptive use of irrigation water, CU_W, calculations - 1983 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.24	3.87	6.04	5.79	2.02	1.07
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	31.50	98.30	153.42	147.07	51.31	27.18
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.03					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.39	3.24	3.43	3.65	2.82	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	86.11	82.30	87.12	92.71	71.63	15.75
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	49.52	55.12	65.41	68.11	43.98	9.76
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.95	2.17	2.58	2.68	1.73	0.38
H	calculated effective precipitation, Re, Apr-Sep (inches)	11.49					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.23					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.62					
K=H+J	total annual effective precipitation (inches)	14.11					
L=C-K	annual consumptive use of irrigation water (inches)	5.92					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**449.43**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.64	0.95	4.28	7.32	3.27	1.02
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	16.26	24.13	108.71	185.93	83.06	25.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.48					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.39	3.24	3.43	3.65	2.82	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	86.11	82.30	87.12	92.71	71.63	15.75
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	47.89	46.83	59.29	74.18	47.16	9.73
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.89	1.84	2.33	2.92	1.86	0.38
H	calculated effective precipitation, Re, Apr-Sep (inches)	11.22					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.23					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.62					
K=H+J	total annual effective precipitation (inches)	13.84					
L=C-K	annual consumptive use of irrigation water (inches)	3.64					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**690.69**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.83	1.37	2.99	5.13	4.71	2.63
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.08	34.80	75.95	130.30	119.63	66.80
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.66					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.39	3.24	3.43	3.65	2.82	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	86.11	82.30	87.12	92.71	71.63	15.75
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	48.40	47.94	55.16	65.64	51.11	10.64
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.91	1.89	2.17	2.58	2.01	0.42
H	calculated effective precipitation, Re, Apr-Sep (inches)	10.98					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.23					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.62					
K=H+J	total annual effective precipitation (inches)	13.60					
L=C-K	annual consumptive use of irrigation water (inches)	4.06					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**308.22**					

Table 2.1.4.250 Consumptive use of irrigation water, CU_W, calculations - 1983 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.72	1.70	6.28	8.75	6.47	1.91
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	18.29	43.18	159.51	222.25	164.34	48.51
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	25.83					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	3.39	3.24	3.43	3.65	2.82	0.62
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	86.11	82.30	87.12	92.71	71.63	15.75
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	48.10	48.83	66.29	80.35	56.39	10.22
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.89	1.92	2.61	3.16	2.22	0.40
H	calculated effective precipitation, Re, Apr-Sep (inches)	12.20					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	5.23					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.62					
K=H+J	total annual effective precipitation (inches)	14.82					
L=C-K	annual consumptive use of irrigation water (inches)	11.01					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,089.15**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.02	4.39	4.85	7.33	3.58	2.29
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.46					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	17.13					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	16.27					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	5.23					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.62					
G=D+F	total annual effective precipitation (inches)	18.89					
H=B-G	annual consumptive use of irrigation water (inches)	5.57					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**6,345.16**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.36	2.83	5.36	7.20	4.15	3.20
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.10					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	17.13					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	16.27					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	5.23					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.62					
G=D+F	total annual effective precipitation (inches)	18.89					
H=B-G	annual consumptive use of irrigation water (inches)	5.21					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**7,004.41**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.81	1.86	3.76	5.09	4.67	3.34
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.53					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	17.13					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	16.27					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	5.23					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.62					
G=D+F	total annual effective precipitation (inches)	18.89					
H=B-G	annual consumptive use of irrigation water (inches)	0.64					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**154.67**					
	Total South Platte consumptive use of irrigation water during 1983 (acre-feet)	**20,236**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.251 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.06	5.43	7.51	4.71	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	52.32	137.92	190.75	119.63	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.71					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.88	3.00	1.59	1.57	1.17	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.75	76.20	40.39	39.88	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.62	56.20	35.60	30.09	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.21	2.21	1.40	1.18	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	6.00					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.01					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.01					
K=H+J	total annual effective precipitation (inches)	8.01					
L=C-K	annual consumptive use of irrigation water (inches)	11.70					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,550.95**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.58	4.04	7.24	4.94	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.13	102.62	183.90	125.48	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.80					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.88	3.00	1.59	1.57	1.17	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.75	76.20	40.39	39.88	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.81	52.00	35.06	30.48	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.17	2.05	1.38	1.20	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	5.80					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.01					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.01					
K=H+J	total annual effective precipitation (inches)	7.81					
L=C-K	annual consumptive use of irrigation water (inches)	9.99					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**379.62**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.19	3.20	5.22	4.09	1.37	0.68
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.23	81.28	132.59	103.89	34.80	17.27
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	15.75					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.88	3.00	1.59	1.57	1.17	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.75	76.20	40.39	39.88	29.72	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.17	49.62	31.32	29.06	18.91	25.86
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.15	1.95	1.23	1.14	0.74	1.02
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.23					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.01					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.01					
K=H+J	total annual effective precipitation (inches)	9.24					
L=C-K	annual consumptive use of irrigation water (inches)	6.51					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,235.27**					

Table 2.1.4.251 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.02	2.73	4.47	3.50	1.17	0.58
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.91	69.34	113.54	88.90	29.72	14.73
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	13.47					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.88	3.00	1.59	1.57	1.17	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.75	76.20	40.39	39.88	29.72	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.90	48.33	30.04	28.12	18.70	25.71
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.14	1.90	1.18	1.11	0.74	1.01
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.08					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.01					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.01					
K=H+J	total annual effective precipitation (inches)	9.09					
L=C-K	annual consumptive use of irrigation water (inches)	4.38					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**332.52**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.89	1.14	5.39	7.53	3.22	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.61	28.96	136.91	191.26	81.79	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.11					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.88	3.00	1.59	1.57	1.17	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.75	76.20	40.39	39.88	29.72	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.69	44.22	31.62	35.22	20.97	26.23
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.13	1.74	1.24	1.39	0.83	1.03
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.36					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.01					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.01					
K=H+J	total annual effective precipitation (inches)	9.37					
L=C-K	annual consumptive use of irrigation water (inches)	9.74					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,848.17**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.69	2.42	5.53	7.76	6.81	3.59
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.93	61.47	140.46	197.10	172.97	91.19
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	27.80					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.88	3.00	1.59	1.57	1.17	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.75	76.20	40.39	39.88	29.72	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	30.00	47.50	31.87	35.67	25.63	30.42
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.18	1.87	1.25	1.40	1.01	1.20
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.91					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.01					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.01					
K=H+J	total annual effective precipitation (inches)	9.92					
L=C-K	annual consumptive use of irrigation water (inches)	17.88					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,357.39**					

Table 2.1.4.251 Consumptive use of irrigation water, CU_W, calculations - 1988 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.01	2.04	7.94	9.03	6.39	1.78
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.65	51.82	201.68	229.36	162.31	45.21
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	28.19					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.88	3.00	1.59	1.57	1.17	1.70
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.75	76.20	40.39	39.88	29.72	43.18
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.88	46.50	36.46	38.30	25.04	27.49
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.14	1.83	1.44	1.51	0.99	1.08
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.99					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.01					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.01					
K=H+J	total annual effective precipitation (inches)	10.00					
L=C-K	annual consumptive use of irrigation water (inches)	18.19					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,451.55**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.82	5.30	6.13	7.56	3.53	2.14
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	27.48					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	10.91					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	10.36					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.01					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.01					
G=D+F	total annual effective precipitation (inches)	12.37					
H=B-G	annual consumptive use of irrigation water (inches)	15.11					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**17,212.81**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.52	2.74	5.43	5.96	3.28	2.40
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.33					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	10.91					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	10.36					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.01					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.01					
G=D+F	total annual effective precipitation (inches)	12.37					
H=B-G	annual consumptive use of irrigation water (inches)	8.96					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**12,045.97**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.91	1.79	3.81	4.21	3.70	2.49
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	16.91					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	10.91					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	10.36					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.01					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.01					
G=D+F	total annual effective precipitation (inches)	12.37					
H=B-G	annual consumptive use of irrigation water (inches)	4.54					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,097.17**					
	Total South Platte consumptive use of irrigation water during 1988 (acre-feet)	**42,511**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.252 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.10	5.26	6.50	4.71	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.34	133.60	165.10	119.63	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.57					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.67	2.76	4.61	2.67	2.60	2.49
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.02	70.10	117.09	67.82	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.23	51.71	86.79	48.69	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.44	2.04	3.42	1.92	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.82					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	1.86					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	0.93					
K=H+J	total annual effective precipitation (inches)	8.75					
L=C-K	annual consumptive use of irrigation water (inches)	9.82					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,980.37**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.71	4.17	6.67	5.26	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.43	105.92	169.42	133.60	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.81					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.67	2.76	4.61	2.67	2.60	2.49
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.02	70.10	117.09	67.82	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.99	48.65	87.62	50.21	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.43	1.92	3.45	1.98	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.78					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	1.86					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	0.93					
K=H+J	total annual effective precipitation (inches)	8.71					
L=C-K	annual consumptive use of irrigation water (inches)	9.10					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**345.80**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.53	3.92	5.71	5.17	1.75	0.82
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.86	99.57	145.03	131.32	44.45	20.83
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.90					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.67	2.76	4.61	2.67	2.60	2.49
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.02	70.10	117.09	67.82	66.04	63.25
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.88	47.98	83.04	49.96	40.31	36.82
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.43	1.89	3.27	1.97	1.59	1.45
H	calculated effective precipitation, Re, Apr-Sep (inches)	10.60					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	1.86					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	0.93					
K=H+J	total annual effective precipitation (inches)	11.53					
L=C-K	annual consumptive use of irrigation water (inches)	7.37					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,398.46**					

Table 2.1.4.252 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - South Platte subbasin (cont)

Crop							
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.81	4.63	6.74	6.10	2.07	0.97
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	45.97	117.60	171.20	154.94	52.58	24.64
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	22.32					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.67	2.76	4.61	2.67	2.60	2.49
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.02	70.10	117.09	67.82	66.04	63.25
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.05	49.92	87.96	52.62	41.04	37.13
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.44	1.97	3.46	2.07	1.62	1.46
H	calculated effective precipitation, Re, Apr-Sep (inches)	11.02					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	1.86					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	0.93					
K=H+J	total annual effective precipitation (inches)	11.95					
L=C-K	annual consumptive use of irrigation water (inches)	10.37					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**787.26**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.86	1.05	4.44	7.16	3.13	0.86
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.84	26.67	112.78	181.86	79.50	21.84
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.50					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.67	2.76	4.61	2.67	2.60	2.49
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.02	70.10	117.09	67.82	66.04	63.25
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.48	40.87	77.36	55.83	43.54	36.91
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.41	1.61	3.05	2.20	1.71	1.45
H	calculated effective precipitation, Re, Apr-Sep (inches)	10.43					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	1.86					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	0.93					
K=H+J	total annual effective precipitation (inches)	11.36					
L=C-K	annual consumptive use of irrigation water (inches)	6.14					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,165.07**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	2.28	4.63	7.51	6.73	3.33
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.42	57.91	117.60	190.75	170.94	84.58
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	26.15					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.67	2.76	4.61	2.67	2.60	2.49
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.02	70.10	117.09	67.82	66.04	63.25
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.97	43.78	78.18	56.94	53.23	42.37
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.43	1.72	3.08	2.24	2.10	1.67
H	calculated effective precipitation, Re, Apr-Sep (inches)	11.24					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	1.86					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	0.93					
K=H+J	total annual effective precipitation (inches)	12.17					
L=C-K	annual consumptive use of irrigation water (inches)	13.98					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,061.32**					

Table 2.1.4.252 Consumptive use of irrigation water, CU_W, calculations - 1982 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.93	1.81	6.27	8.25	5.95	1.55
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.62	45.97	159.26	209.55	151.13	39.37
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.76					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.67	2.76	4.61	2.67	2.60	2.49
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	17.02	70.10	117.09	67.82	66.04	63.25
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	10.52	42.64	85.68	59.34	50.97	38.36
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.41	1.68	3.37	2.34	2.01	1.51
H	calculated effective precipitation, Re, Apr-Sep (inches)	11.32					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	1.86					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	0.93					
K=H+J	total annual effective precipitation (inches)	12.25					
L=C-K	annual consumptive use of irrigation water (inches)	12.51					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,373.77**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.63	4.72	4.85	6.92	3.30	1.88
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.30					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	15.79					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	15.00					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	1.86					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	0.93					
G=D+F	total annual effective precipitation (inches)	15.93					
H=B-G	annual consumptive use of irrigation water (inches)	8.37					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**9,534.83**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.38	2.37	4.18	5.31	2.98	2.04
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	18.26					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	15.79					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	15.00					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	1.86					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	0.93					
G=D+F	total annual effective precipitation (inches)	15.93					
H=B-G	annual consumptive use of irrigation water (inches)	2.33					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,132.49**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.82	1.56	2.93	3.74	3.35	2.12
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	14.52					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	15.79					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	15.00					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	1.86					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	0.93					
G=D+F	total annual effective precipitation (inches)	15.93					
H=B-G	annual consumptive use of irrigation water (inches)	0.00					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**0.00**					
	Total South Platte consumptive use of irrigation water during 1982 (acre-feet)	**22,779**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.253 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.40	5.31	7.32	4.85	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	60.96	134.87	185.93	123.19	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.88					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.74	4.05	1.45	2.36	1.78	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.80	102.87	36.83	59.94	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.68	72.59	32.32	43.95	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.50	2.86	1.27	1.73	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	6.36					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	8.77					
L=C-K	annual consumptive use of irrigation water (inches)	11.11					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,371.89**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.49	3.20	5.72	4.12	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.85	81.28	145.29	104.65	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	14.53					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.74	4.05	1.45	2.36	1.78	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.80	102.87	36.83	59.94	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.05	64.52	29.56	42.20	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.47	2.54	1.16	1.66	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	5.83					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	8.24					
L=C-K	annual consumptive use of irrigation water (inches)	6.29					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**239.02**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.09	4.71	7.66	6.32	1.89	1.08
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.09	119.63	194.56	160.53	48.01	27.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	23.75					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.74	4.05	1.45	2.36	1.78	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.80	102.87	36.83	59.94	45.21	31.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.47	70.20	32.94	47.72	28.86	19.52
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.49	2.76	1.30	1.88	1.14	0.77
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.34					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	10.75					
L=C-K	annual consumptive use of irrigation water (inches)	13.00					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,466.75**					

Table 2.1.4.253 Consumptive use of irrigation water, CU_W, calculations - 1987 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.09	4.71	7.66	6.32	1.89	1.08
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.09	119.63	194.56	160.53	48.01	27.43
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	23.75					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.74	4.05	1.45	2.36	1.78	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.80	102.87	36.83	59.94	45.21	31.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.47	70.20	32.94	47.72	28.86	19.52
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.49	2.76	1.30	1.88	1.14	0.77
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.34					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	10.75					
L=C-K	annual consumptive use of irrigation water (inches)	13.00					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**986.92**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.05	1.13	5.33	7.85	3.02	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.67	28.70	135.38	199.39	76.71	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.39					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.74	4.05	1.45	2.36	1.78	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.80	102.87	36.83	59.94	45.21	31.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.76	57.48	28.92	51.97	30.74	19.44
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.46	2.26	1.14	2.05	1.21	0.77
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.89					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	10.30					
L=C-K	annual consumptive use of irrigation water (inches)	9.09					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,724.83**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.71	2.04	4.65	6.89	5.43	3.29
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	43.43	51.82	118.11	175.01	137.92	83.57
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.01					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.74	4.05	1.45	2.36	1.78	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.80	102.87	36.83	59.94	45.21	31.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.20	60.47	27.84	49.26	35.16	22.09
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.48	2.38	1.10	1.94	1.38	0.87
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.15					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	10.56					
L=C-K	annual consumptive use of irrigation water (inches)	13.45					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,021.08**					

Table 2.1.4.253 Consumptive use of irrigation water, CUW, calculations - 1987 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	1.91	7.40	8.87	5.63	1.81
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.45	48.51	187.96	225.30	143.00	45.97
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	26.74					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.74	4.05	1.45	2.36	1.78	1.23
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.80	102.87	36.83	59.94	45.21	31.24
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.81	60.03	32.46	55.02	35.56	20.33
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.46	2.36	1.28	2.17	1.40	0.80
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.47					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
K=H+J	total annual effective precipitation (inches)	10.88					
L=C-K	annual consumptive use of irrigation water (inches)	15.86					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**3,009.44**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.75	4.34	5.00	6.50	2.72	1.90
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	23.21					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.59					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	11.01					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	2.41					
G=D+F	total annual effective precipitation (inches)	13.42					
H=B-G	annual consumptive use of irrigation water (inches)	9.79					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**11,152.44**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.24	3.38	6.70	7.74	3.82	3.21
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	27.09					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.59					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	11.01					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.41					
G=D+F	total annual effective precipitation (inches)	13.42					
H=B-G	annual consumptive use of irrigation water (inches)	13.67					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**18,378.18**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.34	2.22	4.69	5.47	4.31	3.34
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.37					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.59					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	11.01					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	4.82					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	2.41					
G=D+F	total annual effective precipitation (inches)	13.42					
H=B-G	annual consumptive use of irrigation water (inches)	7.95					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,921.25**					
	Total South Platte consumptive use of irrigation water during 1987 (acre-feet)	**44,272**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.254 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.94	4.35	6.26	4.42	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.28	110.49	159.00	112.27	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	16.97					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.77	2.90	3.32	1.83	2.37	0.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.56	73.66	84.33	46.48	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.88	51.35	64.36	34.09	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.51	2.02	2.53	1.34	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	6.40					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.24					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.62					
K=H+J	total annual effective precipitation (inches)	8.02					
L=C-K	annual consumptive use of irrigation water (inches)	8.95					
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)	3,642					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,716.33**					
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.69	3.69	6.87	5.27	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.93	93.73	174.50	133.86	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.52					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.77	2.90	3.32	1.83	2.37	0.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.56	73.66	84.33	46.48	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.70	49.49	66.59	35.75	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.50	1.95	2.62	1.41	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)	6.48					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.24					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.62					
K=H+J	total annual effective precipitation (inches)	8.10					
L=C-K	annual consumptive use of irrigation water (inches)	9.42					
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)	456					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**357.96**					
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.43	3.26	5.53	4.88	1.56	0.95
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	36.32	82.80	140.46	123.95	39.62	24.13
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	17.61					
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.77	2.90	3.32	1.83	2.37	0.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.56	73.66	84.33	46.48	60.20	7.87
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.52	48.32	61.78	34.98	36.72	4.13
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.49	1.90	2.43	1.38	1.45	0.16
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.81					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.24					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.62					
K=H+J	total annual effective precipitation (inches)	9.43					
L=C-K	annual consumptive use of irrigation water (inches)	8.18					
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,552.16**					

Table 2.1.4.254 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.36	3.12	5.29	4.67	1.49	0.91
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.54	79.25	134.37	118.62	37.85	23.11
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	16.84					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.77	2.90	3.32	1.83	2.37	0.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.56	73.66	84.33	46.48	60.20	7.87
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.47	47.94	60.96	34.57	36.58	4.12
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.49	1.89	2.40	1.36	1.44	0.16
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.74					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.24					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.62					
K=H+J	total annual effective precipitation (inches)	9.36					
L=C-K	annual consumptive use of irrigation water (inches)	7.48					
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**567.86**					
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.92	1.01	4.97	7.80	3.19	1.15
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.37	25.65	126.24	198.12	81.03	29.21
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.04					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.77	2.90	3.32	1.83	2.37	0.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.56	73.66	84.33	46.48	60.20	7.87
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.17	42.61	59.88	41.17	40.22	4.17
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.48	1.68	2.36	1.62	1.58	0.16
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.88					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.24					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.62					
K=H+J	total annual effective precipitation (inches)	9.50					
L=C-K	annual consumptive use of irrigation water (inches)	9.54					
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,810.22**					
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.28	1.56	3.70	5.84	4.89	3.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	32.51	39.62	93.98	148.34	124.21	80.52
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	20.44					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.77	2.90	3.32	1.83	2.37	0.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.56	73.66	84.33	46.48	60.20	7.87
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.41	43.94	55.78	36.90	44.22	4.67
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.49	1.73	2.20	1.45	1.74	0.18
H	calculated effective precipitation, Re, Apr-Sep (inches)	7.79					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.24					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.62					
K=H+J	total annual effective precipitation (inches)	9.41					
L=C-K	annual consumptive use of irrigation water (inches)	11.03					
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)	911					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**837.36**					

Table 2.1.4.254 Consumptive use of irrigation water, CU_W, calculations - 1979 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.80	1.38	5.58	7.14	4.82	1.65
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	20.32	35.05	141.73	181.36	122.43	41.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.37					
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.77	2.90	3.32	1.83	2.37	0.31
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	19.56	73.66	84.33	46.48	60.20	7.87
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.09	43.50	61.96	39.68	44.05	4.29
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.48	1.71	2.44	1.56	1.73	0.17
H	calculated effective precipitation, Re, Apr-Sep (inches)	8.09					
I	average total precipitation, R_t, Oct - Mar (inches) (2)	3.24					
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.62					
K=H+J	total annual effective precipitation (inches)	9.71					
L=C-K	annual consumptive use of irrigation water (inches)	11.66					
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)	2,277					
N	**consumptive use of irrigation water (acre-feet per irrigation season)**	**2,212.49**					
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.30	3.71	4.45	6.18	2.75	2.05
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	21.44					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.00					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	10.45					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.24					
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)	1.62					
G=D+F	total annual effective precipitation (inches)	12.07					
H=B-G	annual consumptive use of irrigation water (inches)	9.37					
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)	13,670					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**10,673.99**					
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.82	2.79	5.75	7.10	3.72	3.34
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	24.52					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.00					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	10.45					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.24					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.62					
G=D+F	total annual effective precipitation (inches)	12.07					
H=B-G	annual consumptive use of irrigation water (inches)	12.45					
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)	16,133					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**16,737.99**					
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.09	1.83	4.03	5.01	4.20	3.48
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)	19.64					
C	average total precipitation, R_t, Apr-Sep (inches) (2)	11.00					
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)	10.45					
E	average total precipitation, R_t, Oct - Mar (inches) (2)	3.24					
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)	1.62					
G=D+F	total annual effective precipitation (inches)	12.07					
H=B-G	annual consumptive use of irrigation water (inches)	7.57					
I	average irrigated pasture, 1972 - 2001 (acres) (3)	2,900					
J	**consumptive use of irrigation water (acre-feet per irrigation season)**	**1,829.42**					
	Total South Platte consumptive use of irrigation water during 1979 (acre-feet)	**39,296**					

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.255 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - South Platte subbasin

Crop							
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.51	4.16	5.46	3.78	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.35	105.66	138.68	96.01	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						14.91
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.79	2.07	0.68	2.39	1.4	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	52.58	17.27	60.71	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.4	37.59	13.76	41.88	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.12	1.48	0.54	1.65	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)						4.79
I	average total precipitation, R_t, Oct - Mar (inches) (2)						2.56
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)						1.28
K=H+J	total annual effective precipitation (inches)						6.07
L=C-K	annual consumptive use of irrigation water (inches)						8.84
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)						3642
N	consumptive use of irrigation water (acre-feet per irrigation season)						2682.94
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.23	3.29	5.59	4.21	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	31.24	83.57	141.99	106.93	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						14.32
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.79	2.07	0.68	2.39	1.4	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	52.58	17.27	60.71	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.96	35.8	13.86	42.9	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.1	1.41	0.55	1.69	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)						4.75
I	average total precipitation, R_t, Oct - Mar (inches) (2)						2.56
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)						1.28
K=H+J	total annual effective precipitation (inches)						6.03
L=C-K	annual consumptive use of irrigation water (inches)						8.29
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)						456
N	consumptive use of irrigation water (acre-feet per irrigation season)						315.02
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.49	4.18	6.47	5.58	1.75	0.92
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.85	106.17	164.34	141.73	44.45	23.37
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						20.39
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.79	2.07	0.68	2.39	1.4	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	52.58	17.27	60.71	35.56	19.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.37	37.63	14.56	46.31	22.91	12.17
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.12	1.48	0.57	1.82	0.9	0.48
H	calculated effective precipitation, Re, Apr-Sep (inches)						6.37
I	average total precipitation, R_t, Oct - Mar (inches) (2)						2.56
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)						1.28
K=H+J	total annual effective precipitation (inches)						7.65
L=C-K	annual consumptive use of irrigation water (inches)						12.74
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)						2277
N	consumptive use of irrigation water (acre-feet per irrigation season)						2417.42

Table 2.1.4.255 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - South Platte subbasin (cont)

Crop							
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.59	4.46	6.9	5.96	1.87	0.99
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.39	113.28	175.26	151.38	47.5	25.15
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						21.77
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.79	2.07	0.68	2.39	1.4	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	52.58	17.27	60.71	35.56	19.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.53	38.22	14.91	47.3	23.07	12.21
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.12	1.5	0.59	1.86	0.91	0.48
H	calculated effective precipitation, Re, Apr-Sep (inches)						6.46
I	average total precipitation, R_t, Oct - Mar (inches) (2)						2.56
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)						1.28
K=H+J	total annual effective precipitation (inches)						7.74
L=C-K	annual consumptive use of irrigation water (inches)						14.03
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)						911
N	consumptive use of irrigation water (acre-feet per irrigation season)						1065.11
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.75	1.01	4.51	6.94	2.8	0.87
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	19.05	25.65	114.55	176.28	71.12	22.1
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						16.88
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.79	2.07	0.68	2.39	1.4	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	52.58	17.27	60.71	35.56	19.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.22	31.52	13.05	49.97	24.3	12.13
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.07	1.24	0.51	1.97	0.96	0.48
H	calculated effective precipitation, Re, Apr-Sep (inches)						6.23
I	average total precipitation, R_t, Oct - Mar (inches) (2)						2.56
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)						1.28
K=H+J	total annual effective precipitation (inches)						7.51
L=C-K	annual consumptive use of irrigation water (inches)						9.37
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)						2277
N	consumptive use of irrigation water (acre-feet per irrigation season)						1777.96
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.47	2.2	4.76	7.37	6.11	3.41
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.34	55.88	120.9	187.2	155.19	86.61
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						25.32
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.79	2.07	0.68	2.39	1.4	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	52.58	17.27	60.71	35.56	19.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.34	33.69	13.23	51.18	29.23	13.98
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.12	1.33	0.52	2.01	1.15	0.55
H	calculated effective precipitation, Re, Apr-Sep (inches)						6.68
I	average total precipitation, R_t, Oct - Mar (inches) (2)						2.56
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)						1.28
K=H+J	total annual effective precipitation (inches)						7.96
L=C-K	annual consumptive use of irrigation water (inches)						17.36
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)						911
N	consumptive use of irrigation water (acre-feet per irrigation season)						1317.91

Table 2.1.4.255 Consumptive use of irrigation water, CU_W, calculations - 1976 - normal or average stream flow year - South Platte subbasin (cont)

Crop							
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.86	1.82	6.69	8.4	5.6	1.65
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.84	46.23	169.93	213.36	142.24	41.91
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						25.02
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.79	2.07	0.68	2.39	1.4	0.77
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	45.47	52.58	17.27	60.71	35.56	19.56
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	27.39	32.98	14.74	54.21	28.41	12.67
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.08	1.3	0.58	2.13	1.12	0.5
H	calculated effective precipitation, Re, Apr-Sep (inches)						6.71
I	average total precipitation, R_t, Oct - Mar (inches) (2)						2.56
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)						1.28
K=H+J	total annual effective precipitation (inches)						7.99
L=C-K	annual consumptive use of irrigation water (inches)						17.03
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)						2277
N	consumptive use of irrigation water (acre-feet per irrigation season)						3231.44
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.83	3.59	3.94	5.35	2.36	1.51
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						18.58
C	average total precipitation, R_t, Apr-Sep (inches) (2)						9.1
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)						8.65
E	average total precipitation, R_t, Oct - Mar (inches) (2)						2.56
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)						1.28
G=D+F	total annual effective precipitation (inches)						9.93
H=B-G	annual consumptive use of irrigation water (inches)						8.65
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)						13670
J	consumptive use of irrigation water (acre-feet per irrigation season)						9853.79
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.88	1.65	3.11	3.76	1.95	1.51
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						12.86
C	average total precipitation, R_t, Apr-Sep (inches) (2)						9.1
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)						8.65
E	average total precipitation, R_t, Oct - Mar (inches) (2)						2.56
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)						1.28
G=D+F	total annual effective precipitation (inches)						9.93
H=B-G	annual consumptive use of irrigation water (inches)						2.93
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)						16133
J	consumptive use of irrigation water (acre-feet per irrigation season)						3939.14
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.53	1.09	2.18	2.66	2.2	1.57
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)						10.23
C	average total precipitation, R_t, Apr-Sep (inches) (2)						9.1
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)						8.65
E	average total precipitation, R_t, Oct - Mar (inches) (2)						2.56
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)						1.28
G=D+F	total annual effective precipitation (inches)						9.93
H=B-G	annual consumptive use of irrigation water (inches)						0.3
I	average irrigated pasture, 1972 - 2001 (acres) (3)						2900
J	consumptive use of irrigation water (acre-feet per irrigation season)						72.5
Total South Platte consumptive use of irrigation water during 1976 (acre-feet)							26673

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.256 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.46	3.82	6.20	3.87	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.08	97.03	157.48	98.30	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.35			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.90	2.69	0.34	2.22	1.48	0.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	68.33	8.64	56.39	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.69	46.64	6.30	39.39	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.58	1.84	0.25	1.55	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.22			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			7.22			
L=C-K	annual consumptive use of irrigation water (inches)			8.13			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			3,642			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,467.46**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	2.91	6.10	4.14	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.96	73.91	154.94	105.16	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.29			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.90	2.69	0.34	2.22	1.48	0.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	68.33	8.64	56.39	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.43	44.33	6.27	39.99	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.57	1.75	0.25	1.57	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.14			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			7.14			
L=C-K	annual consumptive use of irrigation water (inches)			7.15			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			456			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**271.70**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.30	3.47	6.65	5.17	1.63	0.91
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.02	88.14	168.91	131.32	41.40	23.11
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.13			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.90	2.69	0.34	2.22	1.48	0.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	68.33	8.64	56.39	37.59	21.59
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.56	45.74	6.46	42.36	23.97	13.45
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.57	1.80	0.25	1.67	0.94	0.53
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.76			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			8.76			
L=C-K	annual consumptive use of irrigation water (inches)			10.37			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,967.71**			

Table 2.1.4.256 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.68	4.48	8.57	6.67	2.10	1.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.67	113.79	217.68	169.42	53.34	29.72
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.67			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.90	2.69	0.34	2.22	1.48	0.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	68.33	8.64	56.39	37.59	21.59
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.88	48.39	7.20	46.06	24.61	13.65
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.59	1.91	0.28	1.81	0.97	0.54
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.10			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.10			
L=C-K	annual consumptive use of irrigation water (inches)			15.57			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			911			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,182.02**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.90	1.15	6.37	8.84	3.58	1.17
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.86	29.21	161.80	224.54	90.93	29.72
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.01			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.90	2.69	0.34	2.22	1.48	0.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	68.33	8.64	56.39	37.59	21.59
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.24	40.18	6.36	52.00	26.73	13.65
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.56	1.58	0.25	2.05	1.05	0.54
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.03			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.03			
L=C-K	annual consumptive use of irrigation water (inches)			12.98			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,462.96**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.53	2.19	5.86	8.18	6.79	3.99
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.86	55.63	148.84	207.77	172.47	101.35
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.54			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.90	2.69	0.34	2.22	1.48	0.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	68.33	8.64	56.39	37.59	21.59
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.75	42.58	6.19	50.12	31.98	15.98
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.58	1.68	0.24	1.97	1.26	0.63
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.36			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.36			
L=C-K	annual consumptive use of irrigation water (inches)			19.18			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			911			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,456.08**			

Table 2.1.4.256 Consumptive use of irrigation water, CU_W, calculations - 1980 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.89	1.80	8.17	9.25	6.19	1.92
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.61	45.72	207.52	234.95	157.23	48.77
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			28.22			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.90	2.69	0.34	2.22	1.48	0.85
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	22.86	68.33	8.64	56.39	37.59	21.59
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	14.23	41.66	7.04	53.20	30.93	14.23
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.56	1.64	0.28	2.09	1.22	0.56
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.35			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			7.42			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
K=H+J	total annual effective precipitation (inches)			9.35			
L=C-K	annual consumptive use of irrigation water (inches)			18.87			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**3,580.58**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.15	4.02	5.44	6.68	2.95	1.99
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.23			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.47			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.05			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.42			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			11.05			
H=B-G	annual consumptive use of irrigation water (inches)			12.18			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			13,670			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,875.05**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.38	2.46	5.73	6.24	3.25	2.65
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.71			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.47			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.05			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.42			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			11.05			
H=B-G	annual consumptive use of irrigation water (inches)			10.66			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			16,133			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**14,331.48**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.83	1.62	4.02	4.42	3.67	2.75
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.31			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			8.47			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			8.05			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			7.42			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			3.00			
G=D+F	total annual effective precipitation (inches)			11.05			
H=B-G	annual consumptive use of irrigation water (inches)			6.26			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			2,900			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,512.83**			
	Total South Platte consumptive use of irrigation water during 1980 (acre-feet)			**43,108**			

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.257 Consumptive use of irrigation water, CU_W, calculations - 1977 - normal or average stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.30	3.57	4.71	2.91	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	33.02	90.68	119.63	73.91	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.49			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.86	2.50	2.44	3.49	1.07	0.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.24	63.50	61.98	88.65	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.07	43.09	44.94	55.76	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.14	1.70	1.77	2.20	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.81			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.96			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.98			
K=H+J	total annual effective precipitation (inches)			7.79			
L=C-K	annual consumptive use of irrigation water (inches)			4.70			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			3,642			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,426.45**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.22	3.25	5.55	3.72	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	30.99	82.55	140.97	94.49	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.74			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.86	2.50	2.44	3.49	1.07	0.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.24	63.50	61.98	88.65	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.94	42.33	47.10	58.34	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.14	1.67	1.85	2.30	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			6.96			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.96			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.98			
K=H+J	total annual effective precipitation (inches)			7.94			
L=C-K	annual consumptive use of irrigation water (inches)			5.80			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			456			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**220.40**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	3.14	4.88	3.76	1.13	0.73
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.45	79.76	123.95	95.50	28.70	18.54
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.76			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	1.86	2.50	2.44	3.49	1.07	0.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.24	63.50	61.98	88.65	27.18	4.83
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.77	42.07	45.37	58.47	17.12	1.71
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.13	1.66	1.79	2.30	0.67	0.07
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.62			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.96			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.98			
K=H+J	total annual effective precipitation (inches)			8.60			
L=C-K	annual consumptive use of irrigation water (inches)			6.16			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,168.86**			

Table 2.1.4.257 Consumptive use of irrigation water, CU_W, calculations - 1977 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.01	2.83	4.40	3.39	1.02	0.66
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	25.65	71.88	111.76	86.11	25.91	16.76
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.31			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.86	2.50	2.44	3.49	1.07	0.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.24	63.50	61.98	88.65	27.18	4.83
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.60	41.34	44.17	57.28	17.01	1.71
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.13	1.63	1.74	2.26	0.67	0.07
H	calculated effective precipitation, Re, Apr-Sep (inches)			7.50			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.96			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.98			
K=H+J	total annual effective precipitation (inches)			8.48			
L=C-K	annual consumptive use of irrigation water (inches)			4.83			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			911			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**366.68**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.87	1.16	5.25	7.18	2.78	1.05
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	22.10	29.46	133.35	182.37	70.61	26.67
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.29			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.86	2.50	2.44	3.49	1.07	0.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.24	63.50	61.98	88.65	27.18	4.83
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.38	37.66	46.31	70.78	18.77	1.75
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.12	1.48	1.82	2.79	0.74	0.07
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.02			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.96			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.98			
K=H+J	total annual effective precipitation (inches)			9.00			
L=C-K	annual consumptive use of irrigation water (inches)			9.29			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,762.78**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.57	2.35	5.11	7.04	5.59	3.81
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.88	59.69	129.79	178.82	141.99	96.77
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.47			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.86	2.50	2.44	3.49	1.07	0.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.24	63.50	61.98	88.65	27.18	4.83
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	29.51	40.25	45.95	70.23	21.96	2.04
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.16	1.58	1.81	2.76	0.86	0.08
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.25			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.96			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.98			
K=H+J	total annual effective precipitation (inches)			9.23			
L=C-K	annual consumptive use of irrigation water (inches)			16.24			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			911			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,232.89**			

Table 2.1.4.257 Consumptive use of irrigation water, CUW, calculations - 1977 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.92	1.94	7.18	8.02	5.13	1.85
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	23.37	49.28	182.37	203.71	130.30	46.99
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.04			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	1.86	2.50	2.44	3.49	1.07	0.19
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	47.24	63.50	61.98	88.65	27.18	4.83
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	28.46	39.34	51.59	74.18	21.40	1.83
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	1.12	1.55	2.03	2.92	0.84	0.07
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.53			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			1.96			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.98			
K=H+J	total annual effective precipitation (inches)			9.51			
L=C-K	annual consumptive use of irrigation water (inches)			15.53			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,946.82**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.15	4.22	4.64	5.63	2.37	1.86
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.87			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.55			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.97			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.96			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			0.98			
G=D+F	total annual effective precipitation (inches)			11.95			
H=B-G	annual consumptive use of irrigation water (inches)			8.92			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			13,670			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,161.37**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.93	1.75	3.32	3.57	1.78	1.68
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.03			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.55			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.97			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.96			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.98			
G=D+F	total annual effective precipitation (inches)			11.95			
H=B-G	annual consumptive use of irrigation water (inches)			1.08			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			16,133			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,451.97**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.56	1.15	2.32	2.52	2.00	1.75
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			10.30			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			11.55			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			10.97			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			1.96			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			0.98			
G=D+F	total annual effective precipitation (inches)			11.95			
H=B-G	annual consumptive use of irrigation water (inches)			0.00			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			2,900			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**0.00**			
	Total South Platte consumptive use of irrigation water during 1977 (acre-feet)			**20,738**			

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.258 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.53	3.71	5.53	3.72	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.86	94.23	140.46	94.49	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.49			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.52	3.98	0.63	0.98	1.38	0.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	101.09	16.00	24.89	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.23	65.38	12.73	18.14	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.32	2.57	0.50	0.71	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.10			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.38			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
K=H+J	total annual effective precipitation (inches)			5.29			
L=C-K	annual consumptive use of irrigation water (inches)			9.20			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			3,642			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,792.20**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.16	2.73	5.27	3.85	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.46	69.34	133.86	97.79	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.01			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.52	3.98	0.63	0.98	1.38	0.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	101.09	16.00	24.89	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.06	61.90	12.55	18.28	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.32	2.44	0.49	0.72	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			3.97			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.38			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
K=H+J	total annual effective precipitation (inches)			5.16			
L=C-K	annual consumptive use of irrigation water (inches)			7.85			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			456			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**298.30**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.57	3.88	6.81	5.70	1.79	1.01
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	39.88	98.55	172.97	144.78	45.47	25.65
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.76			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.52	3.98	0.63	0.98	1.38	0.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	101.09	16.00	24.89	35.05	3.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.25	66.01	13.67	20.27	22.65	0.21
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.32	2.60	0.54	0.80	0.89	0.01
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.16			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.38			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
K=H+J	total annual effective precipitation (inches)			6.35			
L=C-K	annual consumptive use of irrigation water (inches)			14.41			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,734.30**			

Table 2.1.4.258 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.67	4.12	7.24	6.06	1.90	1.07
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	42.42	104.65	183.90	153.92	48.26	27.18
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.06			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.52	3.98	0.63	0.98	1.38	0.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	101.09	16.00	24.89	35.05	3.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.29	66.90	14.01	20.68	22.79	0.22
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.33	2.63	0.55	0.81	0.90	0.01
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.23			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.38			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
K=H+J	total annual effective precipitation (inches)			6.42			
L=C-K	annual consumptive use of irrigation water (inches)			15.64			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			911			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,187.34**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.71	0.84	4.27	6.38	2.56	0.85
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	18.03	21.34	108.46	162.05	65.02	21.59
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.61			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.52	3.98	0.63	0.98	1.38	0.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	101.09	16.00	24.89	35.05	3.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.86	55.70	11.87	21.05	23.65	0.21
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	2.19	0.47	0.83	0.93	0.01
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.74			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.38			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
K=H+J	total annual effective precipitation (inches)			5.93			
L=C-K	annual consumptive use of irrigation water (inches)			9.68			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,836.78**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.23	1.62	3.97	5.95	4.91	2.93
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	31.24	41.15	100.84	151.13	124.71	74.42
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.61			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.52	3.98	0.63	0.98	1.38	0.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	101.09	16.00	24.89	35.05	3.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	8.09	58.18	11.67	20.55	26.97	0.24
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.32	2.29	0.46	0.81	1.06	0.01
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.95			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.38			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
K=H+J	total annual effective precipitation (inches)			6.14			
L=C-K	annual consumptive use of irrigation water (inches)			14.47			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			911			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,098.51**			

Table 2.1.4.258 Consumptive use of irrigation water, CU_W, calculations - 1978 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.68	1.29	5.35	6.51	4.32	1.36
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	17.27	32.77	135.89	165.35	109.73	34.54
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.51			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.52	3.98	0.63	0.98	1.38	0.12
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	13.21	101.09	16.00	24.89	35.05	3.05
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.85	57.12	12.60	21.20	26.09	0.22
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.31	2.25	0.50	0.83	1.03	0.01
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.93			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.38			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
K=H+J	total annual effective precipitation (inches)			6.12			
L=C-K	annual consumptive use of irrigation water (inches)			13.39			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,540.75**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.88	3.26	4.06	5.35	2.35	1.61
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.51			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.23			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.38			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.19			
G=D+F	total annual effective precipitation (inches)			8.42			
H=B-G	annual consumptive use of irrigation water (inches)			10.09			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			13,670			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**11,494.19**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	1.89	4.04	4.74	2.45	2.03
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.29			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.23			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.38			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.19			
G=D+F	total annual effective precipitation (inches)			8.42			
H=B-G	annual consumptive use of irrigation water (inches)			7.87			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			16,133			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**10,580.56**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.68	1.25	2.84	3.35	2.76	2.11
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			12.99			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.61			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.23			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.38			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.19			
G=D+F	total annual effective precipitation (inches)			8.42			
H=B-G	annual consumptive use of irrigation water (inches)			4.57			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			2,900			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,104.42**			
	Total South Platte consumptive use of irrigation water during 1978 (acre-feet)			**35,667**			

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.259 Consumptive use of irrigation water, CU_W, calculations - 1981 - normal or average stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.11	4.25	6.55	4.06	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	53.59	107.95	166.37	103.12	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.97			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.73	5.02	1.59	5.86	3.17	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.54	127.51	40.39	148.84	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.30	82.38	33.74	93.09	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.48	3.24	1.33	3.66	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.71			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.43			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.22			
K=H+J	total annual effective precipitation (inches)			9.93			
L=C-K	annual consumptive use of irrigation water (inches)			7.04			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			3,642			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,136.64**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.47	2.89	5.75	3.88	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	37.34	73.41	146.05	98.55	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.99			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.73	5.02	1.59	5.86	3.17	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.54	127.51	40.39	148.84	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.87	76.35	32.26	92.16	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.47	3.01	1.27	3.63	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.38			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.43			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.22			
K=H+J	total annual effective precipitation (inches)			9.60			
L=C-K	annual consumptive use of irrigation water (inches)			4.39			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			456			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**166.82**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.61	3.29	5.97	4.62	1.49	0.86
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.89	83.57	151.64	117.35	37.85	21.84
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.84			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.73	5.02	1.59	5.86	3.17	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.54	127.51	40.39	148.84	80.52	9.14
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.96	78.08	32.66	96.05	47.34	5.05
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.47	3.07	1.29	3.78	1.86	0.20
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.67			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.43			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.22			
K=H+J	total annual effective precipitation (inches)			11.89			
L=C-K	annual consumptive use of irrigation water (inches)			5.95			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,129.01**			

Table 2.1.4.259 Consumptive use of irrigation water, CU_W, calculations - 1981 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.08	4.26	7.73	5.98	1.93	1.12
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	52.83	108.20	196.34	151.89	49.02	28.45
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.10			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.73	5.02	1.59	5.86	3.17	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.54	127.51	40.39	148.84	80.52	9.14
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.28	82.42	36.04	103.63	48.52	5.12
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.48	3.24	1.42	4.08	1.91	0.20
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.33			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.43			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.22			
K=H+J	total annual effective precipitation (inches)			12.55			
L=C-K	annual consumptive use of irrigation water (inches)			10.55			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			911			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**800.92**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.13	1.11	5.85	8.07	3.34	1.14
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.70	28.19	148.59	204.98	84.84	28.96
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.64			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.73	5.02	1.59	5.86	3.17	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.54	127.51	40.39	148.84	80.52	9.14
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.64	69.13	32.45	116.46	52.50	5.13
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.46	2.72	1.28	4.59	2.07	0.20
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.32			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.43			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.22			
K=H+J	total annual effective precipitation (inches)			12.54			
L=C-K	annual consumptive use of irrigation water (inches)			8.10			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,536.98**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.95	2.13	5.41	7.50	6.36	3.91
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	49.53	54.10	137.41	190.50	161.54	99.31
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			27.26			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.73	5.02	1.59	5.86	3.17	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.54	127.51	40.39	148.84	80.52	9.14
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	12.19	73.18	31.66	112.81	62.14	5.98
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.48	2.88	1.25	4.44	2.45	0.24
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.74			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.43			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.22			
K=H+J	total annual effective precipitation (inches)			12.96			
L=C-K	annual consumptive use of irrigation water (inches)			14.30			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			911			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,085.61**			

Table 2.1.4.259 Consumptive use of irrigation water, CU_W, calculations - 1981 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	1.65	7.11	7.99	5.45	1.78
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	26.92	41.91	180.59	202.95	138.43	45.21
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.04			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.73	5.02	1.59	5.86	3.17	0.36
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	18.54	127.51	40.39	148.84	80.52	9.14
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	11.60	71.24	34.81	115.94	59.06	5.31
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.46	2.80	1.37	4.56	2.33	0.21
H	calculated effective precipitation, Re, Apr-Sep (inches)			11.73			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.43			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.22			
K=H+J	total annual effective precipitation (inches)			12.95			
L=C-K	annual consumptive use of irrigation water (inches)			12.09			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,294.08**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.62	3.76	4.83	5.88	2.66	1.88
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			21.63			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			16.72			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			15.88			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.43			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.22			
G=D+F	total annual effective precipitation (inches)			17.10			
H=B-G	annual consumptive use of irrigation water (inches)			4.53			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			13,670			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**5,160.43**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.87	2.57	5.68	6.15	3.27	2.79
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.33			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			16.72			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			15.88			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.43			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.22			
G=D+F	total annual effective precipitation (inches)			17.10			
H=B-G	annual consumptive use of irrigation water (inches)			5.23			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			16,133			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**7,031.30**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	1.69	3.98	4.35	3.68	2.90
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.72			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			16.72			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			15.88			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.43			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.22			
G=D+F	total annual effective precipitation (inches)			17.10			
H=B-G	annual consumptive use of irrigation water (inches)			0.62			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			2,900			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**149.83**			
	Total South Platte consumptive use of irrigation water during 1981 (acre-feet)			**21,492**			

Notes:
(1) See Table 2.1.4.88.
(2) See Appendix 2.1.4.E.
(3) See Table 2.1.4.52.

Table 2.1.4.260 Consumptive use of irrigation water, CU_W, calculations - 1975 - normal or average stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.51	4.24	5.79	3.96	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	38.35	107.70	147.07	100.58	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.50			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.47	2.27	1.49	2.62	0.39	0.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	11.94	57.66	37.85	66.55	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.31	41.03	30.44	45.92	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.29	1.62	1.20	1.81	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.92			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			6.54			
L=C-K	annual consumptive use of irrigation water (inches)			8.96			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			3,642			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,719.36**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.14	3.12	5.53	4.11	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.96	79.25	140.46	104.39	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			13.90			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.47	2.27	1.49	2.62	0.39	0.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	11.94	57.66	37.85	66.55	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.16	38.54	30.00	46.30	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.28	1.52	1.18	1.82	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			4.80			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			6.42			
L=C-K	annual consumptive use of irrigation water (inches)			7.48			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			456			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**284.24**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.36	3.89	6.27	5.35	1.90	0.94
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.54	98.81	159.26	135.89	48.26	23.88
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.71			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.47	2.27	1.49	2.62	0.39	0.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	11.94	57.66	37.85	66.55	9.91	13.21
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.25	40.24	31.27	49.62	5.94	7.96
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.29	1.58	1.23	1.95	0.23	0.31
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.59			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			7.21			
L=C-K	annual consumptive use of irrigation water (inches)			12.50			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,371.88**			

Table 2.1.4.260 Consumptive use of irrigation water, CU_W, calculations - 1975 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.18	3.38	5.44	4.64	1.65	0.82
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	29.97	85.85	138.18	117.86	41.91	20.83
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.11			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.47	2.27	1.49	2.62	0.39	0.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	11.94	57.66	37.85	66.55	9.91	13.21
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.17	39.11	29.85	47.70	5.86	7.91
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.28	1.54	1.18	1.88	0.23	0.31
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.42			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			7.04			
L=C-K	annual consumptive use of irrigation water (inches)			10.07			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			911			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**764.48**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.73	1.01	4.70	7.14	3.26	0.95
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	18.54	25.65	119.38	181.36	82.80	24.13
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			17.79			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.47	2.27	1.49	2.62	0.39	0.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	11.94	57.66	37.85	66.55	9.91	13.21
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.00	34.26	28.64	54.84	6.41	7.97
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.28	1.35	1.13	2.16	0.25	0.31
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.48			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			7.10			
L=C-K	annual consumptive use of irrigation water (inches)			10.69			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,028.43**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.24	1.89	4.27	6.53	6.11	3.22
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	31.50	48.01	108.46	165.86	155.19	81.79
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.26			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.47	2.27	1.49	2.62	0.39	0.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	11.94	57.66	37.85	66.55	9.91	13.21
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	7.20	35.98	27.96	53.00	7.52	9.04
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.28	1.42	1.10	2.09	0.30	0.36
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.55			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			7.17			
L=C-K	annual consumptive use of irrigation water (inches)			16.09			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			911			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,221.50**			

Table 2.1.4.260 Consumptive use of irrigation water, CU_W, calculations - 1975 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.61	1.33	5.09	6.31	4.75	1.32
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	15.49	33.78	129.29	160.27	120.65	33.53
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.41			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.47	2.27	1.49	2.62	0.39	0.52
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	11.94	57.66	37.85	66.55	9.91	13.21
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	6.95	34.87	29.27	52.36	6.97	8.13
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.27	1.37	1.15	2.06	0.27	0.32
H	calculated effective precipitation, Re, Apr-Sep (inches)			5.44			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
K=H+J	total annual effective precipitation (inches)			7.06			
L=C-K	annual consumptive use of irrigation water (inches)			12.35			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,343.41**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.83	3.68	4.19	5.64	2.81	1.70
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.85			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.76			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.37			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
G=D+F	total annual effective precipitation (inches)			8.99			
H=B-G	annual consumptive use of irrigation water (inches)			10.86			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			13,670			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**12,371.35**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.15	2.20	4.31	5.14	3.02	2.21
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.03			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.76			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.37			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.62			
G=D+F	total annual effective precipitation (inches)			8.99			
H=B-G	annual consumptive use of irrigation water (inches)			9.04			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			16,133			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**12,153.53**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.69	1.44	3.02	3.63	3.40	2.29
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			14.47			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			7.76			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			7.37			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			3.24			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.62			
G=D+F	total annual effective precipitation (inches)			8.99			
H=B-G	annual consumptive use of irrigation water (inches)			5.48			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			2,900			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,324.33**			
	Total South Platte consumptive use of irrigation water during 1975 (acre-feet)			**37,583**			

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.261 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - South Platte subbasin

	Crop						
winter wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.58	4.51	5.75	3.69	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	40.13	114.55	146.05	93.73	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.53			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.83	3.38	4.71	2.76	1.80	1.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	21.08	85.85	119.63	70.10	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.63	59.28	84.78	47.37	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.54	2.33	3.34	1.86	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.07			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			9.41			
L=C-K	annual consumptive use of irrigation water (inches)			6.12			
M	average irrigated, harvested winter wheat, 1972 - 2001 (acres) (3)			3,642			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,857.42**			
spring wheat		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.38	3.83	6.31	4.40	--	--
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	35.05	97.28	160.27	111.76	--	--
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			15.92			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.83	3.38	4.71	2.76	1.80	1.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	21.08	85.85	119.63	70.10	--	--
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.48	57.07	87.48	49.28	--	--
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.53	2.25	3.44	1.94	--	--
H	calculated effective precipitation, Re, Apr-Sep (inches)			8.16			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			9.50			
L=C-K	annual consumptive use of irrigation water (inches)			6.42			
M	average irrigated, harvested spring wheat, 1972 - 2001 (acres) (3)			456			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**243.96**			
barley		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.65	4.81	7.21	5.77	2.01	1.06
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	41.91	122.17	183.13	146.56	51.05	26.92
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			22.51			
D	average monthly subbasin precipitation, R_t, Apr-Sep (inches) (2)	0.83	3.38	4.71	2.76	1.80	1.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	21.08	85.85	119.63	70.10	45.72	39.12
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.68	60.29	91.99	53.20	29.35	24.10
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.54	2.37	3.62	2.09	1.16	0.95
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.73			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			12.07			
L=C-K	annual consumptive use of irrigation water (inches)			10.44			
M	average irrigated, harvested barley, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,980.99**			

Table 2.1.4.261 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
oats		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.37	4.00	6.00	4.80	1.67	0.88
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	34.80	101.60	152.40	121.92	42.42	22.35
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			18.72			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.83	3.38	4.71	2.76	1.80	1.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	21.08	85.85	119.63	70.10	45.72	39.12
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.47	57.62	85.98	50.40	28.80	23.86
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.53	2.27	3.39	1.98	1.13	0.94
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.24			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			11.58			
L=C-K	annual consumptive use of irrigation water (inches)			7.14			
M	average irrigated, harvested oats, 1972 - 2001 (acres) (3)			911			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**542.05**			
dry beans		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.77	1.06	4.64	6.62	2.96	0.92
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	19.56	26.92	117.86	168.15	75.18	23.37
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			16.97			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.83	3.38	4.71	2.76	1.80	1.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	21.08	85.85	119.63	70.10	45.72	39.12
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.03	48.89	79.69	55.79	30.95	23.92
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.51	1.92	3.14	2.20	1.22	0.94
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.93			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			11.27			
L=C-K	annual consumptive use of irrigation water (inches)			5.70			
M	average irrigated, harvested dry beans, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,081.58**			
sugar beets		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.12	1.74	3.65	5.24	4.80	2.68
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	28.45	44.20	92.71	133.10	121.92	68.07
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			19.23			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.83	3.38	4.71	2.76	1.80	1.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	21.08	85.85	119.63	70.10	45.72	39.12
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.28	50.79	75.40	51.65	34.30	26.39
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.52	2.00	2.97	2.03	1.35	1.04
H	calculated effective precipitation, Re, Apr-Sep (inches)			9.91			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			11.25			
L=C-K	annual consumptive use of irrigation water (inches)			7.98			
M	average irrigated, harvested sugar beets, 1972 - 2001 (acres) (3)			911			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**605.82**			

Table 2.1.4.261 Consumptive use of irrigation water, CU_W, calculations - 1991 - normal or average stream flow year - South Platte subbasin (cont)

	Crop						
corn		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	0.85	1.87	6.66	7.74	5.71	1.68
B	"yield-adjusted" evapotranspiration, ET_C, per month (millimeters per month) (1)	21.59	47.50	169.16	196.60	145.03	42.67
C	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			24.51			
D	monthly precipitation, R_t, Apr-Sep (inches) (2)	0.83	3.38	4.71	2.76	1.80	1.54
E=Dx25.4	monthly precipitation, R_t, Apr-Sep (millimeters)	21.08	85.85	119.63	70.10	45.72	39.12
F	calculated effective precipitation, R_e, Apr - Sep (millimeters) (3)	13.09	51.16	89.20	59.39	36.09	24.95
G=F/25.4	calculated monthly effective precipitation, Re, Apr - Sep (inches)	0.52	2.01	3.51	2.34	1.42	0.98
H	calculated effective precipitation, Re, Apr-Sep (inches)			10.78			
I	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
J=0.5xI	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
K=H+J	total annual effective precipitation (inches)			12.12			
L=C-K	annual consumptive use of irrigation water (inches)			12.39			
M	average irrigated, harvested corn, 1972 - 2001 (acres) (3)			2,277			
N	**consumptive use of irrigation water (acre-feet per irrigation season)**			**2,351.00**			
alfalfa		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	2.33	4.75	5.04	6.36	3.10	1.98
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			23.56			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			15.01			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			14.26			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
F=0.5xE	effective precipitation = 50 percent total precipitation, Oct - Mar (inches)			1.34			
G=D+F	total annual effective precipitation (inches)			15.60			
H=B-G	annual consumptive use of irrigation water (inches)			7.96			
I	average irrigated, harvested alfalfa, 1972 - 2001 (acres) (3)			13,670			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**9,067.77**			
other hay		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.77	3.45	6.30	7.06	4.06	3.13
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			25.77			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			15.01			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			14.26			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.34			
G=D+F	total annual effective precipitation (inches)			15.60			
H=B-G	annual consumptive use of irrigation water (inches)			10.17			
I	average irrigated, harvested other hay, 1972 - 2001 (acres) (3)			16,133			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**13,672.72**			
irrigated pasture		Apr	May	Jun	Jul	Aug	Sep
A	"yield-adjusted" evapotranspiration, ET_C, per month (inches per month) (1)	1.06	2.27	4.42	4.99	4.57	3.26
B	total "yield-adjusted" evapotranspiration, ET_C (inches, Apr-Sep)(1)			20.57			
C	average total precipitation, R_t, Apr-Sep (inches) (2)			15.01			
D=0.95xC	effective precipitation = 95 percent total precipitation, R_t, Apr-Sep (inches)			14.26			
E	average total precipitation, R_t, Oct - Mar (inches) (2)			2.67			
F=0.5xE	effective precipitation = 50 percent total precipitation, R_t, Oct - Mar (inches)			1.34			
G=D+F	total annual effective precipitation (inches)			15.60			
H=B-G	annual consumptive use of irrigation water (inches)			4.97			
I	average irrigated pasture, 1972 - 2001 (acres) (3)			2,900			
J	**consumptive use of irrigation water (acre-feet per irrigation season)**			**1,201.08**			
	Total South Platte consumptive use of irrigation water during 1991 (acre-feet)			**32,604**			

Notes:

(1) See Table 2.1.4.88.

(2) See Appendix 2.1.4.E.

(3) See Table 2.1.4.52.

Table 2.1.4.262 Summary – consumptive use of irrigation water - South Platte subbasin

No.	Year	Consumptive use of irrigation water (acre-feet)		
1	1986	49,340	**High stream flow years:**	
2	1984	29,850	**Average:**	**38,453**
3	1985	44,526	**Maximum:**	**49,340**
4	1973	30,096	**Minimum:**	**29,850**
5	1974	58,193		
6	1983	20,236		
7	1988	42,511		
8	1982	22,779		
9	1987	44,272		
10	1979	39,296		
11	1976	26,673		
12	1980	43,108		
13	1977	20,738	**Normal or average stream flow**	
14	1978	35,667	**years:**	
15	1981	21,492	**Average:**	**34,242**
16	1975	37,583	**Maximum:**	**58,193**
17	1991	32,604	**Minimum:**	**20,236**
18	1972	43,453	**Low stream flow years:**	
19	1989	45,756	**Average:**	**43,314**
20	1990	40,495	**Maximum:**	**45,756**
21	1992	43,550	**Minimum:**	**40,495**
	Average:	**36,772**		
	Maximum:	**58,193**		
	Minimum:	**20,236**		

designates high stream flow year

designates low stream flow year

Years which are neither shaded or outliend are normal or average stream flow years
See Table 3.1.1.5. in Technical Memorandum 3.1., Surface Water Data Collection, Study Period Selection, and High/Low/Normal River Flow Year Determination

Table 2.1.4.263 contains a summary of average high stream flow, low stream flow, and normal or average stream flow consumptive use values for the seven Platte River subbasins under consideration.

Table 2.1.4.263 Summary - average calculated consumptive use of irrigation water during high, low, and normal or average stream flow in the seven subbasins of Wyoming's Platte River Basin

Subbasin	Average high stream flow year consumptive use (acre-feet)	Average normal or average stream flow year consumptive use (acre-feet)	Average low stream flow year consumptive use (acre-feet)	Overall study period average consumptive use (acre-feet)
Above Pathfinder	94,777	110,521	85,920	102,754
Pathfinder to Guernsey	71,084	79,574	63,323	75,670
Guernsey to State Line	112,877	112,678	112,895	112,757
Upper Laramie	43,901	55,269	43,696	51,817
Lower Laramie	102,486	102,380	102,937	102,491
Horse Creek	63,036	70,861	61,281	67,546
South Platte	38,453	34,242	43,314	36,772

Note:
See Tables 2.1.4.120., 2.1.4.142., 2.1.4.164., 2.1.4.195., 2.1.4.218., 2.1.4.240., and 2.1.4.262.

2.1.4.10 Conclusions

Consumptive use calculations in this basin plan were based on the Supreme Court (2001) consumptive use calculation methodology. Unit consumptive use, CU_W in units of inches, and total annual consumptive use in units of acre-feet were reported for high stream flow, low stream flow, and normal or average stream flow years as determined in basin plan Technical Memorandum 3.1. Unit consumptive use values for the Above Pathfinder and Pathfinder to Guernsey subbasins were calculated during this study and derived from Supreme Court (2001) consumptive use data. Total consumptive use values for the Above Pathfinder and Pathfinder to Guernsey subbasins that are reported in this basin plan were taken directly from Supreme Court (2001) and subsequent Wyoming State Engineer's Office (SEO) calculations for years 2000 and 2001.

Intuitive consideration of basin plan consumptive use calculations may equate high stream flow years with assumed high precipitation and resultant low total consumptive use. Carrying this approach further, low stream flow years with assumed low precipitation should result in higher consumptive use. Average subbasin consumptive use values that are tabulated in Table 2.1.4.163 indicate that, in all but the Lower Laramie subbasin, average high flow year/normal flow year/low flow year subbasin consumptive use values do not support this intuitive assessment of stream flow, precipitation, and calculated consumptive use of irrigation water. A correlation between stream flow and calculated consumptive use of irrigation water in Wyoming's Platte River Basin is neither clearly discernible nor as expected. Consumptive use calculations in this study may serve as the basis for future assessments seeking to relate consumptive use to stream flow, precipitation, or crop yield data.

2.1.4.11 References

High Plains Regional Climate Center. http://hprcc.unl.edu.

National Agricultural Statistics Service. http://www.usda.gov/nass.

Pochop, Larry, and others. 1992. *Consumptive Use and Consumptive Irrigation Requirements in Wyoming*. Wyoming Water Resources Center.

Supreme Court. 2001. Exhibit A – "Procedures For Calculating Consumptive Use of Irrigation Water Above Guernsey Reservoir, Wyoming" to Exhibit 6 – "Procedure for Consumptive Use Accounting" to Appendix G – "North Platte Decree Committee Charter" to the Final Settlement Stipulation in State of Nebraska v. State of Wyoming. No. 108. Supreme Court of the United States.

APPENDIX 2.1.4.A

DERIVATION OF SOLAR RADIATION (RA) VALUES

Appendix 2.1.4.A. Derivation of solar radiation (R_A) values J, days of the year (Julian calendar)

Month	Day	Julian Day Number
Jan	15-Jan-04	**15**
Feb	15-Feb-04	**46**
Mar	15-Mar-04	**74**
Apr	15-Apr-04	**105**
May	15-May-04	**135**
Jun	15-Jun-04	**166**
Jul	15-Jul-04	**196**
Aug	15-Aug-04	**227**
Sep	15-Sep-04	**258**
Oct	15-Oct-04	**288**
Nov	15-Nov-04	**319**
Dec	15-Dec-04	**349**

Longitudes and latitudes for weather stations

Weather station number	Weather station name	Latitude (degrees) (1)	Latitude (radians)	Longitude (degrees, 1)	Longitude (radians)
1	Encampment 10 ESE	41.1833	0.71878418	106.6167	1.86081245
2	Saratoga 1 SSE	41.4500	0.72343897	106.8167	1.86430311
3	Medicine Bow	41.9000	0.73129296	106.2000	1.85353967
4	Muddy Gap	42.3667	0.73943841	107.4667	1.87564775
5	Casper WSO AP	42.9167	0.74903772	106.4667	1.85819446
6	Glenrock 5 ESE	42.8333	0.74758211	105.7833	1.84626688
7	Douglas 1 ESE	42.7500	0.74612826	105.3667	1.83899584
8	Torrington Exp Farm	42.0833	0.73449215	104.2167	1.81892455
9	Centennial 1 N	41.3167	0.72111245	106.1333	1.85237553
10	Laramie FAA Airport	41.3167	0.72111245	105.6833	1.84452155
11	Wheatland 4N	42.1167	0.73507509	104.9500	1.83172305
12	LaGrange	41.6333	0.72663816	104.1667	1.81805189
13	Cheyenne WSFO AP	41.1500	0.71820299	104.8167	1.82939653
14	Pine Bluffs 5 W	41.1667	0.71849446	104.1500	1.81776042

Notes:
(1) Longitudes and latitudes from High Plains Regional Climate Center.

Equations

$d_r = 1 + 0.033\cos((2\Pi J)/365)$

where: d_r relative distance between earth and sun (radians)
J julian day of the year - mid-month

$\xi = 0.4093 \sin((2\Pi J)/365 - 1.405)$

where: ξ solar declination (radians)

$w_s = \arccos(-\tan\Phi \tan\xi)$

where: w_s sunset hour angle (radians)
Φ latitude of weather station (radians)
ξ solar declination (radians)

$R_A = 15.392 \times d_r (w_s \sin\Phi \sin\xi + \cos\Phi \cos\xi \sin w_s)$

where: R_A extraterrestrial solar radiation (millimeters per day)

Appendix 2.1.4.A. Derivation of solar radiation (R_A) values J, days of the year (Julian calendar)

Encampment 10 ESE weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.71878418	1.22129676	15.88309684	-0.29309586	0.65847130	5.80329350	0.22847612	7.08
Feb	1.023183410	-0.23552909	0.71878418	1.35925626	15.74883905	-0.20886188	0.71551476	7.97919466	0.31414152	8.80
Mar	1.009655810	-0.05352543	0.71878418	1.52390395	15.54062223	-0.05368419	0.75070291	10.83210461	0.42646081	13.22
Apr	0.992261780	0.16032776	0.71878418	1.71276092	15.27289332	0.18004429	0.73548052	13.98271275	0.55050050	16.52
May	0.977430660	0.32537122	0.71878418	1.87042321	15.04461272	0.39369963	0.68134736	16.17366562	0.63675849	19.74
Jun	0.968322220	0.40644227	0.71878418	1.95688955	14.90441561	0.50942175	0.64040632	17.13751544	0.67470533	20.24
Jul	0.967887090	0.37727844	0.71878418	1.92484244	14.89771809	0.46691849	0.65628093	16.73310832	0.65878379	20.42
Aug	0.976217980	0.24409310	0.71878418	1.79046548	15.02594715	0.28492876	0.71274793	14.99103722	0.59019832	18.30
Sep	0.991162130	0.04303085	0.71878418	1.60847701	15.25596750	0.04556138	0.75137646	12.15805779	0.47866369	14.36
Oct	1.008014040	-0.16356315	0.71878418	1.42589531	15.51535210	-0.15288716	0.73478018	9.02827509	0.35544390	11.02
Nov	1.023183410	-0.33167385	0.71878418	1.26472090	15.74883905	-0.27117521	0.67851657	6.41515352	0.25256510	7.58
Dec	1.031756200	-0.40684278	0.71878418	1.18425466	15.88079143	-0.30857460	0.64017909	5.26614174	0.20732841	6.43

Saratoga 1 SSE weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.72343897	1.21785726	15.88309684	-0.29382221	0.65495656	5.73593185	0.22582409	7.00
Feb	1.023183410	-0.23552909	0.72343897	1.35723042	15.74883905	-0.20965787	0.71228156	7.91573960	0.31164329	8.73
Mar	1.009655810	-0.05352543	0.72343897	1.52346136	15.54062223	-0.05395355	0.74762190	10.78003778	0.42441094	13.16
Apr	0.992261780	0.16032776	0.72343897	1.71410903	15.27289332	0.18114268	0.73233548	13.95145449	0.54926986	16.48
May	0.977430660	0.32537122	0.72343897	1.87333811	15.04461272	0.39640674	0.67795123	16.16329958	0.63635038	19.73
Jun	0.968322220	0.40644227	0.72343897	1.96072633	14.90441561	0.51313057	0.63679189	17.13892226	0.67476072	20.24
Jul	0.967887090	0.37727844	0.72343897	1.92833070	14.89771809	0.47024821	0.65275440	16.73017630	0.65866836	20.42
Aug	0.976217980	0.24409310	0.72343897	1.79257172	15.02594715	0.28677852	0.70950212	14.97006024	0.58937245	18.27
Sep	0.991162130	0.04303085	0.72343897	1.60883256	15.25596750	0.04581340	0.74829822	12.11494107	0.47696618	14.31
Oct	1.008014040	-0.16356315	0.72343897	1.42451892	15.51535210	-0.15355054	0.73163212	8.96913926	0.35311572	10.95
Nov	1.023183410	-0.33167385	0.72343897	1.26173915	15.74883905	-0.27197226	0.67510620	6.34889154	0.24995636	7.50
Dec	1.031756200	-0.40684278	0.72343897	1.18041294	15.88079143	-0.30920661	0.63656337	5.19868443	0.20467262	6.34

Medicine Bow weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.73129296	1.21197906	15.88309684	-0.29499531	0.64897383	5.62227511	0.22134941	6.86
Feb	1.023183410	-0.23552909	0.73129296	1.35377211	15.74883905	-0.21097690	0.70678423	7.80838984	0.30741692	8.61
Mar	1.009655810	-0.05352543	0.73129296	1.52270625	15.54062223	-0.05440471	0.74238631	10.69166215	0.42093158	13.05
Apr	0.992261780	0.16032776	0.73129296	1.71640963	15.27289332	0.18299325	0.72698981	13.89807420	0.54716828	16.42
May	0.977430660	0.32537122	0.73129296	1.87831733	15.04461272	0.40098266	0.67217320	16.14521430	0.63563836	19.70
Jun	0.968322220	0.40644227	0.73129296	1.96728623	14.90441561	0.51940991	0.63063685	17.14077488	0.67483366	20.25
Jul	0.967887090	0.37727844	0.73129296	1.93429250	14.89771809	0.47588230	0.64675130	16.72467889	0.65845192	20.41
Aug	0.976217980	0.24409310	0.73129296	1.79616746	15.02594715	0.28990030	0.70398309	14.93403929	0.58795430	18.23
Sep	0.991162130	0.04303085	0.73129296	1.60943917	15.25596750	0.04623683	0.74306740	12.04159968	0.47407873	14.22
Oct	1.008014040	-0.16356315	0.73129296	1.42217004	15.51535210	-0.15465587	0.72628128	8.86896951	0.34917203	10.82
Nov	1.023183410	-0.33167385	0.73129296	1.25664545	15.74883905	-0.27327479	0.66930360	6.23699399	0.24555094	7.37
Dec	1.031756200	-0.40684278	0.73129296	1.17384455	15.88079143	-0.31021098	0.63040610	5.08495192	0.20019496	6.21

Appendix 2.1.4.A. Derivation of solar radiation (R_A) values J, days of the year (Julian calendar)

Muddy Gap weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.73943841	1.20578053	15.88309684	-0.29614117	0.64269932	5.50441666	0.21670932	6.72
Feb	1.023183410	-0.23552909	0.73943841	1.35013073	15.74883905	-0.21231257	0.70102734	7.69669025	0.30301930	8.48
Mar	1.009655810	-0.05352543	0.73943841	1.52191177	15.54062223	-0.05486816	0.73690761	10.59931744	0.41729596	12.94
Apr	0.992261780	0.16032776	0.73943841	1.71883094	15.27289332	0.18490890	0.72139418	13.84187026	0.54495552	16.35
May	0.977430660	0.32537122	0.73943841	1.88356453	15.04461272	0.40573985	0.66611725	16.12567496	0.63486909	19.68
Jun	0.968322220	0.40644227	0.73943841	1.97420748	14.90441561	0.52595186	0.62417804	17.14201404	0.67488244	20.25
Jul	0.967887090	0.37727844	0.73943841	1.94057961	14.89771809	0.48174741	0.64045502	16.71825544	0.65819903	20.40
Aug	0.976217980	0.24409310	0.73943841	1.79995378	15.02594715	0.29313908	0.69820310	14.89585520	0.58645099	18.18
Sep	0.991162130	0.04303085	0.73943841	1.61007740	15.25596750	0.04667354	0.73759376	11.96475644	0.47105340	14.13
Oct	1.008014040	-0.16356315	0.73943841	1.41969787	15.51535210	-0.15578346	0.72068015	8.76457105	0.34506185	10.70
Nov	1.023183410	-0.33167385	0.73943841	1.25127720	15.74883905	-0.27456859	0.66322146	6.12083150	0.24097762	7.23
Dec	1.031756200	-0.40684278	0.73943841	1.16691429	15.88079143	-0.31116881	0.62394490	4.96713185	0.19555637	6.06

Casper WSO AP weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.74903772	1.19833690	15.88309684	-0.29739700	0.63521316	5.36556678	0.21124279	6.55
Feb	1.023183410	-0.23552909	0.74903772	1.34576538	15.74883905	-0.21384365	0.69417050	7.56459025	0.29781851	8.34
Mar	1.009655810	-0.05352543	0.74903772	1.52096014	15.54062223	-0.05540843	0.73038768	10.48959754	0.41297628	12.80
Apr	0.992261780	0.16032776	0.74903772	1.72173220	15.27289332	0.18716187	0.71473275	13.77454032	0.54230474	16.27
May	0.977430660	0.32537122	0.74903772	1.88986107	15.04461272	0.41136200	0.65889721	16.10163532	0.63392265	19.65
Jun	0.968322220	0.40644227	0.74903772	1.98252438	14.90441561	0.53370205	0.61646701	17.14259769	0.67490542	20.25
Jul	0.967887090	0.37727844	0.74903772	1.94813017	14.89771809	0.48868953	0.63294231	16.70975495	0.65786437	20.39
Aug	0.976217980	0.24409310	0.74903772	1.80449322	15.02594715	0.29695781	0.69131825	14.84978385	0.58463716	18.12
Sep	0.991162130	0.04303085	0.74903772	1.61084185	15.25596750	0.04718501	0.73107995	11.87318494	0.46744823	14.02
Oct	1.008014040	-0.16356315	0.74903772	1.41673562	15.51535210	-0.15708740	0.71401206	8.64088219	0.34019221	10.55
Nov	1.023183410	-0.33167385	0.74903772	1.24483484	15.74883905	-0.27601723	0.65596954	5.98380778	0.23558298	7.07
Dec	1.031756200	-0.40684278	0.74903772	1.15858651	15.88079143	-0.31218549	0.61623095	4.82848254	0.19009774	5.89

Glenrock 5 ESE weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.74758211	1.19947552	15.88309684	-0.29721325	0.63635475	5.38661729	0.21207155	6.57
Feb	1.023183410	-0.23552909	0.74758211	1.34643259	15.74883905	-0.21361451	0.69521528	7.58465301	0.29860839	8.36
Mar	1.009655810	-0.05352543	0.74758211	1.52110553	15.54062223	-0.05532692	0.73138073	10.50629687	0.41363374	12.82
Apr	0.992261780	0.16032776	0.74758211	1.72128887	15.27289332	0.18682056	0.71574752	13.78482600	0.54270969	16.28
May	0.977430660	0.32537122	0.74758211	1.88889825	15.04461272	0.41050833	0.65999783	16.10535059	0.63406892	19.66
Jun	0.968322220	0.40644227	0.74758211	1.98125179	14.90441561	0.53252392	0.61764324	17.14256937	0.67490431	20.25
Jul	0.967887090	0.37727844	0.74758211	1.94697515	14.89771809	0.48763468	0.63408799	16.71110811	0.65791764	20.40
Aug	0.976217980	0.24409310	0.74758211	1.80379937	15.02594715	0.29637860	0.69236733	14.85684409	0.58491512	18.13
Sep	0.991162130	0.04303085	0.74758211	1.61072506	15.25596750	0.04710767	0.73207206	11.88714064	0.46799766	14.04
Oct	1.008014040	-0.16356315	0.74758211	1.41718828	15.51535210	-0.15689143	0.71502785	8.65968308	0.34093240	10.57
Nov	1.023183410	-0.33167385	0.74758211	1.24582000	15.74883905	-0.27580293	0.65707507	6.00459357	0.23640132	7.09
Dec	1.031756200	-0.40684278	0.74758211	1.15986077	15.88079143	-0.31203924	0.61740763	4.84949171	0.19092487	5.92

Appendix 2.1.4.A. Derivation of solar radiation (R_A) values J, days of the year (Julian calendar)

Douglas 1 ESE weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.74612826	1.20060920	15.88309684	-0.29702731	0.63749266	5.40764412	0.21289937	6.60
Feb	1.023183410	-0.23552909	0.74612826	1.34709710	15.74883905	-0.21338455	0.69625701	7.60468065	0.29939688	8.38
Mar	1.009655810	-0.05352543	0.74612826	1.52125035	15.54062223	-0.05524536	0.73237102	10.52295408	0.41428953	12.84
Apr	0.992261780	0.16032776	0.74612826	1.72084729	15.27289332	0.18647954	0.71675941	13.79507213	0.54311308	16.29
May	0.977430660	0.32537122	0.74612826	1.88793948	15.04461272	0.40965610	0.66109506	16.10903652	0.63421404	19.66
Jun	0.968322220	0.40644227	0.74612826	1.97998487	14.90441561	0.53134827	0.61881557	17.14251989	0.67490236	20.25
Jul	0.967887090	0.37727844	0.74612826	1.94582516	14.89771809	0.48658189	0.63522997	16.71243684	0.65796995	20.40
Aug	0.976217980	0.24409310	0.74612826	1.80310835	15.02594715	0.29580015	0.69341334	14.86386962	0.58519172	18.14
Sep	0.991162130	0.04303085	0.74612826	1.61060872	15.25596750	0.04703035	0.73306141	11.90105454	0.46854545	14.06
Oct	1.008014040	-0.16356315	0.74612826	1.41763914	15.51535210	-0.15669506	0.71604076	8.67844548	0.34167108	10.59
Nov	1.023183410	-0.33167385	0.74612826	1.24680099	15.74883905	-0.27558696	0.65817717	6.02535164	0.23721857	7.12
Dec	1.031756200	-0.40684278	0.74612826	1.16112936	15.88079143	-0.31189033	0.61858041	4.87048119	0.19175123	5.94

Torrington Experimental Farm weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.73449215	1.20955715	15.88309684	-0.29545403	0.64651796	5.57598240	0.21952687	6.81
Feb	1.023183410	-0.23552909	0.73449215	1.35234867	15.74883905	-0.21150545	0.70452991	7.76456287	0.30569145	8.56
Mar	1.009655810	-0.05352543	0.73449215	1.52239561	15.54062223	-0.05458727	0.74024042	10.65547658	0.41950695	13.00
Apr	0.992261780	0.16032776	0.73449215	1.71735626	15.27289332	0.18374607	0.72479833	13.87610170	0.54630322	16.39
May	0.977430660	0.32537122	0.73449215	1.88036795	15.04461272	0.40284966	0.66980239	16.13763468	0.63533995	19.70
Jun	0.968322220	0.40644227	0.73449215	1.96999005	14.90441561	0.52197565	0.62810929	17.14134393	0.67485606	20.25
Jul	0.967887090	0.37727844	0.73449215	1.93674897	14.89771809	0.47818315	0.64428696	16.72224326	0.65835603	20.41
Aug	0.976217980	0.24409310	0.73449215	1.79764753	15.02594715	0.29117221	0.70171976	14.91914227	0.58736781	18.21
Sep	0.991162130	0.04303085	0.73449215	1.60968871	15.25596750	0.04640865	0.74092348	12.01151339	0.47289423	14.19
Oct	1.008014040	-0.16356315	0.73449215	1.42120352	15.51535210	-0.15510103	0.72408765	8.82802775	0.34756015	10.77
Nov	1.023183410	-0.33167385	0.73449215	1.25454758	15.74883905	-0.27378993	0.66692260	6.19138315	0.24375524	7.31
Dec	1.031756200	-0.40684278	0.73449215	1.17113722	15.88079143	-0.31059746	0.62787761	5.03865989	0.19837244	6.15

Centennial 1 N weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.72111245	1.21958042	15.88309684	-0.29346204	0.65671615	5.76960021	0.22714961	7.04
Feb	1.023183410	-0.23552909	0.72111245	1.35824515	15.74883905	-0.20926134	0.71389987	7.94747099	0.31289256	8.76
Mar	1.009655810	-0.05352543	0.72111245	1.52368303	15.54062223	-0.05381911	0.74916387	10.80609023	0.42543662	13.19
Apr	0.992261780	0.16032776	0.72111245	1.71343382	15.27289332	0.18059385	0.73390957	13.96711317	0.54988635	16.50
May	0.977430660	0.32537122	0.72111245	1.87187790	15.04461272	0.39505325	0.67965129	16.16851359	0.63655565	19.73
Jun	0.968322220	0.40644227	0.72111245	1.95880398	14.90441561	0.51127569	0.63860153	17.13824799	0.67473417	20.24
Jul	0.967887090	0.37727844	0.72111245	1.92658309	14.89771809	0.46858312	0.65451991	16.73167233	0.65872726	20.42
Aug	0.976217980	0.24409310	0.72111245	1.79151672	15.02594715	0.28585395	0.71112675	14.98057931	0.58978659	18.28
Sep	0.991162130	0.04303085	0.72111245	1.60865449	15.25596750	0.04568754	0.74983881	12.13652414	0.47781591	14.33
Oct	1.008014040	-0.16356315	0.72111245	1.42520830	15.51535210	-0.15321974	0.73320772	8.99871772	0.35428023	10.98
Nov	1.023183410	-0.33167385	0.72111245	1.26323287	15.74883905	-0.27157620	0.67681340	6.38201544	0.25126045	7.54
Dec	1.031756200	-0.40684278	0.72111245	1.18233776	15.88079143	-0.30889411	0.63837365	5.23239586	0.20599984	6.39

Appendix 2.1.4.A. Derivation of solar radiation (R_A) values J, days of the year (Julian calendar)

Laramie FAA Airport weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.72111245	1.21958042	15.88309684	-0.29346204	0.65671615	5.76960021	0.22714961	7.04
Feb	1.023183410	-0.23552909	0.72111245	1.35824515	15.74883905	-0.20926134	0.71389987	7.94747099	0.31289256	8.76
Mar	1.009655810	-0.05352543	0.72111245	1.52368303	15.54062223	-0.05381911	0.74916387	10.80609023	0.42543662	13.19
Apr	0.992261780	0.16032776	0.72111245	1.71343382	15.27289332	0.18059385	0.73390957	13.96711317	0.54988635	16.50
May	0.977430660	0.32537122	0.72111245	1.87187790	15.04461272	0.39505325	0.67965129	16.16851359	0.63655565	19.73
Jun	0.968322220	0.40644227	0.72111245	1.95880398	14.90441561	0.51127569	0.63860153	17.13824799	0.67473417	20.24
Jul	0.967887090	0.37727844	0.72111245	1.92658309	14.89771809	0.46858312	0.65451991	16.73167233	0.65872726	20.42
Aug	0.976217980	0.24409310	0.72111245	1.79151672	15.02594715	0.28585395	0.71112675	14.98057931	0.58978659	18.28
Sep	0.991162130	0.04303085	0.72111245	1.60865449	15.25596750	0.04568754	0.74983881	12.13652414	0.47781591	14.33
Oct	1.008014040	-0.16356315	0.72111245	1.42520830	15.51535210	-0.15321974	0.73320772	8.99871772	0.35428023	10.98
Nov	1.023183410	-0.33167385	0.72111245	1.26323287	15.74883905	-0.27157620	0.67681340	6.38201544	0.25126045	7.54
Dec	1.031756200	-0.40684278	0.72111245	1.18233776	15.88079143	-0.30889411	0.63837365	5.23239586	0.20599984	6.39

Wheatland 4N weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.73507509	1.20911410	15.88309684	-0.29553641	0.64606928	5.56754752	0.21919478	6.80
Feb	1.023183410	-0.23552909	0.73507509	1.35208836	15.74883905	-0.21160121	0.70411820	7.75657080	0.30537680	8.55
Mar	1.009655810	-0.05352543	0.73507509	1.52233881	15.54062223	-0.05462047	0.73984858	10.64887120	0.41924690	13.00
Apr	0.992261780	0.16032776	0.73507509	1.71752936	15.27289332	0.18388318	0.72439814	13.87208370	0.54614503	16.38
May	0.977430660	0.32537122	0.73507509	1.88074302	15.04461272	0.40319005	0.66936932	16.13624034	0.63528505	19.69
Jun	0.968322220	0.40644227	0.73507509	1.97048474	14.90441561	0.52244367	0.62764745	17.14143604	0.67485969	20.25
Jul	0.967887090	0.37727844	0.73507509	1.93719835	14.89771809	0.47860277	0.64383672	16.72178710	0.65833807	20.41
Aug	0.976217980	0.24409310	0.73507509	1.79791819	15.02594715	0.29140399	0.70130640	14.91641386	0.58726039	18.21
Sep	0.991162130	0.04303085	0.73507509	1.60973434	15.25596750	0.04643991	0.74053200	12.00601788	0.47267787	14.18
Oct	1.008014040	-0.16356315	0.73507509	1.42102679	15.51535210	-0.15518183	0.72368707	8.82055897	0.34726610	10.77
Nov	1.023183410	-0.33167385	0.73507509	1.25416385	15.74883905	-0.27388283	0.66648766	6.18307028	0.24342796	7.30
Dec	1.031756200	-0.40684278	0.73507509	1.17064188	15.88079143	-0.31066645	0.62741560	5.03022719	0.19804044	6.14

LaGrange weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.72663816	1.21547433	15.88309684	-0.29430805	0.65252754	5.68963485	0.22400137	6.94
Feb	1.023183410	-0.23552909	0.72663816	1.35582788	15.74883905	-0.21019882	0.71004867	7.87205484	0.30992342	8.68
Mar	1.009655810	-0.05352543	0.72663816	1.52315506	15.54062223	-0.05413783	0.74549487	10.74411858	0.42299679	13.11
Apr	0.992261780	0.16032776	0.72663816	1.71504217	15.27289332	0.18189689	0.73016392	13.92980745	0.54841762	16.45
May	0.977430660	0.32537122	0.72663816	1.87535698	15.04461272	0.39826940	0.67560489	16.15602280	0.63606389	19.72
Jun	0.968322220	0.40644227	0.72663816	1.96338518	14.90441561	0.51568505	0.63429331	17.13975542	0.67479352	20.24
Jul	0.967887090	0.37727844	0.72663816	1.93074747	14.89771809	0.47254071	0.65031716	16.72802000	0.65858346	20.42
Aug	0.976217980	0.24409310	0.72663816	1.79402997	15.02594715	0.28805001	0.70726046	14.95548252	0.58879852	18.25
Sep	0.991162130	0.04303085	0.72663816	1.60907862	15.25596750	0.04598615	0.74617312	12.08515608	0.47579355	14.27
Oct	1.008014040	-0.16356315	0.72663816	1.42356620	15.51535210	-0.15400290	0.72945847	8.92839579	0.35151165	10.90
Nov	1.023183410	-0.33167385	0.72663816	1.25967391	15.74883905	-0.27250928	0.67274994	6.30332574	0.24816243	7.44
Dec	1.031756200	-0.40684278	0.72663816	1.17775065	15.88079143	-0.30962519	0.63406389	5.15234333	0.20284816	6.29

Appendix 2.1.4.A. Derivation of solar radiation (R_A) values J, days of the year (Julian calendar)

Cheyenne WSFO AP weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.71820299	1.22172394	15.88309684	-0.29300357	0.65890852	5.81170376	0.22880723	7.09
Feb	1.023183410	-0.23552909	0.71820299	1.35950799	15.74883905	-0.20876176	0.71591715	7.98710861	0.31445309	8.80
Mar	1.009655810	-0.05352543	0.71820299	1.52395895	15.54062223	-0.05365046	0.75108645	10.83858925	0.42671611	13.23
Apr	0.992261780	0.16032776	0.71820299	1.71259339	15.27289332	0.17990706	0.73587200	13.98659589	0.55065338	16.52
May	0.977430660	0.32537122	0.71820299	1.87006111	15.04461272	0.39336187	0.68176992	16.17494140	0.63680872	19.74
Jun	0.968322220	0.40644227	0.71820299	1.95641311	14.90441561	0.50895932	0.64085588	17.13732362	0.67469778	20.24
Jul	0.967887090	0.37727844	0.71820299	1.92440922	14.89771809	0.46650323	0.65671962	16.73345737	0.65879753	20.42
Aug	0.976217980	0.24409310	0.71820299	1.79020377	15.02594715	0.28469782	0.71315188	14.99363686	0.59030066	18.30
Sep	0.991162130	0.04303085	0.71820299	1.60843282	15.25596750	0.04552985	0.75175965	12.16342270	0.47887491	14.37
Oct	1.008014040	-0.16356315	0.71820299	1.42606636	15.51535210	-0.15280390	0.73517203	9.03564659	0.35573412	11.03
Nov	1.023183410	-0.33167385	0.71820299	1.26509130	15.74883905	-0.27107440	0.67894089	6.42342370	0.25289070	7.59
Dec	1.031756200	-0.40684278	0.71820299	1.18473171	15.88079143	-0.30849379	0.64062881	5.27456698	0.20766012	6.44

Pine Bluffs 5W weather station

Month	d_r, relative distance earth to sun (radians)	ξ, solar declination (radians)	Φ, latitude of site (radians)	w_s, sunset hour angle (radians)	15.392 d_r	w_s sinΦsinξ	cosΦcosξsinw_s	R_A (mm/day)	R_A (in/day)	R_A (in/mo)
Jan	1.031905980	-0.37305514	0.71849446	1.22150977	15.88309684	-0.29304990	0.65868930	5.80748600	0.22864118	7.09
Feb	1.023183410	-0.23552909	0.71849446	1.35938178	15.74883905	-0.20881199	0.71571539	7.98314006	0.31429685	8.80
Mar	1.009655810	-0.05352543	0.71849446	1.52393138	15.54062223	-0.05366738	0.75089413	10.83533753	0.42658809	13.22
Apr	0.992261780	0.16032776	0.71849446	1.71267739	15.27289332	0.17997589	0.73567570	13.98464905	0.55057673	16.52
May	0.977430660	0.32537122	0.71849446	1.87024266	15.04461272	0.39353125	0.68155804	16.17430201	0.63678354	19.74
Jun	0.968322220	0.40644227	0.71849446	1.95665197	14.90441561	0.50919121	0.64063047	17.13742020	0.67470158	20.24
Jul	0.967887090	0.37727844	0.71849446	1.92462642	14.89771809	0.46671148	0.65649966	16.73328292	0.65879067	20.42
Aug	0.976217980	0.24409310	0.71849446	1.79033498	15.02594715	0.28481363	0.71294933	14.99233351	0.59024935	18.30
Sep	0.991162130	0.04303085	0.71849446	1.60845498	15.25596750	0.04554566	0.75156751	12.16073262	0.47876900	14.36
Oct	1.008014040	-0.16356315	0.71849446	1.42598060	15.51535210	-0.15284567	0.73497555	9.03195006	0.35558859	11.02
Nov	1.023183410	-0.33167385	0.71849446	1.26490559	15.74883905	-0.27112499	0.67872813	6.41927625	0.25272741	7.58
Dec	1.031756200	-0.40684278	0.71849446	1.18449253	15.88079143	-0.30853436	0.64040332	5.27034174	0.20749377	6.43

APPENDIX 2.1.4.B

TEMPERATURE DATA (UNFORMATTED)

Appendix 2.1.4.B. Temperature data - average temperatures - Casper WSO AP station

ID: 481570
Latitude: 42.90 degrees
Longitude: -106.46 degrees
Elevation: 5338 feet
Station period of record: 03/17/1950-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1950	-999z	-999z	-999p	40.7	46.2	61.0	66.3	66.5	56.2	52.2	33.8	31.1	50.5c
1951	20.5	29.6	28.7	37.9	53.0	56.2	69.9	68.0	55.3	44.3	33.5	20.4	43.1
1952	25.8	26.8a	27.0	47.1	53.7	66.2	70.0	70.2	63.2	49.6	28.1	28.2	46.3
1953	32.7	24.9	36.5	38.4	48.6	65.5	73.4	70.8	62.1	50.7	39.2	24.7	47.3
1954	27.1	37.2	26.1	46.9	53.7a	63.1	76.1	71.1	62.5	46.1	40.2	29.8	48.3
1955	22.2	20.2	25.8	43.3	54.8	60.4	73.2	73.2	60.6	50.4	26.0	27.2	44.8
1956	27.4	24.1	33.2	40.7	55.9	68.3	70.8	66.8a	61.0	49.8	29.8	28.3	46.3
1957	16.2	32.1	34.6	38.7	51.5	61.5	71.8	71.0	56.2	46.4	29.3	31.8	45.1
1958	28.2	31.2	28.4	40.2	59.0	63.6	66.3	71.2	60.0	49.7	33.9	29.0	46.7
1959	23.6	22.9	32.5	42.0	50.6	66.8	70.0	70.3	56.2	43.7	30.6	30.3	45.0
1960	22.1	18.4	33.2	44.2	53.5	63.7	71.4	67.2	60.7	47.5	33.7	25.5	45.1
1961	28.7	31.4	37.0	41.0	54.4	66.1	70.3	72.1	51.4	44.7	30.3	21.6	45.7
1962	15.3	26.6	30.2	46.7	54.4	61.5	67.7	67.7	58.4	51.3	39.9	30.4	45.8
1963	13.6	32.4	34.8	42.3	55.1	64.9	72.0	70.4	64.1	54.6	38.3	24.9	47.3
1964	22.9	21.2	25.1	39.7	54.1	61.1	74.0	66.0	56.1	47.1	31.3	23.4	43.5
1965	29.7	22.6	20.4	45.8	49.8	60.1	69.2	66.3	47.6	51.7	39.8	29.0	44.3
1966	21.8	24.3	36.2	38.9	55.8	61.8	74.9	66.5	62.2	45.1	36.1	25.3	45.7
1967	26.7	27.6	36.4	42.6	49.1	58.5	69.8	68.9	61.0	48.1	30.8	17.3	44.7
1968	23.2	30.3	36.7	38.3	48.0	60.5	69.1	64.9	56.5	47.9	32.0	18.8	43.8
1969	27.1	29.0	28.4	46.7	55.3	57.0	71.5	71.8	63.2	37.8	34.4	28.5	45.9
1970	23.2	32.7	27.6	38.2	53.3	62.6	71.2	72.2	54.7	41.1	34.9	25.2	44.7
1971	25.4	24.7	31.6	40.9	50.1	64.3	67.2	71.2	53.9	42.8	30.5	23.9	43.9
1972	17.7	28.5	38.2	43.0	52.1	65.0	65.9	68.0	56.7	44.1	30.5	17.7	43.9
1973	19.2	24.5	33.0	36.1	51.1	63.0	68.4	70.6	55.0	48.7	33.0	26.7	44.1
1974	18.7	27.5	36.1	43.0	51.4	64.9	72.5	64.4	54.3	48.5	34.3	24.3	45.0
1975	21.1	20.8	30.2	37.7	48.8	58.8	72.9	68.0	56.7	47.6	32.5	28.4	43.6
1976	23	30.2	32.0	44.0	53.6	60.7	72.8	68.4	59.2	43.8	34.2	28.3	45.8
1977	20.2	30.8	31.3	46.5	55.1	69.3	71.7	66.1	60.3	48.8	33.3	24.8	46.5
1978	17.0	22.3	37.2	44.6	49.6	63.6	69.6	66.8	60.1	47.9	26.9	13.2	43.2
1979	8.8	23.6	35.4	43.7	49.3	61.8	70.8	67.6	62.1	47.8	26.5	28.7	43.8
1980	16.3	27.5	31.0	44.2	51.6	64.4	72.2	66.4	59.6	46.5	33.8	34.3	45.6
1981	31.3	29.9	37.9	48.3	51.3	64.3	71.8	69.2	62.0	44.4	39.0	27.3	48.1
1982	20.0	25.7	36.6	41.1	51.1	60.3	70.7	73.7	56.9	45.2	32.1	23.3	44.7
1983	31.2	31.5	36.2	38.0	48.4	60.4	71.2	74.7	60.3	49.6	31.1	10.9	45.3
1984	21.9	27.4	34.4	39.1	54.5	61.5	70.4	71.1	52.5	40.1	34.8	22.9	44.2
1985	16.0	19.7	33.3	45.5	55.3	61.3	71.6	66.7	53.4	45.2	20.2	21.3	42.5
1986	31.5	28.5	42.8	44.4	50.9	67.4	69.0	69.3	55.4	45.9	31.9	26.2	46.9
1987	23.1	28.3	32.4	49.7	57.4	64.8	70.7	66.1	58.6	46.7	35.4	23.7	46.4
1988	20.3	27.4	32.0	45.9	54.1	72.5	73.5	69.8	58.0	49.8	33.9	26.3	47.0
1989	26.1	11.9	35.6	44.9	53.9	61.2	73.4	69.0	58.2	46.3	37.3	24.0	45.1
1990	29.1	27.9	35.3	44.3	50.5	64.6	69.8	68.5	63.2	46.2	36.9	15.8	46.0
1991	21.3	35.5	36.5	42.0	51.8	64.9	71.5	72.0	59.4	46.0	30.4	27.9	46.6
1992	28.0	36.2	40.6	49.0	56.2	63.7	67.2	68.4	61.1	50.6	32.3	21.9	47.9
1993	21.5	19.6	38.3	43.9	56.1	60.3	66.7	68.0	58.1	47.3	29.4	28.9	44.8
1994	29	25.2	41.5	46.7	61.0	68.4	71.4	73.4	62.8	45.6	32.1	31.8	49.1
1995	27.3	30.9	36.9	40.4	48.3	59.4	69.0	72.6	58.0	44.0	37.2	28.3	46.0
1996	20.8	28.3	30.7	43.2	50.3	64.3	69.9	67.9	55.8	44.0	32.5	26.0	44.5
1997	21.3	24.7	36.9	34.9	51.6	63.2	69.0	68.4	59.9	46.8	32.0	22.8	44.3
1998	25.6	31.2	31.8	42.6	54.4	56.0	72.7	69.9	64.7	44.8	38.4	24.5	46.4
1999	27.6	32.9	37.6	39.1	49.9	60.9	71.8	69.9	54.4	47.1	43.7	29.9	47.1
2000	27.2	33.8	36.8	44.4	54.9	61.2	72.6	72.4	57.1	45.9	21.2	19.9	45.6

Appendix 2.1.4.B. Temperature data - average temperatures - Casper WSO AP station

ID: 481570
Latitude: 42.90 degrees
Longitude: -106.46 degrees
Elevation: 5338 feet
Station period of record: 03/17/1950-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
2001	24.5	21.7	35.1	44.9	54.9	64.9	73.8	72.0	61.3	45.7	38.6	25.3	46.9
2002	23.9	26.7	25.7	42.8	50.2	65.4	73.5	66.6	58.6	38.2	33.0	28.5	44.4
2003	31.2	22.2	35.3	45.5	53.3	59.5	73.2	72.4	55.3	49.0	29.8a	29.0	46.3
2004	28.0	27.0	37.4	44.0	53.3	60.1	68.3	64.4a	58.6	-999y	-999z	-999z	49.0c
Max value	32.7	37.2	42.8	49.7	61.0	72.5	76.1	74.7	64.7	54.6	43.7	34.3	49.1
Min value	8.8	11.9	20.4	34.9	46.2	56.0	65.9	64.4	47.6	37.8	20.2	10.9	42.5
Mean	23.6	27.0	33.6	42.7	52.7	62.8	70.8	69.2	58.4	46.7	33.0	25.3	45.5
Std Dev	5.1	4.9	4.5	3.4	2.9	3.2	2.3	2.6	3.5	3.3	4.5	4.7	1.4
No. years	54.0	54.0	54.0	55.0	55.0	55.0	55.0	55.0	55.0	54.0	54.0	54.0	53.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Casper WSO AP

ID: 481570
Latitude: 42.90 degrees
Longitude: -106.46 degrees
Elevation: 5338 feet
Station period of record: 03/17/1950-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1950	-999z	-999z	-999p	53.1	58.6	75.8	80.8	82.9	68.9	67.1	45.2	41.9	63.8c
1951	30.6	41.1	41.8	50.4	65.3	68.9	85.0	83.0	70.2	55.0	44.0	31.8	55.6
1952	35.4	36.7a	37.0	60.6	66.2	81.4	86.2	85.5	79.7	65.3	39.2	36.3	59.1
1953	42.5	34.8	48.5	50.1	61.1	81.1	89.1	85.8	78.7	64.8	50.3	33.6	60.0
1954	37.8	49.3	37.8	61.1	66.9a	78.6	92.8	87.5	78.3	59.0	51.6	38.2	61.6
1955	31.7	29.5	36.5	56.5	69.1	73.0	89.9	87.8	75.0	64.4	37.1	37.1	57.3
1956	36.9	34.9	45.6	52.9	68.8	85.3	85.6	81.8a	78.0	63.8	40.2	37.4	59.3
1957	27.2	44.0	47.4	49.7	62.2	75.2	87.5	85.2	70.6	57.9	37.3	40.8	57.1
1958	38.2	43.6	39.3	51.7	73.5	78.9	81.2	87.5	75.9	65.3	45.9	39.1	60.0
1959	35.1	32.9	42.6	55.9	63.4	83.1	86.8	86.1	69.3	56.7	44.3	41.9	58.2
1960	30.9	28.6	45.2	58.8	68.7	79.6	87.4	83.4	74.8	60.9	43.3	35.9	58.1
1961	38.5	41.3	48.3	53.4	67.3	80.8	85.0	86.7	64.3	56.9	40.2	31.3	57.8
1962	25.4	36.3	41.1	61.3	67.5	75.2	82.1	83.6	74.1	64.7	50.8	41.2	58.6
1963	25.6	45.0	46.2	54.8	69.3	79.6	88.2	84.7	79.2	68.6	49.8	35.1	60.5
1964	32.3	30.8	35.6	50.8	67.6	74.5	90.0	81.2	72.8	63.4	42.8	33.0	56.2
1965	39.5	34.1	32.9	57.4	61.7	73.3	84.6	82.9	61.2	68.5	53.1	39.0	57.4
1966	32.5	34.1	49.2	52.3	74.1	78.7	92.6	83.4	78.3	59.2	48.8	35.5	59.9
1967	35.8	38.3	49.6	57.6	61.1	71.8	85.5	86.4	76.3	62.3	42.5	27.4	57.9
1968	33.7	40.3	48.2	50.7	61.7	75.2	86.1	80.3	73.6	62.6	43.6	29.6	57.1
1969	38.5	40.0	39.8	60.5	71.8	70.4	89.7	90.0	81.4	48.6	45.7	39.6	59.7
1970	34.9	45.8	39.4	48.8	67.5	78.0	88.4	90.1	70.5	55.0	45.1	35.2	58.2
1971	35.7	35.6	43.2	53.8	63.5	81.0	85.2	89.4	69.2	55.5	39.6	32.7	57.0
1972	28.9	39.4	51.4	56.4	66.1	81.4	83.4	83.6	73.8	57.2	40.0	26.5	57.3
1973	28.0	33.8	42.4	46.5	65.9	79.4	83.9	88.0	67.8	63.0	42.1	36.0	56.4
1974	28.5	36.9	48.8	54.5	66.3	81.4	88.2	80.8	70.0	62.4	44.3	32.7	57.9
1975	30.5	31.0	40.6	48.7	61.4	73.5	88.5	85.0	74.4	62.2	44.4	37.7	56.5
1976	32.4	39.3	45.0	56.7	68.3	76.6	87.5	84.4	74.2	56.9	46.9	38.4	58.9
1977	31.9	43.1	41.7	59.8	69.8	85.5	87.6	81.9	78.5	63.8	45.0	36.3	60.4
1978	27.6	31.8	49.4	57.8	61.1	79.4	86.2	82.1	76.9	63.6	38.0	23.8	56.5
1979	20.0	33.3	45.6	57.9	62.7	78.9	88.8	82.4	81.3	63.0	36.9	38.5	57.4
1980	28.4	36.7	42.1	58.7	65.6	83.1	89.9	83.5	77.2	60.6	44.7	46.0	59.7
1981	44.2	42.8	51.4	62.7	63.4	80.7	88.5	86.8	79.8	56.0	51.0	38.9	62.2
1982	32.5	38.8	49.9	55.4	64.4	74.3	87.9	90.7	70.7	57.1	43.2	31.4	58.0
1983	40.9	40.7	46.2	49.3	62.0	74.0	88.5	91.7	78.3	64.9	41.5	22.1	58.3
1984	29.6	35.9	44.1	51.8	70.3	78.0	86.9	88.4	69.3	53.7	46.1	34.8	57.4
1985	25.7	30.3	45.3	60.6	71.0	78.0	88.2	84.7	67.2	59.9	32.3	30.2	56.1
1986	40.1	39.1	56.8	58.0	66.7	83.1	85.0	86.6	68.4	57.6	42.9	35.7	60.0
1987	31.9	37.0	41.7	65.3	71.4	82.1	87.6	82.7	75.8	63.4	45.8	34.8	60.0
1988	29.9	39.2	42.8	62.7	69.6	89.8	91.6	87.9	73.6	66.5	45.2	35.5	61.2
1989	37.7	21.5	49.1	60.8	69.3	76.6	91.4	86.1	73.4	58.8	48.0	34.4	58.9
1990	40.5	39.4	48.5	57.9	66.0	82.4	85.4	85.4	80.1	61.0	47.6	26.8	60.1
1991	32.3	46.6	49.6	53.8	64.1	80.5	88.3	88.9	75.5	61.5	39.9	37.2	59.9
1992	37.8	48.1	53.5	65.2	71.7	78.7	82.0	84.5	78.9	66.5	42.0	32.0	61.8
1993	30.9	31.1	48.7	55.8	69.3	74.1	82.9	84.0	73.0	60.7	39.2	37.7	57.3
1994	39.2	36.3	54.5	61.4	78.0	86.7	88.4	90.3	79.8	57.0	41.4	41.1	62.8
1995	36.5	41.4	49.2	52.8	59.1	73.3	86.5	91.2	72.7	56.9	49.3	40.1	59.1
1996	32.5	40.9	43.6	56.8	64.0	83.0	88.9	87.6	72.4	58.3	44.7	36.0	59.1
1997	31.4	35.3	50.5	47.7	67.2	79.8	85.5	83.9	74.2	61.0	44.5	31.5	57.7
1998	34.6	40.4	43.6	56.3	70.7	69.5	89.5	87.1	80.9	56.8	48.1	35.9	59.4
1999	38.5	43.9	53.1	50.1	63.8	76.3	89.8	87.5	70.2	64.3	57.4	39.7	61.2
2000	39.4	44.0	49.8	60.0	69.7	79.8	92.9	90.6	73.3	60.0	31.1	31.1	60.1

Appendix 2.1.4.B. Temperature data - maximum temperatures - Casper WSO AP

ID: 481570
Latitude: 42.90 degrees
Longitude: -106.46 degrees
Elevation: 5338 feet
Station period of record: 03/17/1950-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
2001	34.3	31.4	47.3	58.4	71.3	83.0	91.2	89.3	78.1	61.2	50.3	35.4	60.9
2002	34.5	38.8	38.7	57.8	66.1	84.6	92.0	84.5	74.3	52.1	43.9	38.4	58.8
2003	43.9	33.3	47.6	59.6	69.5	74.6	92.4	88.5	70.7	65.4	39.8a	38.0	60.3
2004	38	36.0	52.7	57.6	69.0	76.4	85.4	81.6a	73.9	-999y	-999z	-999z	63.4c
Max value	44.2	49.3	56.8	65.3	78.0	89.8	92.9	91.7	81.4	68.6	57.4	46.0	62.8
Min value	20.0	21.5	32.9	46.5	58.6	68.9	80.8	80.3	61.2	48.6	31.1	22.1	55.6
Mean	33.9	37.7	45.6	55.9	66.8	78.5	87.5	85.8	74.2	60.7	44.0	35.3	58.8
Std Dev	5.1	5.4	5.2	4.6	4.0	4.4	3.0	3.0	4.5	4.3	5.0	4.7	1.7
No. years	54	54.0	54.0	55.0	55.0	55.0	55.0	55.0	55.0	54.0	54.0	54.0	53.0
Flags	0												

a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Casper WSO AP

ID: 481570
Latitude: 42.90 degrees
Longitude: -106.46 degrees
Elevation: 5338 feet
Station period of record: 03/17/1950-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1950	-999z	-999z	-999p	28.2	33.8	46.2	51.8	50.2	43.5	37.4	22.3	20.4	37.1c
1951	10.4	18.1	15.5	25.4	40.6	43.6	54.7	53.0	40.4	33.6	23.0	8.9	30.6
1952	16.1	16.7	16.9	33.6	41.2	51.0	53.9	54.9	46.7	33.9	16.9	20.2	33.5
1953	22.9	14.9	24.4	26.7	36.1	49.9	57.8	55.7	45.6	36.6	28.1	15.8	34.5
1954	16.4	25.2	14.5	32.6	39.7	47.5	59.3	54.7	46.7	33.3	28.8	21.4	35.0
1955	12.8	11.0	15.2	30.0	40.5	47.8	56.5	58.5	46.1	36.4	14.9	17.3	32.2
1956	17.9	13.3	20.7	28.5	43.0	51.3	55.9	51.9	44.0	35.8	19.4	19.3	33.4
1957	5.2	20.2	21.9	27.7	40.9	47.8	56.1	56.9	41.7	34.9	21.3	22.8	33.1
1958	18.3	18.9	17.5	28.8	44.5	48.4	51.4	55.0	44.2	34.1	22.0	18.9	33.5
1959	12.2	13.0	22.5	28.1	37.7	50.4	53.2	54.5	43.1	30.6	16.9	18.8	31.8
1960	13.3	8.3	21.3	29.6	38.4	47.8	55.3	51.1	46.6	34.1	24.0	15.2	32.1
1961	18.8	21.4	25.7	28.6	41.4	51.3	55.6	57.5	38.5	32.6	20.4	11.9	33.7
1962	5.3	16.9	19.4	32.0	41.4	47.8	53.4	51.8	42.7	37.9	28.9	19.5	33.1
1963	1.7	19.7	23.3	29.9	41.0	50.1	55.8	56.1	49.0	40.6	26.7	14.6	34.0
1964	13.6	11.6	14.6	28.6	40.6	47.6	58.1	50.9	39.4	30.8	19.8	13.8	30.8
1965	19.8	11.1	8.0	34.1	38.0	46.8	53.9	49.7	34.1	35.0	26.5	19.1	31.3
1966	11.1	14.5	23.2	25.5	37.4	44.9	57.1	49.7	46.0	31.1	23.3	15.1	31.6
1967	17.6	17.0	23.2	27.7	37.1	45.2	54.1	51.5	45.6	34.0	19.1	7.3	31.6
1968	12.7	20.2	25.2	26.0	34.4	45.7	52.0	49.4	39.3	33.1	20.3	8.0	30.5
1969	15.7	18.0	16.9	32.9	38.9	43.6	53.4	53.6	45.1	27.1	23.1	17.4	32.1
1970	11.6	19.5	15.8	27.5	39.1	47.2	53.9	54.4	38.9	27.3	24.7	15.2	31.3
1971	15.1	13.8	20.1	28.0	36.6	47.6	49.2	53.1	38.5	30.0	21.3	15.1	30.7
1972	6.5	17.6	24.9	29.6	38.1	48.6	48.4	52.4	39.6	31.0	21.1	8.8	30.5
1973	10.4	15.2	23.6	25.6	36.3	46.6	52.9	53.3	42.2	34.4	24.0	17.4	31.8
1974	8.8	18.2	23.5	31.6	36.5	48.4	56.9	48.0	38.7	34.6	24.2	15.9	32.1
1975	11.7	10.7	19.8	26.7	36.3	44.1	57.2	51.0	38.9	33.0	20.5	19.1	30.8
1976	13.6	21.0	19.0	31.3	38.9	44.8	58.0	52.3	44.2	30.6	21.6	18.1	32.8
1977	8.4	18.6	20.9	33.2	40.4	53.2	55.8	50.3	42.1	33.8	21.5	13.4	32.6
1978	6.5	12.8	24.9	31.4	38.0	47.8	53.0	51.5	43.4	32.2	15.7	2.5	30.0
1979	-2.4	13.8	25.2	29.4	35.8	44.6	52.8	52.9	42.9	32.6	16.0	18.9	30.2
1980	4.3	18.3	19.8	29.7	37.5	45.7	54.5	49.3	42.1	32.3	22.9	22.6	31.6
1981	18.5	16.9	24.5	33.9	39.3	47.9	55.1	51.6	44.2	32.7	26.9	15.7	33.9
1982	7.6	12.6	23.3	26.8	37.8	46.3	53.5	56.6	43.1	33.3	21.1	15.1	31.4
1983	21.5	22.3	26.3	26.7	34.7	46.8	53.8	57.8	42.3	34.4	20.8	-0.3	32.3
1984	14.1	19.0	24.6	26.4	38.7	45.0	53.9	53.9	35.7	26.5	23.4	11.0	31.0
1985	6.4	9.1	21.3	30.4	39.6	44.5	55.0	48.6	39.6	30.6	8.2	12.4	28.8
1986	23.0	17.8	28.8	30.7	35.0	51.7	53.0	52.0	42.5	34.2	21.0	16.6	33.9
1987	14.3	19.7	23.0	34.1	43.5	47.5	53.7	49.6	41.5	30.0	25.1	12.7	32.9
1988	10.6	15.6	21.2	29.2	38.7	55.3	55.4	51.6	42.3	33.0	22.7	17.1	32.7
1989	14.5	2.3	22.1	29.0	38.6	45.8	55.4	51.9	42.9	33.7	26.6	13.7	31.4
1990	17.6	16.4	22.2	30.6	35.0	46.7	54.2	51.6	46.3	31.5	26.2	4.8	31.9
1991	10.3	24.3	23.3	30.2	39.5	49.4	54.7	55.1	43.4	30.5	20.8	18.5	33.3
1992	18.3	24.4	27.8	32.7	40.6	48.7	52.5	52.3	43.3	34.8	22.6	11.8	34.1
1993	12.0	8.0	27.9	32.0	43.0	46.4	50.5	52.0	43.3	34.0	19.6	20.1	32.4
1994	18.8	14.1	28.4	32.1	44.0	50.1	54.4	56.4	45.8	34.1	22.8	22.4	35.3
1995	18.1	20.3	24.6	28.0	37.6	45.5	51.5	54.0	43.3	31.0	25.1	16.6	33.0
1996	9.2	15.7	17.9	29.7	36.6	45.5	50.9	48.1	39.2	29.8	20.3	15.9	29.9
1997	11.2	14.1	23.4	22.1	35.9	46.6	52.4	52.9	45.7	32.7	19.5	14.0	30.9
1998	16.6	21.9	19.9	29.0	38.1	42.5	55.8	52.7	48.5	32.7	28.6	13.0	33.3
1999	16.7	21.9	22.2	28.1	36.0	45.5	53.8	52.4	38.5	30.0	30.1	20.1	32.9
2000	15.1	23.6	23.8	28.7	40.1	42.5	52.4	54.1	41.0	31.8	11.2	8.7	31.1

Appendix 2.1.4.B. Temperature data - minimum temperatures - Casper WSO AP

ID: 481570
Latitude: 42.90 degrees
Longitude: -106.46 degrees
Elevation: 5338 feet
Station period of record: 03/17/1950-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
2001	14.8	12.1	23.0	31.5	38.4	46.9	56.4	54.8	44.4	30.2	27.0	15.1	32.9
2002	13.4	14.6	12.8	27.7	34.4	46.2	55.1	48.7	42.9	24.4	22.0	18.6	30.1
2003	18.5	11.1	23.1	31.4	37.1	44.3	54.1	56.2	39.9	32.5	19.4	20.0	32.3
2004	17.9	18.0	22.0	30.4	37.5	43.7	51.2	47.3a	43.2	-999y	-999z	-999z	34.6c
Max value	23.0	25.2	28.8	34.1	44.5	55.3	59.3	58.5	49.0	40.6	30.1	22.8	35.3
Min value	-2.4	2.3	8.0	22.1	33.8	42.5	48.4	47.3	34.1	24.4	8.2	-0.3	28.8
Mean	13.2	16.4	21.6	29.5	38.5	47.2	54.2	52.7	42.6	32.6	22.0	15.3	32.2
Std Dev	5.3	4.6	4.1	2.5	2.5	2.6	2.2	2.7	3.1	2.8	4.3	5.0	1.4
No. years	54	54.0	54.0	55.0	55.0	55.0	55.0	55.0	55.0	54.0	54.0	54.0	53.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - Centennial 1N station

ID: 481610
Latitude: 41.31 degrees
Longitude: -106.13 degrees
Elevation: 8140 feet
Station period of record: 02/01/1899-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1899	-999z	13.3	22.7	36.1	43.9	52.1	57.7	55.2	51.8	36.7	35.2	21.5	38.8a
1900	24.8	21.0a	31.9	33.9	47.9a	57.2	57.6	58.5	51.2a	41.9	33.9	24.8	40.4
1901	23.0	20.0	25.1	34.6	48.3	53.8	65.6	60.4	47.5	41.3a	31.8a	18.4	39.1
1902	-999f	24.0a	-999h	33.8	46.6	59.0	63.3d	58.4b	52.1b	43.7b	29.9d	26.8c	43.8b
1903	25.1a	11.3	24.1	33.6	39.6	53.1a	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1904	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1905	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1906	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1907	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1908	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1909	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1910	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l	-999l
1911	24.9	19.2	32.8	37.2	47.4	56.7	58.5	58.7a	55.1	38.3	25.9	19.0	39.5
1912	22.3	21.2	22.6	33.1	43.2	54.0	59.4	58.3	48.8	39.7	33.8	19.1	38.0
1913	17.4	16.3	25.0	38.4	49.4	55.8	59.8	61.5	50.1a	38.1a	35.0	18.5	38.8
1914	25.2	21.5	29.3	37.5	48.5	55.7	60.6	58.7	53.1	44.6	37.7	17.6	40.8
1915	20.4	26.7	26.3	42.8	43.4	51.9	59.0	56.0	50.0	44.0	31.7	23.6	39.6
1916	18	26.9	33.4	37.8	45.0	55.2	61.9	57.7	51.5	40.1	25.2	16.0	39.1
1917	15.7	21.9	19.1	31.4	38.8	52.8	62.1	57.6d	53.4	40.5	35.8	28.3a	38.1
1918	16.3	23.1	32.4	31.9	45.9	58.9a	60.7	60.2	51.3	42.7a	-999z	20.7	40.4a
1919	23.8	20.6	28.6	37.1	47.3	57.2	65.6	61.0	54.8	36.8	26.8	24.7	40.3
1920	28.0	23.4	25.4	27.7	45.9	55.1	61.4	56.7	50.0	40.4	25.8	21.6	38.4
1921	23.9	25.1	33.6	34.2	48.2	56.6	60.2	58.8	53.5	46.9	34.8	27.5	41.9
1922	17.7	18.9	26.7	34.7	46.0	58.3	61.6	63.0	55.1	42.9	28.8	25.1	39.9
1923	24.8	20.3	21.2	34.8	46.4	54.3	61.4	58.5	50.7	34.5	28.1	20.9	38.0
1924	18.0	26.7	16.5	33.5	43.6	55.8	60.7	61.0	51.0	41.8	31.7	19.9	38.3
1925	19.3	27.0	32.1	40.5	49.2	54.5	61.6	56.8	51.3	36.4	29.1c	23.8	40.1
1926	19.1	26.0	25.9	38.4	48.1	55.6	59.5	60.1	49.9	44.3	31.2	20.6	39.9
1927	24.9	22.9	25.7	36.1	46.8	54.3	60.1	56.6	51.0	42.4	34.4	16.0	39.3
1928	24.5	22.0	28.2	32.6	47.1	50.2	60.7	59.0	52.1	42.5	-999z	-999z	41.9b
1929	18.7	13.3	25.8	33.0	43.6	54.9	63.4	61.6	48.9	41.7	24.0	26.3	37.9
1930	11.5	28.7	25.1	43.2	44.5	55.7	63.2	59.8	51.6	40.8	30.7	22.0	39.7
1931	24.8	27.6	24.6	36.4	44.3	59.6	65.2	60.3	55.1	43.2	-999z	24.0	42.3a
1932	15.3a	25.9	20.8	36.7	47.2	55.4	63.6a	61.7	52.5	40.0	32.9	16.4	39.0
1933	21.6	14.1	30.0	32.8	42.9	59.7	64.7	59.3	56.0	47.6	35.2	30.8	41.2
1934	26.3	28.6	33.7	41.4	53.5	56.9	65.4	62.9a	50.5	46.6	32.0	24.2	43.5
1935	27.5	27.3	-999z	-999z	39.7	-999z	63.4	62.9	52.8	41.6	29.7	25.5	41.2c
1936	19.1	-999z	27.7	-999z	51.4	-999z	-999z	61.9	51.7	40.7	31.3a	24.7	38.6d
1937	-999s	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	32.7	27.2	-999j
1938	25.7	26.7	30.8	39.2	45.6	55.3	61.4	62.5	54.9	46.3	25.1	24.6a	41.5
1939	24.4	15.9	31.5	39.9	49.7	55.2	64.1	61.7	54.9	45.2	37.0	32.8	42.7
1940	19.8	25.8a	32.8a	38.8	49.3a	59.3	64.4	63.1b	55.5	45.3a	27.6d	26.9	42.4
1941	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1942	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1943	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1944	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1945	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1946	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1947	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	61.7	57.1a	43.1	25.5	23.0a	-999g
1949	15.8d	20.5	30.7	40.4	46.1	52.8a	60.5	61.1	52.7	39.5a	40.3a	24.5	40.4

Appendix 2.1.4.B. Temperature data - average temperatures - Centennial 1N station

ID: 481610
Latitude: 41.31 degrees
Longitude: -106.13 degrees
Elevation: 8140 feet
Station period of record: 02/01/1899-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1950	20.6	29.1	27.1b	36.3	41.1a	54.3a	57.9b	58.1a	51.0	48.8a	31.6a	29.8	40.5
1951	18.9	25.8	25.4	34.9	46.4	48.8	62.0	59.0	50.5	39.7	27.9	20.1a	38.3
1952	21.9	21.9b	21.5	37.6	45.5	57.3	60.5a	60.0	54.9	46.6a	26.0b	24.3	39.8
1953	28.5a	21.1	30.8	32.0	41.4	56.8a	63.5a	59.5	54.8	43.4	33.8	21.2	40.6
1954	26.7	31.1	24.5	-999i	47.0d	55.6a	66.0	61.2d	55.1b	44.0e	35.3c	24.5d	42.8a
1955	21.4a	17.5	23.4	36.9a	46.7d	52.8	64.0c	63.6d	54.5c	43.8a	26.7b	27.2	39.9
1956	27.0	17.9	27.9	37.8d	49.0d	-999m	60.9	-999s	56.1c	45.5b	27.7	26.9e	37.7b
1957	19.7	30.6	29.8d	33.7	43.5b	53.9	62.3	61.6	51.0	43.1	26.1c	28.1a	40.3
1958	-999f	30.0c	22.6d	33.9c	50.1	56.8d	60.6	63.7	54.0	44.7	32.2b	28.3	43.4a
1959	-999f	22.5b	26.8	35.6	44.8a	59.3	62.6	61.3	50.4	39.1e	28.2	-999m	43.1b
1960	19.9c	16.9e	-999o	38.9a	46.0	56.4a	62.4	60.6a	55.4	42.0c	31.3	24.0	41.3a
1961	25.7a	25.8a	28.6	33.7a	46.9a	57.8	61.6	62.1b	46.6	39.9b	27.9	19.4	39.7
1962	18.6b	25.6	24.7	40.1	47.7	54.5a	60.6a	60.4	52.9	45.4	35.5	27.1	41.1
1963	15.9	27.5a	27.9	37.6	49.8	56.5	64.2a	61.1	57.8a	49.7a	36.2	24.1	42.4
1964	18.6a	16.8a	22.0c	35.1	47.9	53.3	66.3	59.2	52.5	44.3	30.9	23.3b	39.2
1965	25.8	27.1	20.3a	39.1	43.9	52.7	59.8	57.3	44.4a	47.5	36.0	28.8a	40.2
1966	19.3	22.5	31.5	34.6	49.2a	52.4	63.0	58.6	52.7	43.8	39.7	25.3	41.0
1967	23.2	23.4	33.9	41.4	43.7	49.7	59.8	59.1	50.8	43.5	31.6	21.3	40.1
1968	33.6	32.1	36.0	35.1	43.9	58.6	64.9	58.6	53.7	-999z	-999z	-999z	46.3c
1969	-999z	-999z	22.5	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999y	25.4	-999j
1970	21.1	27.6	23.9	31.1	47.6	54.6	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1971	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1972	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1973	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1974	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1975	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1976	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1977	-999z	-999z	-999z	-999z	-999z	60.2	61.4	58.4	54.1a	43.1	30.6	24.9	47.5e
1978	22.2	24.5	31.8	39.0	43.8	54.5	61.7	57.5	52.1	43.0	29.5	14.2	39.5
1979	11.2	23.7	29.5	37.1	43.9	55.2	61.9	58.4	54.3	43.3	21.8	27.7	39.0
1980	20.1	26.9	26.7	33.9	45.0	56.8	62.8	58.3	53.2	40.4	31.5	34.3	40.8
1981	28.4	26.7	29.1	43.2	44.3	57.4	61.6	59.1	54.1	40.0	34.7	25.7	42.0
1982	20.5	22.2	29.9	34.2	44.5	51.9	60.2	61.5	50.2	39.4	27.7	23.4	38.8
1983	27.4	26.6	28.1	28.8	41.7	51.9	61.0	61.1	54.1	43.8	30.1a	18.2e	39.4
1984	20.4	24.1	27.8	31.4	48.8	54.6	61.6	60.3	50.9	35.6	32.0a	24.5	39.3
1985	19.2a	20.4	30.2	41.0	47.8	52.8a	60.6	59.5	46.9	40.7	26.3	24.6	39.2
1986	30.9	26.2a	35.5	39.2	45.1	58.3	59.0	60.0	48.9	40.8	28.8	23.6	41.4
1987	22.2	25.2	28.5	41.8	48.7	56.4	61.1	57.7	53.6	44.4	30.7	20.8	40.9
1988	19.1	24.6	26.2	39.7	47.7	60.5	63.2	61.4	50.9	46.4	28.3	21.6	40.8
1989	22.8	17.9	33.5	40.4	48.3	54.0	63.7	58.6	52.1	42.0	32.5	21.3	40.6
1990	25.3	23.7	30.9	39.9	45.2	58.1	59.0	59.6	55.4	41.8	33.0	16.7	40.7
1991	20.4	29.3	29.7	36.0	47.5	55.9	60.5	60.2	52.7	42.9	25.6	25.5	40.5
1992	24.8	28.4	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	23.0	19.7	-999h
1993	22.3	20.6	-999i	35.0a	47.5	52.2	57.2	57.1	49.8	38.9	24.3	23.8	39.0a
1994	23.7	22.8	32.7	38.1	50.9	58.8	61.8	62.3	54.1	41.5	27.4	27.0	41.8
1995	23.5	28.0	-999l	34.8	41.2	52.3	58.6	-999k	50.7	-999g	33.1a	26.6	38.8c
1996	18.5a	24.8	27.6	37.0	46.8	56.8	62.0	60.0	48.2	40.4	30.5e	22.0	39.5
1997	19.9	20.5	31.7	31.5	46.4	56.9	-999i	-999j	54.0	40.6	27.5	22.3a	35.1b
1998	-999j	-999z	25.9	-999z	-999n	49.3	63.0	-999z	56.5	-999z	-999k	-999z	-999h
1999	25.0e	26.7d	31.8d	-999g	43.3a	53.6e	61.6	59.0a	48.3a	44.9e	38.4	24.8c	41.6a
2000	24.8	28.7a	30.6	39.7c	-999f	54.7	64.2	63.9a	52.9	41.2a	21.1	20.9a	40.2a

Appendix 2.1.4.B. Temperature data - average temperatures - Centennial 1N station

ID: 481610
Latitude: 41.31 degrees
Longitude: -106.13 degrees
Elevation: 8140 feet
Station period of record: 02/01/1899-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
2001	21.6b	22.6	29.2a	37.9	48.3a	56.7	64.4b	63.6a	56.0	42.4	33.6a	22.3c	41.5
2002	19.6	20.7	24.5	40.6	45.5	59.7	66.3	60.7	53.4	37.8a	27.5	25.5	40.1
2003	30.7	18.7	29.9	39.2	46.9	-999f	65.1	62.3	-999g	46.2	-999h	-999l	42.4d
2004	24.2	22.8	36.0	40.3c	46.0	52.2d	59.5d	-999z	-999z	-999z	-999z	-999z	40.1e
Max value	33.6	32.1	36.0	43.2	53.5	60.5	66.3	63.9	57.8	49.7	40.3	34.3	43.5
Min value	11.2	11.3	16.5	27.7	38.8	48.8	57.2	55.2	44.4	34.5	21.1	14.2	37.9
Mean	22.1	23.4	27.9	36.6	46.1	55.3	61.8	60.0	52.3	42.3	30.6	23.6	40.1
Std Dev	4.2	4.4	4.2	3.4	2.8	2.6	2.2	2.0	2.6	3.1	4.2	3.9	1.3
No. years	77.0	80.0	77.0	76.0	79.0	78.0	78.0	76.0	79.0	77.0	76.0	78.0	58.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Centennial 1N station

ID: 481610
Latitude: 41.31 degrees
Longitude: -106.13 degrees
Elevation: 8140 feet
Station period of record: 02/01/1899-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1899	-999z	24.3	33.7	47.7	58.5	67.1	72.5	69.7	67.7	49.8	47.9	33.1	52.0a
1900	36.9	32.6a	44.5	47.6	65.4a	74.3	73.4	74.9	65.4	55.8	44.2	34.4	54.1
1901	32.1	31.0	35.2	48.0	61.9	67.6	79.8	72.9	63.9	55.0a	45.6	29.5	51.9
1902	34.9a	35.4a	-999g	46.7	64.0	78.4	82.5d	79.1a	70.8b	60.2a	46.1d	40.0a	58.0a
1903	37.3	23.8	36.6	43.0	48.5	66.2a	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1904	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1905	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1906	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1907	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1908	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1909	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1910	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l	-999l
1911	32.3	28.6	42.2	48.7	62.4	70.8	72.4	74.1a	69.4	50.5	35.0	27.7	51.2
1912	29.4	29.7	34.2	43.0	55.6	67.5	72.5	71.5	61.0	51.1	43.5	28.5	49.0
1913	26.6	26.2	34.4	50.5	63.4	69.7	73.4	75.5	63.0a	48.6	43.9	28.4	50.3
1914	33.6	30.3	40.4	47.8	62.4	69.0	73.5	71.3	67.5	56.3	49.4	27.3	52.4
1915	29.3	36.9	36.8	53.9	55.8	65.9	73.4	69.0	62.5	55.6	39.9	32.2	50.9
1916	26.5	36.8	42.6	49.4	59.6	71.2	75.7	70.4	66.6	50.9	36.4	24.0	50.8
1917	23.8	30.5	28.7	41.5	49.6	68.1	76.3	72.0d	68.1	54.1	45.9	34.0	49.4
1918	25.5	33.6	42.7	41.8	59.5	73.7	74.9	75.9	65.2	54.7	-999z	28.8	52.4a
1919	33.8	29.3	38.4	48.8	61.8	74.2	81.3	76.0	68.6	47.2	37.1	34.3	52.6
1920	38.0	34.5	35.7	38.0	58.4	70.0	76.6	69.3	63.4	51.7	37.1	30.5	50.3
1921	32.9	34.8	43.0	45.0	61.5	71.2	74.5	71.8	69.0	60.9	44.4	36.7	53.8
1922	27.7	28.1	37.8	46.1	58.9	74.7	76.4	77.2	70.1	56.7	38.2	32.1	52.0
1923	33.1	32.1	32.7	46.3	59.6	69.2	74.7	71.8	63.9	45.7	37.7	30.6	49.8
1924	26.6	37.4	26.1	46.4	56.4	71.3	75.8	76.7	64.7	53.1	41.0	29.2	50.4
1925	27.5	35.4	42.1	53.1	62.6	67.4	75.0	68.6	62.9	48.1	38.3c	33.8	51.2
1926	29.3	34.6	36.1	50.4	60.5	69.6	72.9	74.9	63.8	56.4	39.2	29.8	51.4
1927	34.4	32.4	36.1	46.7	61.4	67.9	74.7	69.6	63.7	55.0	42.5	25.6	50.8
1928	33.3	32.6	38.9	44.0	60.4	63.4	76.3	74.5	67.4	54.0	-999z	-999z	54.5b
1929	28.3	23.5	35.6	42.7	56.7	70.2	78.2	74.7	60.5	53.8	34.6	36.1	49.6
1930	23.5	36.8	36.5	55.7	57.5	71.0	77.4	71.8	66.0	52.5	42.0	33.1	52.0
1931	34.5	37.4	36.3	48.4	57.5	74.6	81.0	75.4	69.0	54.3	-999z	34.3	54.8a
1932	25.3a	35.1	31.3	47.9	61.6	70.8	79.2	76.9	68.2	53.0	42.1	26.4	51.5
1933	29.5	24.6	39.7	44.7	56.2	74.4	79.9	74.1	69.7	61.2	46.4	38.2	53.2
1934	35.6	39.4	43.5	54.2	67.6	73.3	81.0	78.5	65.4	60.6	42.9	33.3	56.3
1935	37.1	38.6	-999z	-999z	50.4	-999z	78.0	77.6	67.1	54.1	38.7	35.2	53.0c
1936	28.3	-999z	37.4	-999z	67.0	-999z	-999z	75.5	66.6	52.9	42.4	31.8	50.2d
1937	-999s	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	43.0	36.0	-999j
1938	35.3	36.7	40.0	51.6	57.2	69.0	76.6	76.4	68.1	60.3	35.3	33.7a	53.3
1939	32.8	27.1	42.6	52.6	63.7	69.7	80.3	77.0	69.2	56.8	51.5	42.3	55.5
1940	30.3	35.0a	43.7	50.6	63.1a	75.3	79.5	78.3a	69.4	59.1a	39.2c	37.6	55.1
1941	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1942	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1943	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1944	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1945	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1946	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1947	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	76.9	71.9a	56.5	33.4	31.5	-999g
1949	27.7d	29.3	39.9	52.7	58.0	64.1a	73.0	76.3	67.6	51.0a	50.5	32.9	51.9

Appendix 2.1.4.B. Temperature data - maximum temperatures - Centennial 1N station

ID: 481610
Latitude: 41.31 degrees
Longitude: -106.13 degrees
Elevation: 8140 feet
Station period of record: 02/01/1899-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1950	29.8	38.1	37.4b	47.9	53.5a	69.8a	72.0b	73.2a	64.5	62.7a	40.4	38.2	52.3
1951	27.7	36.2	35.7	45.5	58.5	62.1	77.5	73.4	66.8	51.3	39.3	28.8a	50.2
1952	31.4	32.3a	32.5	50.5	58.1	73.3	76.3a	75.3	71.2	62.6a	38.6a	33.7	53.0
1953	36.4a	32.3	41.3	43.9	53.6	72.2a	78.1a	74.1	70.6	57.6	44.5	31.6	53.0
1954	36.1	42.2	36.0	52.9a	60.5c	70.6a	81.3	76.5d	69.1a	57.1	47.3b	35.4d	55.4
1955	30.6a	28.8	35.1	50.4a	60.7c	66.3	80.2a	76.6d	70.0b	56.7a	36.5a	34.8	52.2
1956	36.4	28.5	39.2	50.3c	62.1d	-999m	76.3	-999s	72.8c	59.4a	38.7	36.0e	50.0b
1957	29.2	39.5	41.3c	45.2	54.5b	67.2	76.8	76.3	66.8	55.5	36.3c	37.8a	52.2
1958	36.1e	39.2b	34.8d	45.4c	64.1	72.9d	75.7	78.3	68.8	59.2	44.7b	37.4	54.7
1959	35.2b	34.0b	37.5	47.4	57.5a	73.6	78.5	76.6	63.4	52.0d	41.9	-999m	54.3a
1960	30.8c	29.2e	-999n	52.4a	59.9	71.1a	77.9	76.8a	70.4	55.0c	42.2	35.2	54.6a
1961	38.0a	37.1a	39.8	45.3a	59.5a	72.8	76.1	77.0b	58.3	53.3a	39.2	28.3	52.1
1962	31.2b	34.4	36.5	53.2	60.4	69.0a	75.3a	75.8	68.0	59.7	46.8	38.0	54.0
1963	27.6	37.5a	39.2	49.4	63.8	71.4	79.7a	73.9	72.0a	64.0a	47.7	34.7	55.1
1964	29.2a	27.6a	33.3b	46.0	60.7	67.2	82.2	73.3	67.2	59.2	41.7	31.9a	51.6
1965	35.1	36.9	33.7	52.1	57.7	66.6	76.6	73.0	58.0	62.4	47.4	39.1	53.2
1966	28.3	32.0	41.1	44.9	62.4a	69.6	80.9	77.0	71.0	57.1	50.0	35.2	54.1
1967	28.8	30.2	43.6	53.3	54.9	61.8	77.2	77.6	63.7	57.5	43.8	30.0	51.9
1968	40.3	40.7	44.7	42.8	57.2	74.5	79.7	76.6	71.3	-999z	-999z	-999z	58.7c
1969	-999z	-999z	35.3	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999y	37.3	-999j
1970	29.7	40.0	36.8	45.5	62.5	69.7	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1971	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1972	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1973	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1974	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1975	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1976	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1977	-999z	-999z	-999z	-999z	-999z	75.1	75.9	72.2	69.4	57.5	41.0	32.5	60.5e
1978	30.9	33.4	43.2	50.8	56.0	69.6	77.4	73.3	67.8	57.2	40.4	24.0	52.0
1979	22.7	33.0	40.0	48.7	56.2	68.9	76.8	71.8	70.6	57.0	33.6	38.0	51.5
1980	30.2	37.2	37.6	45.7	57.6	73.0	77.5	73.8	67.4	54.9	42.8	44.2	53.5
1981	40.3	37.6	40.2	56.4	55.6	72.2	76.0	73.4	69.1	51.5	45.9	33.7	54.3
1982	30.0	32.2	39.7	46.2	56.6	65.6	73.7	75.1	62.8	51.5	39.2	33.4	50.5
1983	37.2	37.3	37.9	40.2	53.9	66.0	75.1	73.1	70.6	58.6	41.8a	27.9d	51.6
1984	30.9	35.8	37.7	43.9	63.3	69.0	76.9	74.0	66.2	47.2	42.6a	34.7	51.8
1985	30.6a	30.8	41.9	54.2	62.9	67.3	74.0	76.8	61.8	54.1	35.1	33.0	51.9
1986	41.0	34.4	47.4	51.7	59.2	73.6	73.8	75.4	62.4	53.5	38.9	36.8	54.0
1987	33.4	36.7	40.5	56.7	62.2	71.3	76.9	73.0	69.5	59.6	42.6	30.5	54.4
1988	28.6	36.8	37.9	54.3	61.6	75.8	79.9	78.8	66.7	61.3	38.1	33.5	54.4
1989	33.9	30.3	45.8	54.3	63.6	70.0	79.9	74.9	69.0	56.8	42.5	32.5	54.5
1990	34.5	34.6	43.1	53.0	60.3	74.5	73.9	75.8	70.4	55.5	44.7	28.5	54.1
1991	31.0	41.7	41.4	48.9	62.5	71.2	75.7	74.8	67.8	58.1	36.0	37.0	53.8
1992	38.0	39.0	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	32.7	28.9	-999h
1993	32.5	30.8	40.8	47.9a	61.8	65.7	72.8	71.7	64.3	51.5	35.0	34.8	50.8
1994	32.5	32.8	44.8	50.5	65.4	73.9	76.7	77.0	69.4	54.5	39.5	38.5	54.6
1995	33.7	38.1	-999j	46.9	52.0	66.4	72.4	-999j	63.6	-999g	42.7	35.5	50.2c
1996	29.3	35.4	39.7	49.5	60.0	72.1	76.1	74.3	63.3	54.7	40.9e	29.6	52.1
1997	29.8	31.8	43.7	44.5	61.0	71.1	-999i	-999j	66.7	54.7	39.2	33.3	47.6b
1998	-999i	-999z	39.7	-999z	-999n	63.3	76.0	-999z	70.1	-999z	-999k	-999z	-999h
1999	35.0e	38.4d	46.1d	-999g	56.5a	68.4e	74.8	71.8a	63.1a	62.0e	53.0	35.7b	55.0a
2000	34.3	39.6a	41.7	53.3c	-999f	70.3	78.7	78.5a	68.9	55.4a	33.3	33.0a	53.4a

Appendix 2.1.4.B. Temperature data - maximum temperatures - Centennial 1N station

ID: 481610
Latitude: 41.31 degrees
Longitude: -106.13 degrees
Elevation: 8140 feet
Station period of record: 02/01/1899-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
2001	34.6a	33.8	39.8a	50.2	62.5a	72.2	78.3b	77.7a	70.4	55.9	47.7a	33.8c	54.7
2002	31.7	34.5	35.5	54.5	62.6	76.0	83.3	76.5	67.5	51.9a	39.7	37.6	54.3
2003	40.5	30.5	40.4	53.3	62.5	-999f	81.4	75.9	-999g	62.1	-999h	-999l	55.8d
2004	34.9	35.5	50.1	53.9c	62.1	67.5d	74.7d	-999z	-999z	-999z	-999z	-999z	54.1e
Max value	41.0	42.2	50.1	56.7	67.6	78.4	83.3	79.1	72.8	64.0	53.0	44.2	56.3
Min value	22.7	23.5	26.1	38.0	48.5	61.8	72.0	68.6	58.0	45.7	32.7	24.0	49.0
Mean	32.0	33.8	38.9	48.7	59.6	70.2	76.8	74.7	67.0	55.5	41.5	33.3	52.5
Std Dev	4.1	4.3	4.2	4.1	3.8	3.5	2.8	2.5	3.3	4.0	4.6	4.0	1.7
No. years	80.0	80.0	78.0	77.0	79.0	78.0	78.0	76.0	79.0	77.0	76.0	78.0	61.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Centennial 1N station

ID: 481610
Latitude: 41.31 degrees
Longitude: -106.13 degrees
Elevation: 8140 feet
Station period of record: 02/01/1899-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1899	-999z	2.3	11.7	24.6	29.3	37.1	42.8	40.7	35.8	23.7	22.4	10.0	25.5a
1900	12.7	8.6	19.3	20.2	30.7	40.2	41.9	42.1	36.1a	28.0	23.5	15.1	26.5
1901	13.9	9.0	14.9	21.2	34.8	40.0	51.4	47.9	31.0	27.4	18.2a	7.4	26.4
1902	5.4e	12.4	-999h	20.8	29.2	39.6	43.7b	37.7a	33.1	27.3a	13.7	13.5b	25.1a
1903	12.7a	-1.1	11.6	24.2	30.8	39.8	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1904	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1905	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1906	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1907	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1908	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1909	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1910	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l	-999l
1911	17.5	9.7	23.4	25.7	32.4	42.5	44.5	42.9	40.7	26.1	16.9	10.3	27.7
1912	15.2	12.7	11.0	23.2	30.8	40.4	46.2	45.1	36.5	28.4	24.1	9.7	26.9
1913	8.1	6.4	15.5	26.3	35.4	41.8	46.3	47.6	36.7	27.4a	26.2	8.7	27.2
1914	16.8	12.7	18.2	27.2	34.6	42.3	47.8	46.0	38.6	32.8	26.0	7.8	29.2
1915	11.5	16.4	15.9	31.6	31.0	37.8	44.5	42.9	37.6	32.4	23.6	15.0	28.4
1916	9.5	17.0	24.3	26.2	30.4	39.3	48.1	45.1	36.4	29.3	14.0	7.9	27.3
1917	7.7	13.4	9.5	21.2	27.9	37.4	48.0	43.1d	38.7	26.9	25.7	22.8a	26.9
1918	7.1	12.6	22.1	22.0	32.4	44.6a	46.4	44.5	37.4	31.1a	-999z	12.7	28.4a
1919	13.8	11.9	18.9	25.4	32.8	40.1	49.9	46.0	40.9	26.4	16.6	15.0	28.1
1920	18.1	12.3	15.1	17.3	33.3	40.3	46.1	44.1	36.6	29.1	14.5	12.7	26.6
1921	14.9	15.4	24.1	23.4	35.0	42.1	45.8	45.8	38.0	32.9	25.3	18.3	30.1
1922	7.7	9.7	15.6	23.3	33.2	41.8	46.9	48.8	40.0	29.0	19.3	18.2	27.8
1923	16.5	8.5	9.7	23.3	33.2	39.5	48.0	45.1	37.4	23.3	18.5	11.1	26.2
1924	9.3	16.1	6.8	20.5	30.8	40.2	45.5	45.4	37.4	30.6	22.3	10.7	26.3
1925	11.1	18.6	22.1	27.8	35.7	41.5	48.3	45.1	39.7	24.6	20.5	13.7	29.1
1926	9.0	17.5	15.7	26.5	35.6	41.7	46.2	45.4	36.0	32.2	23.2	11.4	28.4
1927	15.4	13.4	15.3	25.4	32.2	40.8	45.5	43.6	38.2	29.8	26.3	6.4	27.7
1928	15.8	11.4	17.5	21.1	33.8	36.9	45.1	43.5	36.8	30.9	-999z	-999z	29.3b
1929	9.2	3.0	15.9	23.2	30.5	39.5	48.6	48.5	37.4	29.5	13.5	16.5	26.3
1930	-0.4	20.7	13.6	30.7	31.5	40.4	49.0	47.7	37.1	29.2	19.3	11.0	27.5
1931	15.1	17.9	13.0	24.4	31.2	44.6	49.3	45.2	41.1	32.2	-999z	13.6	29.8a
1932	5.5	16.7	10.4	25.5	32.9	40.1	47.9a	46.5	36.7	26.9	23.7	6.5	26.6
1933	13.7	3.6	20.2	20.9	29.5	45.0	49.5	44.6	42.3	34.0	24.0	23.4	29.2
1934	17.0	17.9	24.0	28.7	39.3	40.5	49.9	47.4a	35.7	32.6	21.0	15.0	30.7
1935	18.0	16.0	-999z	-999z	29.0	-999z	48.8	48.2	38.5	29.0	20.7	15.9	29.3c
1936	10.0	-999z	18.0	-999z	35.8	-999z	-999z	48.4	36.7	28.5	20.1a	17.5	26.9d
1937	-999s	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	22.4	18.3	-999j
1938	16.2	16.7	21.6	26.9	34.1	41.6	46.1	48.5	41.8	32.4	14.9	15.5	29.7
1939	16.0	4.8	20.4	27.2	35.7	40.6	48.0	46.4	40.5	33.6	22.5	23.3	29.9
1940	9.3	17.1	21.9a	27.0	35.5a	43.2	49.3	48.3a	41.6	31.6	16.3b	16.1	29.8
1941	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1942	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1943	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1944	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1945	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1946	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1947	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	46.5	42.3	29.8	17.6	14.3a	-999g
1949	3.9d	11.6	21.5	28.0	34.2	41.4a	47.9	45.9	37.8	28.0a	30.6a	16.0	28.9

Appendix 2.1.4.B. Temperature data - minimum temperatures - Centennial 1N station

ID: 481610
Latitude: 41.31 degrees
Longitude: -106.13 degrees
Elevation: 8140 feet
Station period of record: 02/01/1899-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1950	11.4	20.0	16.9a	24.8	28.7a	38.7a	43.8b	43.0a	37.5	34.8a	23.2a	21.3	28.7
1951	10.2	15.4	15.0	24.2	34.2	35.5	46.5	44.5	34.2	28.1	16.5	11.3a	26.3
1952	12.5	11.7a	10.4	24.7	32.8	41.2	44.7a	44.7	38.5	30.6a	12.2a	14.8	26.6
1953	20.7a	10.0	20.3	20.2	29.3	41.5a	48.8	44.8	38.9	29.3	23.0	10.8	28.1
1954	17.3	20.0	13.0	-999i	33.5c	40.6a	50.6	45.9d	40.8b	31.6e	23.6b	13.5d	30.0a
1955	12.3a	6.2	11.7	23.4a	33.0c	39.4	47.8c	50.6d	39.3b	31.0a	17.4b	19.7	27.6
1956	17.6	7.3	16.5	25.0c	36.0d	-999m	45.5	43.9a	39.5a	31.9a	16.8	17.8e	27.1a
1957	10.1	21.6	18.7d	22.2	32.6b	40.7	47.7	46.9	35.2	30.8	15.9c	18.4a	28.4
1958	-999f	20.9b	10.5d	22.4c	36.2	40.8d	45.5	49.2	39.2	30.3	19.7b	19.3	30.3a
1959	11.0e	11.1b	16.0	23.7	32.0a	44.9	46.7	46.0	37.4	26.3d	14.5	-999m	28.1a
1960	8.5b	3.3d	-999n	25.5a	32.2	41.7a	47.0	44.3a	40.3	29.0c	20.4	12.9	27.7a
1961	13.5a	14.4a	17.3	22.2a	34.3a	42.8	47.2	47.3b	34.9	27.2a	16.5	10.5	27.3
1962	6.0b	16.8	12.8	27.0	35.1	40.0a	45.9a	45.0	37.8	31.2	24.3	16.1	28.2
1963	4.2	17.5a	16.5	25.8	35.8	41.6	48.7a	48.4	43.7a	35.3a	24.7	13.6	29.6
1964	7.9a	6.0a	10.4b	24.2	35.2	39.3	50.3	45.1	37.9	29.5	20.1	14.4b	26.7
1965	16.5	17.3	7.1a	26.2	30.1	38.7	43.1	41.7	30.8a	32.7	24.6	18.4a	27.3
1966	10.4	13.0	21.8	24.3	35.9a	35.2	45.1	40.1	34.4	30.5	29.4	15.3	27.9
1967	17.6	16.5	24.1	29.5	32.5	37.6	42.4	40.6	37.8	29.5	19.4	12.6	28.3
1968	26.9	23.5	27.3	27.3	30.6	42.6	50.0	40.6	36.2	-999z	-999z	-999z	33.9c
1969	-999z	-999z	9.6	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999y	13.5	-999j
1970	12.6	15.2	11.0	16.7	32.8	39.5	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1971	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1972	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1973	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1974	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1975	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1976	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1977	-999z	-999z	-999z	-999z	-999z	45.3	46.9	44.6	38.7a	28.8	20.3	17.3	34.5e
1978	13.5	15.7	20.5	27.1	31.5	39.3	46.0	41.7	36.3	28.8	18.7	4.4	27.0
1979	-0.3	14.4	19.1	25.5	31.5	41.5	46.9	45.0	38.1	29.5	10.1	17.3	26.6
1980	10.0	16.6	15.9	22.1	32.3	40.7	48.1	42.7	38.9	25.8	20.2	24.5	28.2
1981	16.5	15.8	18.1	29.9	33.1	42.6	47.2	44.7	39.0	28.5	23.5	17.7	29.7
1982	11.1	12.1	20.2	22.3	32.5	38.2	46.7	48.0	37.6	27.4	16.1	13.4	27.1
1983	17.5	16.0	18.4	17.4	29.5	37.8	47.0	49.0	37.7	29.0	18.2	6.1a	27.0
1984	9.9	12.3	17.8	18.9	34.3	40.2	46.3	46.7	35.5	23.9	21.1	14.4	26.8
1985	7.1	9.9	18.5	27.7	32.7	38.6a	47.3	42.1	32.1	27.3	17.5	16.3	26.4
1986	20.9	18.1a	23.6	26.7	31.0	42.9	44.2	44.5	35.4	28.1	18.6	10.4	28.7
1987	11.1	13.6	16.6	26.9	35.3	41.4	45.3	42.4	37.7	29.2	18.8	11.1	27.4
1988	9.5	12.5	14.6	25.1	33.7	45.3	46.4	43.9	35.0	31.6	18.5	9.7	27.2
1989	11.7	5.6	21.3	26.5	33.0	37.9	47.5	42.3	35.2	27.2	22.5	10.1	26.7
1990	16.2	12.7	18.7	26.7	30.2	41.6	44.1	43.4	40.4	28.2	21.3	4.9	27.4
1991	9.8	16.9	18.1	23.1	32.4	40.5	45.4	45.5	37.5	27.7	15.2	14.0	27.2
1992	11.6	17.8	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	13.3	10.5	-999h
1993	12.2	10.4	-999i	22.1	33.2	38.7	41.5	42.5	35.3	26.3	13.7	12.7	26.2a
1994	15.0	12.9	20.6	25.7	36.4	43.6	46.9	47.7	38.7	28.5	15.2	15.6	28.9
1995	13.2	17.9	-999l	22.7	30.4	38.1	44.8	-999k	37.7	-999f	23.8a	17.8	27.4c
1996	8.2a	14.1	15.5	24.5	33.6	41.6	47.8	45.7	33.1	26.2	20.2e	14.4	27.1
1997	10.0	9.3	19.7	18.6	31.7	42.8	-999i	-999j	41.3	26.5	15.7	11.2a	22.7b
1998	-999j	-999z	12.0	-999z	-999n	35.3	50.1	-999z	42.9	-999z	-999j	-999z	-999h
1999	14.7c	15.0d	17.4d	21.2c	30.1a	38.8c	48.4	46.2a	33.6a	27.1d	23.7	13.5c	27.5
2000	15.3	17.1	19.4	25.7b	-999f	39.1	49.6	49.4a	36.9	27.0a	8.9	8.9a	27.0a

Appendix 2.1.4.B. Temperature data - minimum temperatures - Centennial 1N station

ID: 481610
Latitude: 41.31 degrees
Longitude: -106.13 degrees
Elevation: 8140 feet
Station period of record: 02/01/1899-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
2001	9.0b	11.3	18.6a	25.6	33.6	41.2	50.6b	49.4a	41.6	28.8	19.6a	10.9c	28.3
2002	7.6	6.8	13.5	26.6	28.3	43.5	49.3	44.8	39.3	23.7a	15.3	13.4	26.0
2003	20.9	6.9	19.5	25.1	31.3	-999f	48.9	48.7	-999g	30.3	-999h	-999l	29.0d
2004	13.4	10.1	21.9	26.7c	29.9	37.0d	44.3d	-999z	-999z	-999z	-999z	-999z	26.2e
Max value	26.9	23.5	27.3	31.6	39.3	45.3	51.4	50.6	43.7	35.3	30.6	24.5	30.7
Min value	-0.4	-1.1	6.8	16.7	27.9	35.2	41.5	37.7	30.8	23.3	8.9	4.4	26.0
Mean	12.2	13.0	16.9	24.4	32.6	40.5	46.9	45.2	37.7	29.1	19.7	13.8	27.8
Std Dev	4.7	5.0	4.5	3.0	2.3	2.3	2.2	2.6	2.6	2.6	4.4	4.3	1.2
No. years	79.0	80.0	77.0	77.0	79.0	78.0	78.0	77.0	79.0	77.0	76.0	78.0	59.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - Cheyenne WSFO AP station

ID: 481675
Latitude: 41.16 degrees
Longitude: -104.81 degrees
Elevation: 6115 feet
Station period of record: 01/01/1915-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1915	25.8	31.2	27.7	46.0	46.4	54.6	62.3	60.9	54.6	48.0	37.0	28.8	43.6
1916	17.6	31.8	38.6	40.1	48.6	58.5	69.1	63.8	55.8	42.9	31.2	21.0	43.2
1917	21.8	27.3	25.6	36.4	42.9	58.2	67.4	61.4	58.6	43.3	40.8	30.4	42.8
1918	19.8	29.6a	40.9	34.7	50.7	65.1	65.7	65.0	53.1	48.2	30.9	26.7	44.2
1919	31.8	25.5	33.7	41.7	51.2	62.6	69.7	67.9	59.0	40.5	30.6	28.0	45.2
1920	33.5	26.8	31.5	31.5	49.4	59.4	65.9	62.8	57.1	46.0	31.8	27.9	43.6
1921	28.2	30.1	37.6	38.8	50.3	61.7	66.9	65.6	58.5	50.9	38.6	30.3	46.5
1922	21.1	23.9	33.8	38.2	49.8	63.9	65.5	69.0	60.8	47.5	31.5	29.5	44.5
1923	32.2	23.9	28.1	39.7	50.3	59.4	67.5	63.7	55.8	38.7	37.4	27.4	43.7
1924	24.7	31.5	21.6	39.4	45.8	60.2	65.8	66.4	54.6	47.8	38.5	21.3	43.1
1925	26.6	34.6	37.3	45.2	52.5	61.2	68.0	64.0	58.0	37.8	35.0	27.8	45.7
1926	25.9	33.2	31.7	42.1	53.0	60.4	65.2	67.0	54.2	47.0	37.9	26.6	45.3
1927	29.8	28.9	30.8	40.4	51.0	58.9	64.9	61.9	56.1	48.7a	39.4	21.4	44.4
1928	31.8	27.3	34.1	38.3	52.7	54.4	65.7	65.3	57.1	45.0	34.4	26.8	44.4
1929	22.1	17.3	32.6	39.6	48.0	60.5	68.5	68.4	53.0	46.4	26.7	33.3	43.0
1930	13.0	34.5	29.6	49.3	46.8	61.2	68.9	66.2	56.8	44.5	36.5a	28.9	44.7
1931	30.9	32.2	29.8	40.9	48.6	65.7	70.0	66.7	61.8	47.5	32.8	32.6	46.6
1932	21.4	32.2	25.8	43.1	52.3	60.3	70.0	67.4	58.3	42.9	38.9	18.8	44.3
1933	29.3	21.6	35.4	37.8	48.3	66.5	70.1	65.0	60.8	51.0	40.2	39.0	47.1
1934	34.0	31.6	37.8	44.5	59.9a	63.6	72.7	67.8	53.4	51.6	39.3	31.0	48.9
1935	33.3	32.7	35.1	38.0	44.7	59.8	69.8	67.9	57.8	44.7	33.0	29.4	45.5
1936	25.5	20.2	33.2	42.9	55.8	65.2	72.4	68.5	58.3	44.5	35.4	30.5	46.0
1937	12.7	26.5	30.5	41.0	52.9	59.6	69.4	71.1	60.4	48.7	34.0	26.6	44.4
1938	27.4	30.1	36.6	42.5	49.9	61.8	68.0	68.7	60.0	49.7	31.4	27.4	46.1
1939	28.2	19.1	34.5	42.7	54.5	61.2	71.7	66.2a	60.2	48.8	37.9	35.1	46.7
1940	18.8	29.1	38.0	42.0	53.9	64.8	70.1	67.2	60.1	50.2	32.3	31.5	46.5
1941	30.2	32.1	31.6	40.6	54.3	59.3	67.8	66.5	54.6	44.8	38.2	29.9	45.8
1942	24.6	21.4	32.0	45.0	48.7	58.6	68.9	65.6	55.3	46.3	36.1	31.7	44.5
1943	27.7	33.7	28.4	48.2	47.2	60.2	69.8	69.2	57.5	47.3	36.8	29.7	46.3
1944	27.3	27.0	28.0	37.8	52.3	59.5	66.4	68.1	57.3	49.6	35.8	27.3	44.7
1945	28.4	27.7	34.6	34.8	50.4	55.2	68.1	66.8	54.3	49.3	38.0	25.8	44.5
1946	28.0	30.0	38.1	49.0	45.9	61.6	68.9	65.8	56.7	43.0	32.7	34.5	46.2
1947	26.9	23.9	30.9	40.0	49.7	56.4	68.5	68.6	60.7	51.5	28.9	29.7	44.6
1948	24.5	23.9	27.7	44.8	52.7	60.6	67.8	67.5	61.7	46.3	31.3	26.4	44.6
1949	14.1	25.4	32.2	44.6	51.9	59.7	68.0	67.0	57.8	43.6	45.2	27.5	44.8
1950	23.9	33.7	31.3	40.3	46.2	60.2	63.5	64.1	54.9	52.7	35.1	33.5	45.0
1951	22.5	30.8	29.1	37.3a	51.2	54.6	66.8	65.0	54.6	43.8	33.4	24.4	42.8
1952	28.9a	28.7	27.9	42.7	51.6	65.6	66.8	67.4	60.7	48.4	28.6	29.9	45.6
1953	35.6	27.6	37.1	36.6	47.7	63.3	69.0	66.6	60.8	49.4	38.9	27.7	46.7
1954	32.3	38.8	27.7	46.4	50.6	62.2	71.9	68.2	61.4	47.5	40.2	32.5	48.3
1955	24.9	23.1	29.3a	42.8	53.1	58.0	70.6	69.1	58.7	49.5	30.3	31.1	45.0
1956	28.9	22.6	33.0	39.5	54.7	67.2	67.5	64.7	61.0	50.4	31.8	32.6	46.2
1957	20.7	34.8	33.2	36.9	48.0	60.4	69.0	67.4	55.3	46.9	29.8	35.0	44.8
1958	30.1a	32.9	25.5	38.9	56.9	62.8	64.5	68.7	58.6	49.6	36.2	30.8	46.3
1959	26.3	26.0	31.1	39.3	50.5	65.3	68.2	69.0	55.7	42.9	33.1	33.1	45.0
1960	25.6	19.9	33.4	46.7	55.7	64.4	70.7	68.7	61.2	48.7	35.6	26.8	46.5
1961	29	31.8	31.5	40.7	52.8	64.8	69.1	68.0	51.4	44.7	32.3	23.4	45.0
1962	19.0	27.1	29.0	45.6	55.1	59.9	65.6	67.2	58.9	51.0	39.8	31.5	45.8
1963	16.7	33.0	31.8	43.7	55.8	64.0	72.6	68.3	63.1	54.4	40.0	26.9	47.5
1964	26.0	22.3	27.3	40.8	54.6	60.5	70.9	64.3	56.9	48.7	35.3	29.5	44.8
1965	32	25.9	22.1	45.7	50.7	59.3	68.1	64.7	49.6	52.0	41.4	32.1	45.3

Appendix 2.1.4.B. Temperature data - average temperatures - Cheyenne WSFO AP station

ID: 481675
Latitude: 41.16 degrees
Longitude: -104.81 degrees
Elevation: 6115 feet
Station period of record: 01/01/1915-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1966	25.8	26.8	37.7	39.5	55.6	61.4	74.4	66.2	59.9	47.7	38.7	30.9	47.1
1967	31.4	31.1	39.0	44.1	49.1	57.7	67.3	66.0	58.4	49.3	35.0	22.5	45.9
1968	28.7	32.6	37.9	38.9	49.2	62.6	68.1	64.5	57.6	49.2	34.0	28.0	45.9
1969	31.4	31.9	28.7	48.1	55.6	57.0	71.4	70.6	61.2	37.1	36.4	31.2	46.7
1970	28.7	34.5	28.9	37.8	54.3	60.9	69.5	70.7	55.0	41.2	35.7	29.0	45.5
1971	29.7	25.7	32.3	41.0	49.2	63.4	65.5	68.7	53.1	44.3	36.0	29.0	44.8
1972	25.3	33.2	39.2	42.5	51.2	63.1	64.3	64.6	56.6	45.4	29.5	21.0	44.7
1973	23.7	29.7	31.9	37.3	51.4	62.9	65.8	68.4	54.1	49.3	35.3	29.3	44.9
1974	24.0	31.8	37.0	43.3	55.0	64.0	70.1	65.2	55.2	48.3	35.6	26.6	46.4
1975	25.5	24.9	30.2	37.5	48.4	57.9	67.3	66.3	56.0	48.1	34.2	32.5	44.1
1976	26.8	32.9	30.9	42.7	51.1	59.7	69.2	65.0	57.7	43.4	33.5	30.6	45.3
1977	22.4	32.8	32.0	44.7	53.4	65.2	68.2	63.5	60.6	48.3	34.4	29.0	46.2
1978	22.0	25.0	37.7	43.9	49.0	61.0	68.7	64.3	59.5	47.9	33.5	21.0	44.5
1979	17.3	31.5	36.0	44.9	49.9	61.5	69.9	65.9	62.8	49.7	29.4	32.8	46.0
1980	22.2	29.4	33.0	42.3	51.1	65.5	71.4	66.4	60.4	46.7	36.8	38.5	47.0
1981	33.4	32.2	36.8	50.1	50.5	63.7	69.0	65.2	61.2	46.0	40.7	30.7	48.3
1982	25.4	28.0	36.1	41.8	50.5	57.5	67.7	69.0	56.6	45.1	31.4	28.3	44.8
1983	32.7	33.5	32.0	34.8	47.4	57.3	67.8	70.2	58.9	48.5	32.3	15.0	44.2
1984	24.2	28.3	32.4	35.7	53.6	59.4	68.4	66.6	52.9	40.0	35.0	27.0	43.6
1985	19.5	23.3	35.2	45.5	54.3	61.1	69.3	66.7	52.8	45.1	26.2	26.1	43.8
1986	37.0	30.1	42.2	43.9	50.6	64.5	68.5	67.0	55.3	44.6	34.3	28.7	47.2
1987	29.1	31.6	32.4	46.7	54.5	63.3	69.2	64.9	57.9	46.9	36.7	25.7	46.6
1988	21.4	28.4	32.2	44.4	53.2	67.4	69.6	68.7	57.5	50.3	35.3	28.7	46.4
1989	30.2	17.3	37.3	44.3	54.2	60.3	70.6	67.0	57.5	46.5	38.7	24.2	45.7
1990	31.4	28.6	31.9	42.8	49.3	64.1	65.0	66.4	62.2	46.7	38.6	20.8	45.6
1991	25.0	36.2	36.4	41.0	52.4	62.5	67.7	67.6	58.0	46.1	31.7	31.6	46.3
1992	30.5	36.7	38.6	48.6	55.0	60.8	64.6	63.8	60.0	49.2	30.9	25.5	47.0
1993	26.1	24.9	37.2	42.1	53.4	58.7	66.1	64.8	54.2	44.1	29.2	30.6	44.3
1994	29.4	27.2	38.6	43.3	56.8	66.3	68.0	69.3	61.7	46.9	34.6	33.3	48.0
1995	30.7	32.6	36.8	39.5	45.7	59.0	67.8	71.6	57.1	45.7	38.4	30.0	46.2
1996	23.1	30.2	31.6	42.7	51.6	63.5	68.3	66.3	56.6	45.8	34.7	30.0	45.4
1997	24.7	26.7	38.3	35.8	51.7	62.6	68.3	65.0	59.2	46.1	31.4	28.3	44.8
1998	30.6	30.6	32.7	41.2	53.3	56.8	70.3	68.7	63.9	45.8	39.5	26.6	46.7
1999	30.8	34.6	37.6	38.4	50.5	60.3	70.0	67.6	54.0	47.5	43.9	32.0	47.3
2000	29.8	34.7	37.0	45.4	55.5	62.5	72.2	70.5	58.2	46.2	25.9	25.3	46.9
2001	27.6	26.8	35.1	44.3	52.6	64.2	72.2	69.5	61.5	47.2	38.9	29.2	47.4
2002	27.5	29.1	29.5	44.4	51.2	67.7	73.5	66.6	59.1	39.1	34.4	32.4	46.2
2003	34.9	24.9	37.6	45.8	53.5	58.3	75.1	70.7	56.4	51.3	33.4	30.0	47.7
2004	30.4	28.8	42.1	44.3	55.5	60.5	67.3	65.1a	58.7	-999y	-999z	-999z	50.3c
Max value	37.0	38.8	42.2	50.1	59.9	67.7	75.1	71.6	63.9	54.4	45.2	39.0	48.9
Min value	12.7	17.3	21.6	31.5	42.9	54.4	62.3	60.9	49.6	37.1	25.9	15.0	42.8
Mean	26.6	28.8	33.2	41.8	51.4	61.3	68.5	66.7	57.7	46.8	35.0	28.7	45.5
Std Dev	5.0	4.5	4.3	3.7	3.1	3.0	2.4	2.2	2.9	3.3	3.9	4.0	1.3
No. years	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	89.0	89.0	89.0	89.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Cheyenne WSFO AP station

ID: 481675
Latitude: 41.16 degrees
Longitude: -104.81 degrees
Elevation: 6115 feet
Station period of record: 01/01/1915-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1915	36.2	41.0	35.6	56.5	57.2	65.8	74.7	72.8	66.5	60.7	47.1	40.1	54.5
1916	28.2	43.7	49.9	51.6	60.9	72.3	82.3	76.1	69.7	54.2	42.0	31.0	55.1
1917	31.9	36.7	35.8	47.0	52.0	72.0	81.0	74.3	71.9	57.1	52.6	41.7	54.5
1918	29.9	41.8a	52.7	43.8	63.3	78.1	78.1	77.9	64.0	59.2	41.4	34.3	55.4
1919	42.2	35.5	44.0	52.2	64.5	77.1	82.1	81.3	70.8	51.3	41.4	39.0	56.8
1920	44.2	37.2	42.5	40.6	59.6	71.0	78.7	74.9	69.5	57.5	40.7	36.9	54.5
1921	38.6	39.9	49.5	49.7	61.5	73.3	79.9	77.9	72.6	64.8	50.0	40.9	58.2
1922	31.4	34.5	45.3	48.2	62.1	77.5	79.3	81.6	75.0	61.3	41.1	39.1	56.4
1923	41.7	35.9	38.5	51.0	60.8	70.5	79.0	74.8	67.5	47.5	47.4	39.5	54.5
1924	35.0	42.3	29.9	51.1	57.5	74.6	79.4	81.0	67.8	59.4	49.9	30.8	54.9
1925	36.3	45.3	49.5	57.4	64.5	72.9	80.1	75.3	70.3	49.2	44.4	37.0	56.9
1926	33.8	42.5	41.8	53.9	64.4	72.6	77.5	80.4	67.6	60.6	47.3	36.2	56.5
1927	41.3	38.9	40.5	51.2	63.8	70.4	77.2	72.8	68.4	62.0a	49.9	33.1	55.8
1928	41.5	38.9	44.9	50.5	63.7	64.7	78.8	78.9	70.4	56.1	44.6	37.3	55.9
1929	32.9	27.2	42.3	49.5	59.6	74.0	81.7	80.4	64.3	57.9	36.5	43.4	54.1
1930	23.1	44.2	39.9	61.4	57.5	75.8	81.9	77.1	70.1	56.4	47.4	39.8	56.2
1931	41.1	42.5	40.0	52.4	60.9	78.8	83.9	79.8	75.1	59.7	44.2	44.5	58.6
1932	32.0	43.4	36.8	54.9	64.5	72.8	83.6	80.0	71.6	55.3	50.4	28.4	56.1
1933	39.4	33.6	46.5	49.1	59.0	79.6	83.3	76.9	73.4	65.1	52.8	50.0	59.1
1934	45.1	42.5	49.6	56.5	73.7a	77.8	87.3	81.4	67.9	65.2	50.6	42.0	61.6
1935	45.3	45.4	47.7	49.4	53.5	72.9	83.8	81.6	72.2	59.3	44.3	42.2	58.1
1936	36.5	35.6	46.0	56.7	69.6	79.3	88.2	83.0	73.6	58.0	49.3	42.1	59.8
1937	24.7	38.6	41.5	53.6	66.6	72.6	84.7	87.0	76.1	61.9	46.4	37.4	57.6
1938	37.9	42.9	46.9	55.6	61.8	75.5	83.4	83.5	73.6	63.9	42.0	38.2	58.8
1939	38.4	31.7	46.2	55.8	69.1	76.4	88.4	82.3a	75.5	62.7	53.7	47.6	60.7
1940	29.2	38.4	49.4	54.4	68.4	80.3	84.5	82.2	71.7	64.2	43.4	42.4	59.0
1941	42.8	44.3	41.7	50.9	66.7	71.8	81.9	80.0	68.8	56.3	50.8	41.8	58.2
1942	37.2	31.6	43.7	57.7	61.9	70.6	84.9	79.9	69.5	59.8	49.1	43.1	57.4
1943	40.4	46.9	42.0	61.6	58.7	73.7	86.1	84.5	75.0	62.8	50.4	41.8	60.3
1944	40.5	38.9	39.1	48.6	66.2	73.5	81.2	84.4	74.4	65.4	49.1	40.4	58.5
1945	40.1	38.0	47.9	46.1	64.1	67.9	82.5	80.4	69.5	64.4	50.0	36.8	57.3
1946	40.6	43.4	50.9	62.8	56.9	76.5	82.9	79.5	71.0	54.5	43.4	44.6	58.9
1947	38.3	36.3	42.7	51.8	62.2	69.0	82.9	82.9	75.7	64.6	39.0	39.9	57.1
1948	36.0	35.3	39.3	58.6	66.1	73.0	82.3	81.9	76.8	61.1	41.6	37.0	57.4
1949	25.8	37.8	43.3	56.9	63.2	71.2	81.6	81.4	72.5	55.8	58.5	40.1	57.3
1950	37.2	46.6	43.7	53.7	58.3	74.7	76.5	79.5	66.3	67.8	46.4	45.3	58.0
1951	33.3	43.2	42.4	48.7	62.9	66.4	80.5	78.0	69.5	55.9	45.6	35.5	55.1
1952	40.4a	40.2	37.9	56.0	64.0	80.5	81.2	81.5	76.5	64.0	40.2	40.1	58.5
1953	46.2	38.8	50.5	48.5	59.3	76.8	82.6	80.2	76.8	63.8	50.7	38.8	59.4
1954	44.0	52.6	39.6	60.5	62.9	76.5	86.2	82.4	75.9	61.0	53.2	43.3	61.5
1955	35.6	34.7	40.9	57.3	66.5	69.9	85.5	81.7	72.3	63.6	41.3	42.0	57.6
1956	40.5	33.7	45.5	51.9	67.0	82.8	81.2	78.4	77.6	64.9	42.4	42.5	59.0
1957	31.9	46.7	44.8	47.1	57.8	73.2	83.2	80.2	69.3	57.7	39.3	46.0	56.4
1958	41.6a	44.9	35.2	49.4	69.9	76.5	77.7	82.9	73.4	63.6	48.9	41.0	58.8
1959	37.7	36.6	41.2	51.7	61.7	80.3	83.9	83.1	68.9	56.5	47.5	45.8	57.9
1960	36.2	29.3	44.5	60.1	69.7	77.9	85.9	84.3	75.6	62.0	48.1	37.5	59.3
1961	41.4	43.6	40.8	53.2	64.2	77.8	83.5	81.3	64.5	58.1	43.7	34.3	57.2
1962	31.6	38.6	39.9	59.5	68.6	72.7	79.2	83.1	74.1	65.1	52.1	44.0	59.0
1963	28.7	44.5	43.9	56.3	71.0	78.2	88.2	81.0	76.7	68.1	53.8	38.4	60.7
1964	37.6	33.4	39.2	51.5	67.3	74.0	86.1	78.9	72.1	64.0	47.1	41.0	57.7
1965	43.4	37.5	34.0	57.8	63.3	71.0	82.2	78.7	60.8	66.2	53.2	44.1	57.7

Appendix 2.1.4.B. Temperature data - maximum temperatures - Cheyenne WSFO AP station

ID: 481675
Latitude: 41.16 degrees
Longitude: -104.81 degrees
Elevation: 6115 feet
Station period of record: 01/01/1915-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1966	38.2	38.1	52.0	53.5	71.4	74.8	89.5	80.6	73.0	62.0	51.5	41.5	60.5
1967	42.1	42.2	51.5	57.2	60.1	68.6	80.5	80.5	71.4	63.7	47.9	33.7	58.3
1968	41.0	43.2	50.4	49.5	60.9	77.0	82.5	78.8	73.1	63.7	45.0	40.0	58.8
1969	43.4	43.3	40.6	61.6	68.9	68.5	86.5	85.9	75.7	46.2	48.3	42.4	59.3
1970	39.5	47.7	39.2	49.2	68.1	74.3	83.9	85.3	69.4	53.1	46.2	40.3	58.0
1971	38.7	36.0	43.5	53.0	60.5	77.7	80.0	84.0	65.9	56.5	47.7	39.3	56.9
1972	36.9	45.0	52.4	54.7	63.8	75.9	78.0	77.9	69.6	56.7	38.8	31.2	56.7
1973	33.6	40.7	39.9	46.3	64.4	76.9	78.2	81.6	65.0	61.8	45.0	38.8	56.0
1974	33.4	42.3	48.0	54.4	68.7	76.2	83.5	78.6	68.2	60.7	46.8	38.5	58.3
1975	35.8	36.6	41.5	49.6	60.2	71.3	80.8	81.3	70.6	62.1	46.6	43.1	56.6
1976	38.3	43.6	44.0	54.3	63.5	73.4	83.3	78.7	71.1	57.9	45.6	43.2	58.1
1977	35.8	45.8	44.0	56.6	66.3	78.4	81.5	75.5	75.9	62.0	45.5	40.1	59.0
1978	32.6	34.9	49.8	55.8	60.4	75.3	83.5	78.5	74.3	61.5	44.3	32.1	56.9
1979	28.5	42.3	46.6	57.9	60.7	74.5	84.4	78.6	78.1	63.0	39.7	44.3	58.2
1980	32.8	39.2	42.9	54.0	62.1	81.4	85.8	80.8	75.8	59.8	48.7	50.4	59.5
1981	46.5	45.5	48.6	64.1	60.6	77.6	81.8	77.8	75.2	57.5	53.3	41.4	60.8
1982	37.4	40.8	48.3	56.2	62.5	69.6	80.9	81.8	68.4	56.9	43.0	37.8	57.0
1983	43.6	45.5	40.5	45.2	58.6	68.7	81.5	84.0	74.8	62.2	43.7	24.6	56.1
1984	34.8	38.2	41.7	45.8	67.4	72.5	82.5	79.3	66.4	51.3	48.2	38.9	55.6
1985	30.6	34.9	48.1	58.3	68.2	76.1	82.3	81.8	65.2	57.8	36.0	35.1	56.2
1986	48.3	41.6	55.1	55.3	63.5	77.8	83.3	81.0	66.9	55.7	44.8	40.3	59.5
1987	39.6	40.9	42.6	61.2	65.8	76.6	83.5	78.1	73.1	61.1	48.6	36.2	59.0
1988	31.7	39.9	42.1	59.1	66.4	81.1	84.5	83.1	71.4	64.5	46.3	39.8	59.1
1989	42.7	26.8	51.0	57.0	67.7	72.9	85.6	80.5	71.3	59.8	51.3	36.4	58.6
1990	41.9	38.9	41.5	55.0	62.2	78.8	77.4	80.1	75.7	59.8	50.6	32.2	57.8
1991	36.2	49.3	48.2	52.5	64.5	74.8	81.5	80.5	71.3	60.3	41.2	43.8	58.7
1992	41.2	48.5	50.2	62.6	68.5	73.8	77.6	76.7	74.9	63.5	40.0	36.0	59.5
1993	36.3	35.7	47.9	53.2	65.5	71.6	80.1	77.5	66.7	56.2	39.9	40.5	55.9
1994	41.0	39.0	51.4	55.3	70.1	81.4	82.5	83.4	77.0	58.1	46.1	45.1	60.9
1995	41.3	44.8	48.9	50.9	54.6	71.0	81.9	87.0	69.5	59.3	50.0	41.7	58.4
1996	35.5	42.0	44.1	55.0	63.2	77.4	81.5	80.6	69.3	58.5	46.9	41.2	57.9
1997	34.1	36.2	51.7	46.2	64.6	74.2	82.5	76.6	70.7	58.1	41.7	37.4	56.2
1998	42.0	40.6	44.4	52.8	66.6	69.7	83.7	83.0	78.2	56.7	49.7	37.7	58.8
1999	40.5	46.0	51.5	48.2	62.3	73.1	84.0	80.8	67.7	62.7	58.3	42.3	59.8
2000	40.5	46.4	48.4	59.8	69.2	77.6	87.3	84.6	72.5	57.8	35.4	36.6	59.7
2001	37.3	37.4	45.6	55.5	64.3	79.1	86.5	83.6	76.6	60.3	51.8	40.2	59.9
2002	38.9	42.0	42.3	58.2	64.9	83.1	88.7	80.8	71.1	50.4	44.1	41.7	58.9
2003	46.4	35.0	47.6	57.1	65.5	69.9	90.9	85.0	70.6	66.1	42.8	40.3	59.8
2004	41.1	39.0	55.7	55.9	68.6	73.2	80.4	78.4a	71.8	-999y	-999z	-999z	62.7c
Max value	48.3	52.6	55.7	64.1	73.7	83.1	90.9	87.0	78.2	68.1	58.5	50.4	61.6
Min value	23.1	26.8	29.9	40.6	52.0	64.7	74.7	72.8	60.8	46.2	35.4	24.6	54.1
Mean	37.6	40.1	44.6	53.8	63.7	74.6	82.5	80.4	71.5	59.8	46.4	39.6	57.9
Std Dev	5.2	4.9	5.0	4.7	4.2	3.9	3.1	3.0	3.8	4.4	4.7	4.4	1.7
No. years	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	89.0	89.0	89.0	89.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Cheyenne WSFO AP station

ID: 481675
Latitude: 41.16 degrees
Longitude: -104.81 degrees
Elevation: 6115 feet
Station period of record: 01/01/1915-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1915	15.4	21.4	19.7	35.6	35.6	43.4	49.9	49.1	42.6	35.2	26.9	17.5	32.7
1916	7.0	20.0	27.4	28.5	36.2	44.6	55.9	51.6	41.8	31.6	20.5	11.0	31.4
1917	11.6	17.8	15.5	25.8	33.9	44.4	53.7	48.6	45.2	29.5	29.0	19.1	31.2
1918	9.7	17.2	29.0	25.7	38.1	52.1	53.3	52.1	42.2	37.3	20.4	19.1	33.0
1919	21.4	15.6	23.4	31.2	37.9	48.1	57.4	54.6	47.2	29.7	19.8	17.1	33.6
1920	22.8	16.4	20.5	22.5	39.2	47.8	53.0	50.7	44.7	34.4	22.9	18.9	32.8
1921	17.8	20.4	25.6	27.9	39.2	50.0	53.8	53.3	44.3	36.9	27.2	19.6	34.7
1922	10.7	13.3	22.3	28.2	37.6	50.2	51.7	56.5	46.5	33.7	21.8	19.9	32.7
1923	22.6	11.9	17.8	28.3	39.8	48.3	56.0	52.6	44.0	29.9	27.3	15.3	32.8
1924	14.4	20.8	13.4	27.7	34.1	45.8	52.2	51.7	41.3	36.3	27.1	11.8	31.4
1925	16.9	23.9	25.1	32.9	40.5	49.4	55.9	52.6	45.6	26.5	25.6	18.6	34.5
1926	18.0	23.8	21.7	30.3	41.7	48.3	52.9	53.7	40.8	33.3	28.5	17.0	34.2
1927	18.2	19.0	21.1	29.6	38.3	47.4	52.6	50.9	43.9	35.5	28.9	9.7	32.9
1928	22.1	15.6	23.3	26.2	41.7	44.0	52.7	51.6	43.9	34.0	24.2	16.3	33.0
1929	11.3	7.3	22.9	29.7	36.4	46.9	55.3	56.4	41.6	34.9	17.0	23.2	31.9
1930	2.9	24.8	19.2	37.1	36.0	46.6	55.8	55.2	43.4	32.5	25.0a	18.0	33.0
1931	20.6	21.8	19.6	29.3	36.4	52.5	56.1	53.5	48.4	35.2	21.3	20.7	34.6
1932	10.9	21.0	14.7	31.2	40.0	47.8	56.4	54.7	44.9	30.5	27.4	9.2	32.4
1933	19.2	9.5	24.3	26.4	37.6	53.5	57.0	53.1	48.3	36.9	27.6	28.0	35.1
1934	22.8	20.8	26.0	32.5	45.5	49.3	58.1	54.2	39.0	38.1	28.0	20.0	36.2
1935	21.3	20.1	22.5	26.5	35.8	46.7	55.7	54.1	43.4	30.1	21.7	16.7	32.9
1936	14.4	4.8	20.4	29.2	42.0	51.1	56.6	54.0	43.0	30.9	21.5	18.9	32.2
1937	0.7	14.4	19.4	28.4	39.1	46.6	54.0	55.2	44.7	35.5	21.6	15.9	31.3
1938	16.9	17.4	26.3	29.4	38.0	48.0	52.7	53.8	46.4	35.5	20.8	16.7	33.5
1939	17.9	6.6	22.7	29.5	39.8	45.9	55.1	50.0a	44.9	34.8	22.1	22.5	32.7
1940	8.5	19.7	26.5	29.6	39.4	49.3	55.7	52.2	48.5	36.3	21.1	20.5	33.9
1941	17.7	19.9	21.5	30.3	41.9	46.8	53.6	53.1	40.4	33.3	25.7	17.9	33.5
1942	12.0	11.1	20.4	32.4	35.5	46.5	53.0	51.2	41.1	32.8	23.0	20.2	31.6
1943	15.0	20.4	14.8	34.8	35.7	46.6	53.5	53.9	40.0	31.7	23.2	17.6	32.3
1944	14.2	15.1	16.8	26.9	38.5	45.5	51.6	51.8	40.2	33.8	22.4	14.2	30.9
1945	16.7	17.4	21.4	23.4	36.8	42.5	53.8	53.2	39.1	34.2	26.0	14.8	31.6
1946	15.4	16.7	25.4	35.1	35.0	46.7	54.8	52.1	42.4	31.5	21.9	24.4	33.5
1947	15.5	11.5	19.1	28.1	37.3	43.9	54.2	54.3	45.6	38.4	18.7	19.5	32.2
1948	13.1	12.5	16.1	31.0	39.4	48.2	53.4	53.0	46.6	31.5	20.9	15.7	31.8
1949	2.4	13.1	21.2	32.3	40.5	48.2	54.3	52.5	43.1	31.5	32.0	14.9	32.2
1950	10.6	20.9	18.9	26.9	34.1	45.6	50.5	48.7	43.5	37.5	23.8	21.7	31.9
1951	11.8	18.4	15.9	26.0a	39.4	42.8	53.1	52.1	39.7	31.7	21.3	13.3	30.4
1952	16.7	17.2	17.8	29.4	39.3	50.8	52.4	53.3	45.0	32.8	17.0	19.8	32.6
1953	24.9	16.4	23.7	24.7	36.1	49.8	55.4	52.9	44.8	35.0	27.1	16.6	34.0
1954	20.6	25.1	15.7	32.3	38.4	47.9	57.5	54.0	46.8	33.9	27.1	21.7	35.1
1955	14.1	11.6	17.2a	28.3	39.8	46.2	55.6	56.5	45.1	35.4	19.3	20.3	32.4
1956	17.3	11.5	20.5	27.1	42.5	51.6	53.7	51.0	44.5	35.9	21.3	22.8	33.3
1957	9.5	23.0	21.6	26.6	38.3	47.5	54.8	54.5	41.4	36.1	20.2	24.0	33.1
1958	18.6a	21.0	15.8	28.5	43.8	49.1	51.3	54.4	43.7	35.5	23.5	20.6	33.8
1959	14.8	15.4	20.9	26.8	39.4	50.4	52.5	55.0	42.5	29.4	18.7	20.4	32.2
1960	15.0	10.5	22.3	33.4	41.7	50.9	55.6	53.0	46.7	35.5	23.1	16.1	33.6
1961	16.5	20.0	22.3	28.2	41.3	51.7	54.7	54.8	38.3	31.4	20.8	12.5	32.7
1962	6.4	15.7	18.1	31.7	41.6	47.0	52.0	51.4	43.7	36.9	27.4	19.0	32.6
1963	4.7	21.5	19.7	31.0	40.6	49.8	57.1	55.6	49.5	40.7	26.2	15.4	34.3
1964	14.5	11.2	15.5	30.0	41.9	46.9	55.6	49.7	41.7	33.3	23.6	17.9	31.8
1965	20.7	14.4	10.3	33.6	38.2	47.6	54.1	50.7	38.4	37.8	29.5	20.1	32.9

Appendix 2.1.4.B. Temperature data - minimum temperatures - Cheyenne WSFO AP station

ID: 481675
Latitude: 41.16 degrees
Longitude: -104.81 degrees
Elevation: 6115 feet
Station period of record: 01/01/1915-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1966	13.4	15.5	23.3	25.6	39.8	48.1	59.4	51.8	46.7	33.5	26.0	20.4	33.6
1967	20.6	19.9	26.4	31.0	38.1	46.7	54.1	51.5	45.3	34.9	22.2	11.3	33.5
1968	16.4	22.0	25.5	28.2	37.4	48.2	53.8	50.2	42.1	34.7	22.9	16.0	33.1
1969	19.4	20.6	16.8	34.6	42.4	45.4	56.4	55.4	46.7	27.9	24.4	20.1	34.2
1970	17.9	21.4	18.6	26.4	40.4	47.4	55.0	56.1	40.6	29.3	25.1	17.8	33.0
1971	20.6	15.5	21.2	28.9	37.9	49.1	50.9	53.4	40.2	32.1	24.3	18.8	32.7
1972	13.6	21.4	26.1	30.2	38.6	50.4	50.5	51.3	43.5	34.2	20.2	10.8	32.6
1973	13.8	18.6	23.9	28.2	38.4	48.9	53.4	55.1	43.1	36.7	25.6	19.9	33.8
1974	14.7	21.4	26.1	32.2	41.3	51.9	56.7	51.8	42.3	35.8	24.4	14.7	34.4
1975	15.2	13.3	18.8	25.3	36.6	44.5	53.8	51.3	41.3	34.0	21.7	22.0	31.5
1976	15.4	22.2	17.8	31.1	38.7	46.0	55.1	51.3	44.3	28.9	21.4	18.0	32.5
1977	9	19.9	20.1	32.7	40.5	52.0	54.8	51.5	45.4	34.5	23.3	17.9	33.5
1978	11.5	15.1	25.5	32.0	37.5	46.7	53.9	50.1	44.8	34.2	22.7	10.0	32.0
1979	6.1	20.8	25.3	31.8	39.0	48.5	55.4	53.2	47.6	36.5	19.2	21.4	33.7
1980	11.6	19.5	23.1	30.5	40.2	49.5	56.9	52.1	44.9	33.6	24.9	26.6	34.5
1981	20.2	18.8	24.9	36.0	40.3	49.7	56.1	52.6	47.2	34.6	28.1	20.0	35.7
1982	13.5	15.2	23.8	27.4	38.4	45.4	54.5	56.3	44.9	33.3	19.8	18.7	32.6
1983	21.9	21.5	23.5	24.4	36.1	45.9	54.0	56.4	43.1	34.9	20.9	5.4	32.3
1984	13.7	18.5	23.0	25.6	39.8	46.3	54.2	53.9	39.5	28.7	21.8	15.0	31.7
1985	8.4	11.7	22.3	32.8	40.4	46.0	56.3	51.7	40.4	32.3	16.4	17.1	31.3
1986	25.6	18.5	29.2	32.4	37.7	51.1	53.6	53.0	43.7	33.5	23.8	17.0	34.9
1987	18.6	22.2	22.2	32.2	43.1	49.9	54.9	51.7	42.8	32.7	24.8	15.1	34.2
1988	11.2	16.9	22.4	29.7	40.1	53.7	54.8	54.3	43.5	36.0	24.3	17.6	33.7
1989	17.7	7.8	23.7	31.5	40.8	47.6	55.6	53.4	43.7	33.2	26.1	12.1	32.8
1990	21.0	18.4	22.3	30.5	36.3	49.4	52.6	52.6	48.6	33.6	26.7	9.3	33.4
1991	13.8	23.1	24.5	29.6	40.3	50.2	53.9	54.8	44.6	31.8	22.1	19.3	34.0
1992	19.7	24.8	27.0	34.5	41.5	47.8	51.6	50.9	45.0	34.8	21.8	14.9	34.5
1993	15.9	14.1	26.5	30.9	41.3	45.8	52.1	52.1	41.8	32.0	18.4	20.8	32.6
1994	17.8	15.3	25.8	31.3	43.6	51.2	53.5	55.3	46.4	35.7	23.1	21.4	35.0
1995	20.1	20.4	24.7	28.1	36.8	47.0	53.7	56.2	44.6	32.2	26.7	18.3	34.1
1996	10.6	18.5	19.1	30.4	40.1	49.7	55.0	52.0	43.9	33.0	22.4	18.9	32.8
1997	15.3	17.2	24.8	25.5	38.8	51.0	54.0	53.4	47.7	34.1	21.0	19.2	33.5
1998	19.2	20.5	21.0	29.6	40.0	43.9	56.9	54.4	49.7	34.9	29.3	15.5	34.6
1999	21.0	23.2	23.7	28.6	38.7	47.5	55.9	54.5	40.3	32.4	29.6	21.7	34.7
2000	19.1	23.0	25.7	31.0	41.8	47.3	57.0	56.3	43.9	34.7	16.3	14.0	34.2
2001	17.8	16.3	24.5	33.1	40.9	49.3	57.9	55.3	46.4	34.1	25.9	18.2	35.0
2002	16.0	16.3	16.6	30.6	37.5	52.3	58.4	52.3	47.1	27.9	24.7	23.0	33.6
2003	23.5	14.8	27.7	34.4	41.4	46.7	59.3	56.4	42.2	36.5	24.1	19.7	35.6
2004	19.7	18.6	28.5	32.6	42.4	47.8	54.1	51.7a	45.6	-999y	-999z	-999z	37.9c
Max value	25.6	25.1	29.2	37.1	45.5	53.7	59.4	56.5	49.7	40.7	32.0	28.0	36.2
Min value	0.7	4.8	10.3	22.5	33.9	42.5	49.9	48.6	38.3	26.5	16.3	5.4	30.4
Mean	15.5	17.5	21.8	29.8	39.1	48.0	54.5	53.1	43.9	33.7	23.5	17.8	33.2
Std Dev	5.1	4.4	3.9	3.0	2.3	2.5	2.0	1.9	2.6	2.6	3.3	4.0	1.2
No. years	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	89.0	89.0	89.0	89.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - Douglas station

ID: 482690
Latitude: 42.74 degrees
Longitude: -105.39 degrees
Elevation: 4805 feet
Station period of record: 08/01/1948-01/31/1995
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	70.0	62.9	45.5	29.4	21.7	-999g
1949	7.1	22.4	33.5	48.0	54.7	61.5	71.1	69.3	56.9	43.3	43.1	25.7	44.7
1950	20	31.8	30.3	40.1	46.5	60.4	65.7	65.0	56.9	52.1	33.7	29.1	44.3
1951	19.8	30.4	30.1	38.1	52.5	55.8	68.5	67.7	54.2	44.6	33.4	20.3	43.0
1952	26.5	25.8a	26.8	46.3	54.3	66.8	69.3	68.5	61.0	45.8	24.4	28.5	45.3
1953	34.8	24.2	37.6	38.7	49.1	65.4	72.9	69.9	60.4	48.8	38.3	24.0	47.0
1954	28.6	36.7	27.6	46.9	52.5	63.7	75.3b	69.6	61.6	44.9	39.7	30.5	48.1
1955	19.9	21.2	26.5	43.5	54.2	58.4a	71.7	71.2	59.0	48.6	26.9	27.3	44.0
1956	24.9	24.2	32.4	39.5	55.3	67.1	69.0	65.0	60.1a	49.7	29.6	30.2	45.6
1957	16.9	31.6	34.8	39.6	50.6	60.3	70.7	70.1	54.9	47.0	30.7	33.4	45.0
1958	27.4	28.5	28.4	40.3	58.0	62.9	65.4	69.9	59.1	47.6	35.3	26.6	45.8
1959	24.1	25.6	33.2	42.2	51.5	66.8	69.0	69.4	56.4	43.0	29.6	29.9	45.0
1960	23.0	20.7	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
1961	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1962	-999z	-999z	-999z	-999z	-999z	-999z	-999z	66.7	58.4	49.7	38.8	28.9	-999g
1963	12.3	34.1	35.5	43.5	55.0	65.0	72.8	70.1	63.4	53.6	37.7	22.6	47.1
1964	24.4	22.5	26.5	41.2	53.4	61.1	74.3	66.3	57.7	47.7d	33.7	24.9	44.5
1965	30.2	25.0	22.4	47.6	51.4	61.0	69.6	66.2	49.2	50.6	39.8e	30.0	45.2
1966	21.2	22.6	-999z	39.3	55.7	62.7	75.3	66.8	61.9b	44.9	36.6	26.0	46.6a
1967	27.6	29.3	39.1	43.4	48.2	58.2	68.9	68.0	59.8	48.4	29.1	19.8	45.0
1968	24.3	-999z	37.0	38.8	48.7	61.2	69.4e	64.9	55.9a	-999z	32.2	21.4a	45.4b
1969	-999f	28.8	29.0	47.3	55.9	57.6	70.6d	71.5	62.9	38.9	35.1	26.6	47.6a
1970	23.2	31.8	28.5	38.3	54.0	62.7	70.9	71.6	54.4	41.3	35.3	24.3	44.7
1971	26.7	26.5	32.0	42.1	50.6	64.4	67.3b	70.1	54.7	42.9	32.6	27.8	44.8
1972	18.7	30.5	39.7a	42.8	53.0	64.2	65.9	68.2b	56.8	45.4	29.8	18.2	44.4
1973	22.0	26.7	34.1	36.4	50.6	61.9	68.0	69.2	-999g	48.0	33.2b	27.8	43.5a
1974	19.9	31.0	37.6	43.9	52.4d	-999h	72.1	65.0	53.5	47.5	34.8	24.9	43.9a
1975	-999z	22.4	31.5	39.7a	50.8	-999f	72.5	68.2	-999j	46.9	33.4	28.8	43.8c
1976	23	32.3	32.3	44.6	54.2	60.8	72.3b	68.5	58.2	42.8	31.5	27.9	45.7
1977	16.7	32.3	33.5	46.3	55.3	68.4	71.0	66.2	61.1	48.5	34.4	26.5a	46.7
1978	16.6	20.3	-999k	45.7	49.8	62.5	69.4	64.9	59.6c	46.8	28.4	-999f	46.4b
1979	-999l	-999p	36.3	44.4	50.4	62.4	-999f	67.0	-999g	-999i	27.1	29.0a	45.2e
1980	19.1	27.1e	32.5	43.9	51.8	65.4	-999i	66.8	59.7	-999h	34.8	34.0	43.5b
1981	30.1	29.6	38.3	50.1	51.7	65.2	71.8	68.2	61.4	45.7	40.1	28.4	48.4
1982	22.6	26.4	36.6	41.7	50.9	59.2	69.3	-999z	-999z	-999z	-999z	-999z	43.8e
1983	-999z	-999z	35.0	37.5	-999m	60.1	70.1	73.6	59.6	-999q	31.1	10.8	47.2d
1984	22.2	30.3	34.8	38.6	53.6	61.6	71.4	70.5	53.8	43.6	35.0	24.0	45.0
1985	16.5	21.1	36.0a	46.6	56.8	-999i	71.9	66.8	54.8	-999j	21.2	21.4	41.3b
1986	33	28.6	43.0	44.3	51.3	65.6	68.4	68.8	55.5	-999j	32.7	-999z	49.1b
1987	24.6	31.2	32.4	48.3	58.2	64.1	70.7	65.9	57.8	45.0	35.3	22.0	46.3
1988	19.4	26.6	33.4	46.1	55.6	70.9	72.2	69.2	57.4	-999i	35.0	26.4	46.5a
1989	29.1	14.3	36.6	45.7	54.4	61.4	72.8	69.2	57.3	-999i	38.2	21.7	45.5a
1990	30.7	28.4	33.8b	-999q	51.7	-999k	69.7	68.3	62.9	-999i	39.6a	18.2	44.8c
1991	20.7	35.7	37.5	43.1	54.2	65.0	71.0	70.7	59.8	-999r	32.8	27.5	47.1a
1992	30.1	36.3	39.5	48.7	56.5	63.9	66.5	65.9	59.4	-999k	28.2	20.7	46.9a
1993	21.8	15.0	35.5	42.9	55.4	59.5	65.8	66.9	55.0	-999j	27.6	29.0	43.1a
1994	26.9	25.1	39.0	44.9	60.0	66.8	69.0	70.8	60.5	45.8	34.3	29.2	47.7
1995	25.1	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999k
Max value	34.8	36.7	43.0	50.1	60.0	70.9	75.3	73.6	63.4	53.6	43.1	34.0	48.4
Min value	7.1	14.3	22.4	36.4	46.5	55.8	65.4	64.9	49.2	38.9	21.2	10.8	43.0
Mean	23.2	27.2	33.7	43.1	53.1	62.9	70.2	68.3	58.2	46.4	33.3	25.6	45.6

Appendix 2.1.4.B. Temperature data - average temperatures - Douglas station

ID: 482690
Latitude: 42.74 degrees
Longitude: -105.39 degrees
Elevation: 4805 feet
Station period of record: 08/01/1948-01/31/1995
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
Std Dev	5.6	5.2	4.4	3.5	2.9	3.2	2.5	2.1	3.1	3.1	4.5	4.5	1.4
No. years	41.0	41.0	41.0	42.0	42.0	39.0	41.0	44.0	41.0	32.0	44.0	42.0	24.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Douglas station

ID: 482690
Latitude: 42.74 degrees
Longitude: -105.39 degrees
Elevation: 4805 feet
Station period of record: 08/01/1948-01/31/1995
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	87.3	79.8	63.3	41.7	35.1	-999g
1949	20.8	35.0	45.6	63.7	67.5	75.9	89.0	87.9	75.0	57.2	59.2	39.7	59.7
1950	35.1	47.1	44.0	53.6	59.4	76.2	81.0	83.8	70.5	70.0	48.4	45.3	59.5
1951	34.4	44.7	45.1	51.4	64.9	68.6	84.5	84.0	70.7	57.6	48.1	34.6	57.4
1952	41.0	40.5a	38.5	61.9	67.3	83.2	86.7	84.8	80.3	66.3	40.6	39.5	60.9
1953	46.8	36.8	51.5	51.4	62.5	81.8	88.6	85.9	79.6	67.2	53.2	37.9	62.0
1954	42.6	52.9	40.3	62.1	66.5	79.4	92.8	86.9	78.1	58.8	54.4	43.0	63.1
1955	32.9	33.4	39.3	57.3	68.5	69.7a	88.4	87.1	75.9	66.7	40.0	40.7	58.3
1956	38.9	37.6	47.6	52.5	68.3	86.1	85.5	81.8	79.7	67.0	42.4	43.2	60.9
1957	30.0	45.8	47.9	50.3	60.7	74.0	87.6	85.4	71.1	59.1	41.0	45.6	58.2
1958	42.2	41.9	38.6	51.3	73.6	78.1	79.8	87.0	76.8	66.7	49.5	39.2	60.4
1959	38.2	36.9	44.1	56.9	64.0	83.8	87.6	87.4	70.2	58.0	46.5	45.3	59.9
1960	35.7	31.8	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
1961	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1962	-999z	-999z	-999z	-999z	-999z	-999z	-999z	85.1	75.4	65.8	52.5	43.6	-999g
1963	27.0	46.9	49.6	56.7	70.8	80.8	89.4	85.6	80.3	71.1	53.7	35.9	62.3
1964	37.8	35.2	40.7	52.7	67.4	76.2	91.6	83.3	76.8	67.8d	49.0	37.6	59.7
1965	43.2	38.8	35.3	59.7	63.2	73.6	84.7	83.5	62.0	69.5	54.4e	43.8	59.3
1966	35.6	37.1	-999z	53.0	74.5	79.0	92.7	84.1	78.5b	61.4	51.0	39.6	62.4a
1967	39.8	41.8	51.9	57.7	59.9	70.4	84.4	86.1	75.6	64.8	44.1	33.8	59.2
1968	39.6	-999z	51.7	52.6	61.9	76.1	86.6e	81.3	74.5a	-999z	47.2	34.6a	60.6b
1969	-999f	42.4	41.4	62.2	72.5	71.0	88.4d	90.3	81.2	50.7	49.6	41.4	62.8a
1970	36.0	46.4	41.7	50.7	69.2	78.6	87.9	89.4	71.6	56.7	46.4	40.3	59.6
1971	39.0	38.1	44.4	55.6	63.1	80.1	84.2b	88.5	69.4	57.3	45.8	40.1	58.8
1972	33.5	44.2	55.1	56.2	66.5	79.6	81.8	83.5b	73.5	60.9	42.3	31.6	59.1
1973	35.9	41.9	45.9	48.4	66.9	78.7	83.1	86.5	-999g	65.0	44.6b	41.5	58.0a
1974	33.6	43.6	52.0	56.8	68.7d	-999h	89.3	82.3	71.9	65.1	48.9	39.6	59.3a
1975	-999z	35.5	43.2	52.6a	64.7	-999f	89.0	85.0	-999j	65.0	49.1	42.0	58.5c
1976	36.2	44.5	47.3	56.9	68.9	75.5	87.9b	85.4	75.5	59.1	47.5	43.0	60.6
1977	32.0	47.4	45.9	61.1	69.5	84.8	85.7	80.7	79.0	65.0	47.8	39.5a	61.5
1978	28.5	31.3	-999k	57.8	62.0	78.8	84.6	81.3	78.0c	64.2	41.3	29.3	57.9a
1979	-999l	-999p	48.9	59.2	64.1	78.0	-999f	81.1	-999g	-999i	40.2	43.9a	59.4e
1980	32.9	39.2e	44.4	59.3	65.2	82.5	-999i	82.2	77.3	-999g	48.3	47.5	57.9b
1981	45.2	44.4	52.4	64.5	62.7	80.2	86.9	83.9	78.5	58.3	55.1	41.4	62.8
1982	36.1	41.3	50.2	56.6	63.6	71.5	84.9	-999z	-999z	-999z	-999z	-999z	57.7e
1983	-999z	-999z	44.8	48.9	-999m	72.7	85.3	88.4	76.5	-999q	43.4	22.1	60.2d
1984	35.8	41.6	45.2	50.1	69.1	76.9	87.6	87.2	70.8	58.4	50.7	38.6	59.3
1985	31.2	35.3	51.3a	63.3	73.4	-999i	89.0	85.7	68.5	-999j	33.7	34.2	56.6b
1986	46.4	41.4	57.5	57.2	66.7	80.7	85.3	85.9	68.9	-999j	45.4	-999z	63.5b
1987	38.8	42.5	45.6	65.2	72.8	81.1	88.1	82.3	76.7	63.7	49.4	34.9	61.8
1988	33.4	41.0	45.5	64.5	71.6	88.4	89.7	87.7	75.1	-999i	47.5	40.1	62.2a
1989	45.1	26.8	50.7	60.8	69.8	77.5	90.2	86.0	74.0	-999i	51.6	35.9	60.8a
1990	42.7	41.1	46.7b	-999q	66.2	-999k	84.7	85.6	80.8	-999i	53.2	32.8	59.3c
1991	36.9	51.0	51.8	55.8	65.8	79.2	88.0	87.9	75.9	-999r	44.3	42.7	61.7a
1992	45.3	51.6	53.9	65.7	72.9	79.0	81.4	82.2	78.9	-999k	42.2	34.7	62.5a
1993	33.0	31.3	47.9	55.9	69.5	73.5	81.5	83.0	71.1	-999j	40.4	40.4	57.0a
1994	39.0	38.4	54.7	60.9	76.2	84.3	85.6	87.9	79.8	60.4	46.1	42.9	63.0
1995	38.1	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999k
Max value	46.8	52.9	57.5	65.7	76.2	88.4	92.8	90.3	81.2	71.1	59.2	47.5	63.1
Min value	20.8	26.8	35.3	48.4	59.4	68.6	79.8	80.7	62.0	50.7	33.7	22.1	57.4
Mean	37	40.6	46.8	56.9	67.2	78.1	86.6	85.2	75.2	62.8	47.1	39.0	60.3

Appendix 2.1.4.B. Temperature data - maximum temperatures - Douglas station

ID: 482690
Latitude: 42.74 degrees
Longitude: -105.39 degrees
Elevation: 4805 feet
Station period of record: 08/01/1948-01/31/1995
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
Std Dev	5.5	5.8	5.1	4.8	4.2	4.6	3.1	2.4	4.3	4.7	5.1	4.9	1.6
No. years	41	41.0	41.0	42.0	42.0	39.0	41.0	44.0	41.0	32.0	44.0	43.0	24.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Douglas station

ID: 482690
Latitude: 42.74 degrees
Longitude: -105.39 degrees
Elevation: 4805 feet
Station period of record: 08/01/1948-01/31/1995
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	52.7	46.0	27.8	17.0	8.4	-999g
1949	-6.7	9.7	21.4	32.3	42.0	47.2	53.2	50.7	38.9	29.3	27.0	11.6	29.7
1950	4.9	16.5	16.6	26.6	33.5	44.5	50.5	46.1	43.4	34.1	18.9	13.0	29.1
1951	5.2	16.1	15.2	24.9	40.1	43.1	52.5	51.4	37.6	31.6	18.6	6.1	28.5
1952	11.9	11.1a	15.1	30.7	41.2	50.5	51.9	52.3	41.7	25.4	8.1	17.5	29.8
1953	22.8	11.5	23.6	25.9	35.8	48.9	57.2	54.0	41.1	30.4	23.3	10.2	32.1
1954	14.7	20.5	14.9	31.7	38.5	47.9	57.8b	52.3	45.2	31.0	24.9	18.1	33.1
1955	6.8	9.0	13.7	29.6	39.9	47.0a	55.1	55.4	42.1	30.5	13.8	14.0	29.8
1956	11.0	10.8	17.2	26.6	42.3	48.0	52.5	48.1	40.1a	32.4	16.7	17.3	30.3
1957	3.8	17.5	21.7	28.8	40.5	46.6	53.8	54.7	38.7	34.8	20.5	21.1	31.9
1958	12.6	15.1	18.2	29.4	42.5	47.8	50.9	52.8	41.4	28.5	21.0	14.0	31.2
1959	9.9	14.4	22.2	27.5	38.9	49.8	50.5	51.4	42.7	28.0	12.6	14.4	30.2
1960	10.3	9.5	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
1961	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1962	-999z	-999z	-999z	-999z	-999z	-999z	-999z	48.3	41.3	33.5	25.1	14.2	-999g
1963	-2.5	21.2	21.4	30.2	39.2	49.1	56.2	54.5	46.5	36.2	21.7	9.3	31.9
1964	11.0	9.8	12.3	29.6	39.4	45.9	57.0	49.4	38.6	27.6d	18.5	12.2	29.3
1965	17.2	11.3	9.5	35.5	39.5	48.4	54.5	48.9	36.4	31.6	25.1e	16.2	31.2
1966	6.7	8.2	-999z	25.6	36.9	46.3	58.0	49.5	45.3b	28.5	22.2	12.3	30.9a
1967	15.4	16.9	26.4	29.1	36.5	46.0	53.4	49.8	44.0	32.0	14.2	5.8	30.8
1968	8.9	-999z	22.4	24.9	35.5	46.2	52.1e	48.5	37.1	-999z	17.2	8.3a	30.1b
1969	-999f	15.3	16.6	32.4	39.2	44.3	52.7d	52.6	44.6	27.1	20.6	11.8	32.5a
1970	10.4	17.1	15.3	25.8	38.7	46.7	53.9	53.9	37.3	25.8	24.1	8.3	29.8
1971	14.4	14.9	19.6	28.7	38.1	48.6	50.2a	51.7	40.0	28.5	19.4	15.5	30.8
1972	4.0	16.8	24.6a	29.5	39.5	48.9	50.0	52.9b	40.0	29.8	17.3	4.8	29.8
1973	8.2	11.6	22.3	24.4	34.3	45.1	52.8	51.8	-999g	31.1	22.2a	14.2	28.9a
1974	6.2	18.3	23.3	31.1	36.1d	-999h	55.0	47.8	35.2	30.0	20.6	10.2	28.5a
1975	-999z	9.3	19.8	26.7	36.8	-999f	56.0	51.4	-999j	28.7	17.8	15.6	29.1c
1976	9.8	20.2	17.4	32.2	39.5	46.0	56.7a	51.5	40.8	26.5	15.5	12.8	30.8
1977	1.3	17.2	21.0	31.6	41.0	52.0	56.2	51.8	43.2	31.9	20.9	13.6a	31.8
1978	4.8	9.3	-999j	33.6	37.6	46.2	54.2	48.4	41.3c	29.5	15.6	-999f	32.0b
1979	-999l	-999p	23.6	29.5	36.7	46.7	55.7e	52.9	-999g	-999i	13.9	14.0a	34.1d
1980	5.3	13.8d	20.6	28.5	38.3	48.2	-999g	51.3	42.0	-999h	21.2	20.5	29.0b
1981	15.0	14.8	24.2	35.6	40.7	50.2	56.6	52.6	44.3	33.2	25.2	15.5	34.0
1982	9.2	11.5	22.9	26.8	38.2	46.9	53.7	-999z	-999z	-999z	-999z	-999z	29.9e
1983	-999z	-999z	25.1	26.1	-999m	47.5	54.9	58.9	42.6	-999q	18.9	-0.4	34.2d
1984	8.5	19.1	24.4	27.1	38.0	46.3	55.2	53.7	36.9	28.9	19.3	9.4	30.6
1985	1.8	7.0	20.3	29.9	40.1	-999i	54.7	47.8	41.1	-999j	8.7	8.6	26.0b
1986	19.7	15.8	28.5	31.3	35.8	50.5	51.6	51.6	42.1	-999j	20.0	-999z	34.7b
1987	10.5	19.9	19.2	31.4	43.6	47.1	53.3	49.5	38.9	26.4	21.1	9.0	30.8
1988	5.3	12.1	21.4	27.6	39.6	53.3	54.6	50.7	39.6	-999i	22.5	12.7	30.9a
1989	13.1	1.8	22.6	30.7	38.9	45.3	55.4	52.5	40.6	-999i	24.8	7.5	30.3a
1990	18.7	15.8	21.0b	-999q	37.3	-999k	54.7	51.1	45.0	-999i	25.7a	3.6	30.3c
1991	4.5	20.4	23.3	30.4	42.6	50.9	54.0	53.6	43.7	-999r	21.2	12.2	32.4a
1992	15	21.0	25.1	31.6	40.0	48.9	51.5	49.7	39.9	-999k	14.2	6.6	31.2a
1993	10.6	-1.3	23.1	29.9	41.2	45.4	50.1	50.8	38.9	-999j	14.7	17.6	29.2a
1994	14.7	11.7	23.3	28.8	43.9	49.3	52.4	53.6	41.1	31.3	22.4	15.5	32.3
1995	12.0	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999k
Max value	22.8	21.2	28.5	35.6	43.9	53.3	58.0	58.9	46.5	36.2	27.0	21.1	34.0
Min value	-6.7	-1.3	9.5	24.4	33.5	43.1	50.0	46.1	35.2	25.4	8.1	-0.4	28.5
Mean	9.4	13.7	20.5	29.3	39.0	47.6	53.9	51.5	41.1	30.1	19.4	12.0	30.8

Appendix 2.1.4.B. Temperature data - minimum temperatures - Douglas station

ID: 482690
Latitude: 42.74 degrees
Longitude: -105.39 degrees
Elevation: 4805 feet
Station period of record: 08/01/1948-01/31/1995
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
Std Dev	5.9	5.0	4.1	2.8	2.4	2.2	2.2	2.4	2.8	2.7	4.4	4.6	1.3
No. years	41	41.0	41.0	42.0	42.0	39.0	42.0	44.0	41.0	32.0	44.0	42.0	24.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Douglas 1 ESE station

ID: 482685
Latitude: 42.75 degrees
Longitude: -105.36 degrees
Elevation: 4870 feet
Station period of record: 06/01/1909-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1909	-999z	-999z	-999z	-999z	-999z	77.6c	87.3	88.7	75.5	63.4	52.1c	25.1a	67.1e
1910	33.5	37.4	-999z	-999z	-999z	-999z	-999z	-999z	-999w	64.4d	52.0c	41.7a	-999g
1911	43.6a	33.4	52.3	57.0	67.5	83.6a	86.4	82.5a	77.0	54.8b	40.9a	33.6a	59.4
1912	33.5	34.2d	32.3	54.9	-999z	77.0	82.7	80.6	63.0a	58.5	52.2	38.2	55.2a
1913	36.7	26.0	38.7	61.1	67.1	78.7	83.7	88.9	72.6	55.1	52.9	24.4	57.2
1914	40.9	38.6	49.9	55.3	69.1	80.5	90.1	85.1	78.8	62.6	55.3	27.7	61.2
1915	33.5	38.8	37.7	63.0	61.6	71.1	78.7	80.5	71.6	64.7	48.6	39.8	57.5
1916	29.3	42.8	53.0	57.1	64.1	75.7	91.4	83.6	75.4	54.4	43.4	30.7	58.4
1917	32.4	39.1	37.1	51.1	58.4	74.4	89.0	81.9	77.1	59.1	54.9	43.8a	58.2
1918	28.3	40.1	55.4	49.9	66.5	83.8	86.0	84.0	69.1	63.3	43.3	36.9	58.9
1919	43.0	36.2	49.3	56.4	71.1	84.1	90.7	87.4	77.3	50.7	40.0	36.8	60.2
1920	41.1	37.8	43.4	44.1	64.3	76.2	85.3	82.4	74.7	61.9	40.7a	37.5	57.4
1921	39.3	42.3	54.0	55.6	65.7	79.1	86.7	85.4	75.3	67.9	49.2	37.8	61.5
1922	27.6	33.8	49.4	51.9	65.5	81.9	83.5	88.4	80.5	64.6	40.4	34.2	58.5
1923	41.6	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	54.4	50.8	36.9	-999h
1924	34.7	46.3	37.0	58.7	65.6	-999z	-999z	-999z	-999z	61.8	48.3	30.3	47.8d
1925	36.7	46.8	53.4	61.4	69.5	76.2	85.6	81.5	73.0	48.2	48.1	37.9	59.9
1926	34.0	43.3	46.1	58.6	68.7	78.0	82.9	87.1	72.8	62.2	47.3	37.6	59.9
1927	38.6	41.8	43.6	55.5	65.5	73.6	81.2	77.3	70.5	63.4	50.1	33.2	57.8
1928	40.3	39.8	49.6	55.9	69.2	69.6	83.0	82.0	72.3	59.6	44.4	35.1	58.4
1929	29.8	29.0	44.3	54.2	63.9	76.8	86.9	86.5	66.3	60.3	38.5	44.3	56.7
1930	21.6	45.5	43.3	65.3	64.4	85.2	92.1	82.2	73.9	57.5	47.6	37.9	59.7
1931	42.1	46.0	47.5	63.1	71.5	89.5	94.7	87.7	82.3	63.5	49.3a	41.0	64.9
1932	32.0	45.4	41.6	60.6	71.3	80.6	89.5	87.7	76.9	60.3	53.1	29.7	60.7
1933	43.1	35.6	53.5	56.7	66.4	88.2	91.3	82.4	80.2	70.7	55.0	50.3	64.5
1934	45.7	45.5	54.1	64.0	82.0	82.7	92.6	87.2	72.8	69.2	53.6	42.7	66.0
1935	45.3	46.8	50.7	54.3	59.3	77.6	91.4	86.6	75.6	63.7	43.3	34.7	60.8
1936	33.0	23.9	48.4	57.9	75.2	82.1	91.3	84.3	73.1	58.6	46.0	41.0	59.6
1937	23.9	38.1	44.5	57.0	69.8	75.9	84.8	86.5	75.3	60.1a	41.2	37.4	57.9
1938	37.0	38.4	48.0	55.7	61.0	76.1	82.7	83.3	74.3	65.3	41.4	39.4	58.5
1939	40.9	31.1	50.5	60.5	72.9	75.9	89.6	83.1	76.3	63.2	53.1	46.3	61.9
1940	28.0	40.2	50.8	55.8	71.3	83.3	88.7	83.7	76.2	65.6	42.8	42.1	60.7
1941	40.2	42.2	45.7	54.7	71.3	75.5	85.1	81.4	70.6	58.2	51.2	41.9	59.8
1942	31.2	33.3	45.6	61.6	64.4	74.9	86.2	83.4	69.8	60.6	48.8	40.9a	58.4
1943	40.1	47.0	40.6	64.4	62.4	74.6	87.3	86.2	73.1	65.5	48.4	39.9	60.8
1944	33.8	38.2	38.9	53.9	68.8	73.6	82.6	83.8	74.4	64.4	42.7	34.5	57.5
1945	36.5	38.3	48.0	48.1	65.9	69.6	83.6	82.6	68.2	63.9	50.0	34.7	57.5
1946	40.0	43.4	53.2	65.8	60.5	78.7	86.4	81.6	72.5	54.7	46.5	44.7	60.7
1947	39.2	35.0	44.2	56.6	67.5	70.2	87.2	86.0	77.6	67.5	36.5	37.3	58.7
1948	36.3	36.2	40.2	61.6	70.0	76.1	84.5	83.9	77.7	62.0	42.5	35.3	58.8
1949	21.9	35.7	45.5b	64.1	68.4	75.4	84.7b	83.9	72.7	56.2	57.9	40.1	58.9
1950	35.4	45.9	45.8a	55.3	61.9	78.4	81.7	83.8	72.0	71.5	51.1	45.6b	60.7
1951	35.7	47.1a	47.5	53.9	67.3	70.5	85.9	84.6	72.3	61.2	49.3	36.6	59.3
1952	42.5	42.9	41.3	64.6	69.8	84.3	86.8	85.3	81.1	68.0	42.5	41.4	62.5
1953	48.0	39.9	53.7	53.8	64.2	83.0	90.0	86.2	80.5	68.9	55.4	40.1	63.6
1954	45.5	54.4	42.8	64.1	69.2	80.5	93.2	88.1	79.9	63.9c	-999z	-999z	68.2b
1955	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1956	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1957	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1958	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1959	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l

Appendix 2.1.4.B. Temperature data - maximum temperatures - Douglas 1 ESE station

ID: 482685
Latitude: 42.75 degrees
Longitude: -105.36 degrees
Elevation: 4870 feet
Station period of record: 06/01/1909-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1960	-999z	33.7	48.0	61.4	70.8a	80.0a	90.2	-999z	79.6	64.9	45.6	39.2a	61.3b
1961	40.4	43.3	48.5a	54.9b	66.0	80.9	85.8	86.2a	66.1	60.5	43.3	36.7	59.4
1962	32.4	40.9	44.6	65.4	69.2a	76.8	84.3	-999z	-999z	-999z	-999z	-999z	59.1e
1963	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1964	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1965	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1966	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1967	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1968	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1969	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1970	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1971	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1972	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1973	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1974	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1975	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1976	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1977	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1978	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1979	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1980	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1981	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1982	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1983	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1984	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1985	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1986	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1987	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1988	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1989	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1990	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1991	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1992	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1993	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1994	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1995	-999z	-999z	-999z	-999z	-999z	-999z	-999z	90.3	73.6	59.7	51.7	42.5	-999g
1996	37.0	46.1	46.1	61.4	65.4	83.1	87.5	86.7	74.1	61.3	47.4	39.3	61.3
1997	37.2	39.4	55.8	52.9	70.6	79.7	86.3	83.4	76.2	63.6	47.1	37.0	60.8
1998	39.6	42.9	44.3	59.5	72.8	72.1	-999z	87.1	80.7	58.2	50.6	40.5	58.9a
1999	41.8	47.8	55.1	52.4	67.1	76.7a	88.7	86.9	71.0	66.3	61.6	45.0	63.4
2000	41.4b	46.9a	52.6a	60.9	73.0	79.9	90.8	88.9	74.5	-999z	-999z	-999z	67.7c
2001	-999y	34.4	48.0	60.3	70.9	82.6	90.5	89.5	78.6	61.7	53.2	40.2	64.5a
2002	39.9	43.5	40.1	61.2	68.3	85.3	91.9	85.5	75.0	54.3	47.3	43.8	61.3
2003	48.0	35.5	48.7	61.9	70.2	75.6	92.5	88.4	71.9	67.9	41.1	42.1	62.0
2004	43.6	41.1	53.7	59.7	69.2	74.9	83.7	81.3	75.3a	-999z	-999z	-999z	64.7c

Appendix 2.1.4.B. Temperature data - maximum temperatures - Douglas 1 ESE station

ID: 482685
Latitude: 42.75 degrees
Longitude: -105.36 degrees
Elevation: 4870 feet
Station period of record: 06/01/1909-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
Max value	48.0	54.4	55.8	65.8	82.0	89.5	94.7	90.3	82.3	71.5	61.6	50.3	66.0
Min value	21.6	23.9	32.3	44.1	58.4	69.6	78.7	77.3	63.0	48.2	36.5	24.4	56.7
Mean	37.1	40.0	46.9	57.9	67.6	78.3	87.2	84.9	74.5	61.8	47.8	38.3	60.0
Std Dev	6.2	5.8	5.5	4.7	4.2	4.6	3.6	2.8	4.0	4.9	5.4	5.1	2.1
No. years	55.0	56.0	55.0	55.0	54.0	55.0	54.0	54.0	55.0	56.0	55.0	55.0	46.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - Encampment 10 ESE station

ID: 483045
Latitude: 41.18 degrees
Longitude: -106.62 degrees
Elevation: 7385 feet
Station period of record: 08/01/1948-10/31/1998
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	63.7	59.0	45.0	25.6	23.8	-999g
1949	11.3	19.1	31.5	42.6	48.5	55.8	64.0	62.7	55.7	42.1	40.6	24.2a	41.5
1950	22.0	26.7	29.5	39.4	44.0	56.1	61.5	61.0	53.8	50.3	35.0	31.4	42.6
1951	19.4	23.5	27.4	38.5	50.5	51.7	64.7	61.7	53.6	43.7	29.5	-999z	42.2a
1952	21.8a	21.6	23.9	41.0	50.0	60.7	63.6	63.4	57.1	48.3	26.2	23.1	41.7
1953	30.8	23.1	34.6	36.5	45.3	59.3	66.7	62.9	56.8	47.2	37.3	23.8a	43.7
1954	28.3	31.1	27.4	43.8	51.8	57.3	68.2	63.5	57.5	46.0	38.1	24.7	44.8
1955	21.5	18.8	26.0	39.5	50.0	55.5	66.7	65.4	56.8	46.0a	28.7	29.2	42.0
1956	27.4	16.9	28.7	39.6	52.5	60.5	62.6	60.6	57.2	47.6	27.6	23.8	42.1
1957	18.8	29.8	29.7	38.1	48.1	56.5	64.6a	64.3	54.3	46.5	28.8	29.3	42.4
1958	23.9	32.6	26.4	37.6	54.4	58.8	61.6	65.1	55.7	46.3	35.8	29.9	44.0
1959	23.6	24.6	28.3	40.4	49.1	62.1	63.8	63.1	53.1	42.1	32.2	27.5	42.5
1960	21.8	16.8	30.9	41.4	47.8	57.0	63.2	62.5	58.0	46.9	32.6	23.0	41.8
1961	22.5	26.1	31.1	36.8	50.1	59.7	63.4	63.6	48.4	43.8	28.4	19.7	41.1
1962	15.2	25.1	24.0	42.7	50.1	56.0	62.1	61.3	54.1	46.7	36.4	28.1	41.8
1963	14.6	29.4	30.0	39.6	51.0	57.2	65.1	63.2	59.3	51.0	36.7	25.3	43.5
1964	19.8	16.7	22.0	37.6	49.4	55.0	67.1	61.7	53.3	45.9	32.3	23.7	40.4
1965	24.7	22.1	19.0	41.2	47.0	56.3	63.3	61.0	46.8	47.7	37.7	27.6	41.2
1966	20.6	19.3	32.0	38.3	51.6	56.9	66.8	60.7	56.4	42.5	35.7	23.0	42.0
1967	24.3	23.2	34.0	40.0	46.2	54.3	64.0	63.2	54.9	46.1	33.6	18.8	41.9
1968	23.6	26.1	30.5	34.5	46.6	58.6	64.5	60.5	53.0	46.0	28.7	21.2	41.1
1969	27.7	23.9	20.7	43.0	53.5	53.0	64.3	65.6	56.9	34.4	30.6	26.0	41.6
1970	23.4	28.9	26.4	32.8	50.3	56.8	64.9	65.5	52.9	37.7	33.3	23.5	41.4
1971	24.6	21.8	28.9	38.6	46.5	57.5	62.4	64.4	50.1	42.1	31.4	20.1	40.7
1972	22.0	26.9	36.7	40.6	48.5	58.6	61.7	-999z	53.0	43.2	25.5	20.2	39.7a
1973	17.3	22.7	27.0	32.8	46.8	55.3	61.1	63.0	52.4	46.0	31.2a	25.5	40.1
1974	20.0	23.9	34.5	38.5	49.8	58.5	63.4	58.1	50.9	45.6	31.9	20.0	41.3
1975	19.5	22.1	28.7	35.0	45.7	53.4	63.0	58.9	50.5	44.4	31.2	25.8	39.8
1976	21.8	28.2	26.9	39.2	48.3	54.9	64.5	59.0	52.1a	39.5	30.0	23.5	40.7
1977	20.8	26.3	26.0	41.6	48.2	59.9	63.0e	59.3e	53.3	44.4b	29.4	25.6a	41.5
1978	23.0	24.7	33.0	39.4b	-999z	53.9	-999z	60.2	54.9a	43.5	31.9	17.6	38.2b
1979	12.6	24.2	30.3	38.4	46.3	55.0	61.7	59.5	54.6	43.4	23.3	28.3	39.8
1980	21.8	27.6	28.0	36.4	47.8	56.5	62.8	60.1	53.4	41.8	32.2	33.5	41.8
1981	29.8	27.5	33.2	44.8	45.7	57.7	62.6	61.4	56.4	41.8	35.3	26.6	43.6
1982	21.1	22.9	32.6	35.6	46.0	53.6	60.6	63.2	52.2	38.9	27.1	22.6	39.7
1983	26.4	27.4	30.0	31.9	43.1	53.0	60.5	63.6	54.4	44.2	29.0	15.6	39.9
1984	17.5	20.5	26.4	30.6	48.3	53.7	61.7	61.4	51.4	36.2	31.2	22.8	38.5
1985	16.0	17.4	29.8	40.4	48.8	55.3	61.9	58.3	47.2	41.1	27.4	19.6	38.6
1986	26.7	25.9a	36.9	39.7	46.3	56.8	58.3a	59.9	49.1	40.6	30.7	23.3	41.2
1987	20.6	25.8	28.9	42.6	49.3	56.1c	62.0	57.3	50.1	43.3	29.0	20.0	40.4
1988	16.8	22.7	25.9	41.0	47.9	59.5	62.1	62.7	51.8	46.4	27.2	20.8	40.4
1989	19.1	17.2	33.3	42.0	49.0	55.1	64.8	59.3	52.4	42.1	29.8	18.6	40.2
1990	22.4	19.9	29.9	39.4	43.9	59.1	62.6	62.0	57.8	42.0	32.7	14.5	40.5
1991	18.0	28.0	29.1	35.6	47.4	56.7	62.4	62.9	53.6	42.7	25.8	23.2	40.4
1992	-999z	26.4	32.7	42.8	49.6	55.0	58.4	59.9	53.7	46.6	24.0	20.6	42.7a
1993	22.7	20.8	30.0	35.0	48.2	54.2	59.5	60.0	51.8	39.7	24.0	21.4	38.9
1994	23.8	21.9	32.0	40.2	51.5	58.3	61.0	61.9	55.1	41.9	28.4	26.9	41.9
1995	23.5	30.6	33.9	37.1	43.2	53.7	59.9	63.4	52.7	41.6	36.5	28.3	42.0

Appendix 2.1.4.B. Temperature data - average temperatures - Encampment 10 ESE station

ID: 483045
Latitude: 41.18 degrees
Longitude: -106.62 degrees
Elevation: 7385 feet
Station period of record: 08/01/1948-10/31/1998
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1996	22.5	26.8	31.3	40.0	48.8	57.2	62.6	60.9	50.8	40.1	32.1	24.9	41.5
1997	23.1	23.6	35.4	34.2	47.5	56.6	60.7	59.7	53.4	40.2	26.9	19.9	40.1
1998	23.3	23.2	26.3	35.7	46.7	47.5	61.6	57.4	53.4	38.5	-999z	-999z	41.4b

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Encampment 10 ESE station

ID: 483045
Latitude: 41.18 degrees
Longitude: -106.62 degrees
Elevation: 7385 feet
Station period of record: 08/01/1948-10/31/1998
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	80.3	76.8	61.7	37.1	34.1	-999g
1949	22.6	30.8	41.7	56.6	61.3	69.9	80.8	80.4	74.0	56.5	54.8	36.6a	55.5
1950	32.7	37.5	40.5	52.4	58.2	73.9	77.7	79.1	68.8	68.5	46.8	43.1	56.6
1951	31.0	38.2	40.4	51.4	64.8	67.1	82.5	77.4	72.4	57.7	42.7	-999z	56.9a
1952	32.3a	33.7	35.4	54.3	64.5	77.7	81.0	79.3	75.6	67.6	41.2	33.5	56.3
1953	40.8	34.0	46.9	50.0	58.7	76.7	83.7	79.2	75.9	63.8	49.1	35.6	57.9
1954	39.0	43.2	39.9	58.7	67.7	74.6	85.4	81.4	74.1	61.5	52.6	35.8	59.5
1955	32.0	30.3	38.5	53.2	65.2	70.9	85.4	80.5	74.7	62.9	40.1	39.1	56.1
1956	38.8	29.0	41.2	53.2	67.3	77.8	79.8	77.4	77.8	66.3	41.0	35.2	57.1
1957	29.9	39.8	41.2	50.2	60.5	70.8	80.4a	80.7	72.6	60.9	41.3	42.1	55.9
1958	36.5	41.8	39.1	50.9	70.1	76.9	79.0	82.2	73.0	64.6	50.1	41.2	58.8
1959	35.4	35.6	38.9	54.5	64.6	78.7	81.8	78.9	68.3	56.4	47.9	42.7	57.0
1960	33.4	29.3	43.8	56.6	63.6	75.5	82.9	80.3	75.0	64.2	45.0	35.6	57.1
1961	36.2	37.2	42.9	49.9	64.9	76.5	79.8	78.9	62.9	59.4	41.6	31.9	55.2
1962	27.7	35.4	36.1	57.7	65.1	71.7	78.9	78.8	71.7	65.2	50.9	43.3	56.9
1963	26.0	40.1	42.9	53.3	67.6	73.9	82.1	76.4	75.3	67.7	51.1	38.4	57.9
1964	31.4	27.9	33.7	49.9	64.4	69.5	84.2	77.5	70.2	64.9	44.7	33.6	54.3
1965	34.5	33.6	32.1	52.9	60.3	69.7	78.3	77.7	60.2	65.4	49.3	40.2	54.5
1966	31.8	31.5	45.3	53.6	67.7	72.0	83.8	77.8	72.8	58.4	49.1	33.5	56.4
1967	33.8	34.1	45.5	53.5	59.4	67.6	80.0	80.5	70.3	60.3	47.0	29.4	55.1
1968	34.0	35.8	42.2	46.6	59.6	74.4	80.4	75.5	68.6	60.5	40.5	32.1	54.2
1969	37.0	34.8	33.7	55.9	69.0	66.0	81.8	83.7	73.4	46.1	43.6	37.7	55.2
1970	32.0	40.1	36.9	44.3	65.3	71.7	81.0	81.4	68.1	52.7	43.2	34.0	54.2
1971	32.3	31.6	39.5	52.5	59.7	73.9	79.3	80.9	66.3	58.0	44.0	31.1	54.1
1972	33.2	38.0	49.3	53.8	63.5	73.1	79.1	-999z	68.6	56.5	37.1	31.6	53.1a
1973	28.9	35.3	38.4	44.2	60.8	70.5	75.6	79.0	67.9	62.2	42.7a	37.4	53.6
1974	31.1	38.0	46.2	51.6	66.5	74.5	78.5	76.7	68.3	59.8	43.9	32.1	55.6
1975	31.1	34.0	40.3	47.8	59.6	68.4	77.7	75.3	68.4	61.5	46.5	37.4	54.0
1976	34.2	40.9	40.0	54.2	63.9	71.0	80.2	75.5	68.2	58.1	46.5	38.4	55.9
1977	33.4	40.9	40.1	56.2	64.5	78.8	80.7	75.5	73.3	62.5	44.9	37.0	57.3
1978	33.3	37.1	47.5	56.3	59.9	73.7	80.1	78.2	73.7a	61.8	45.9	29.2	56.4
1979	24.0	34.7	40.6	52.7	60.0	72.0	78.3	73.9	72.8	58.7	34.3	40.7	53.6
1980	31.6	38.4	39.1	50.0	61.4	75.1	79.0	76.6	70.6	56.4	44.6	45.6	55.7
1981	44.0	40.7	45.4	59.9	57.5	73.8	78.1	77.5	72.1	54.1	48.5	36.7	57.4
1982	33.0	35.6	44.3	50.1	59.5	68.6	75.8	77.2	65.5	52.2	38.2	33.3	52.8
1983	37.3	38.5	40.3	44.2	56.1	67.2	76.0	78.1	70.7	59.0	41.0	26.7	52.9
1984	28.5	31.8	38.4	43.0	64.5	69.0	76.4	75.5	66.1	48.5	43.2	33.6	51.6
1985	26.7	30.2	41.9	55.8	64.5	71.6	76.2	77.2	62.8	55.8	37.9	30.7	52.6
1986	36.5	36.3	50.6	53.6	62.2	74.4	73.9	76.1	63.6	54.8	41.8	35.2	54.9
1987	32.6	37.4	41.6	58.6	62.9	72.6	77.3	73.5	69.1	61.2	41.8	31.3	55.0
1988	29.3	35.3	39.4	57.2	63.8	76.4	78.8	78.8	67.1	62.0	38.6	33.4	55.0
1989	31.5	29.3	45.5	55.4	64.9	71.0	81.7	75.1	69.0	57.9	43.4	31.8	54.7
1990	34.1	32.8	41.8	53.9	61.5	76.0	77.1	77.8	73.0	56.0	44.3	27.6	54.7
1991	30.1	40.6	41.1	49.6	63.2	72.6	78.5	78.6	69.4	59.3	37.3	35.5	54.6
1992	-999z	38.6	44.7	57.5	64.6	70.3	74.0	76.5	69.7	61.3	34.3	31.5	56.6a
1993	34.2	31.8	41.7	46.4	62.0	68.9	76.1	75.4	67.5	52.6	36.0	33.1	52.1
1994	33.4	33.9	44.3	54.1	69.1	77.6	81.2	80.6	72.9	56.6	41.6	38.4	57.0
1995	35.5	43.4	47.5	51.6	55.7	69.5	78.3	83.0	70.1	58.1	48.2	40.0	56.7

Appendix 2.1.4.B. Temperature data - maximum temperatures - Encampment 10 ESE station

ID: 483045
Latitude: 41.18 degrees
Longitude: -106.62 degrees
Elevation: 7385 feet
Station period of record: 08/01/1948-10/31/1998
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1996	34.0	39.7	44.0	54.6	64.8	75.0	81.6	80.7	69.1	57.7	46.0	35.7	56.9
1997	35.3	35.6	50.8	49.5	63.9	74.5	81.4	77.5	71.6	59.3	44.4	37.1	56.7
1998	38.5	37.9	44.2	54.3	67.0	67.3	82.4	78.4	76.4	60.1	-999z	-999z	60.6b

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Encampment 10 ESE station

ID: 483045
Latitude: 41.18 degrees
Longitude: -106.62 degrees
Elevation: 7385 feet
Station period of record: 08/01/1948-10/31/1998
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	47.0	41.2	28.2	14.1	13.5	-999g
1949	-0.1	7.5	21.2	28.7	35.7	41.6	47.2	45.1	37.5	27.7	26.3	11.7a	27.5
1950	11.2	16.0	18.5	26.5	29.8	38.3	45.4	42.8	38.8	32.2	23.2	19.6	28.5
1951	7.8	8.8	14.3	25.5	36.2	36.3	46.9	46.1	34.8	29.6	16.2	-999z	27.5a
1952	11.3a	9.5	12.4	27.7	35.5	43.7	46.2	47.5	38.5	29.1	11.3	12.8	27.1
1953	20.8	12.2	22.2	23.1	31.9	42.0	49.6	46.6	37.8	30.5	25.5	11.9a	29.5
1954	17.6	19.0	14.9	28.9	35.8	40.1	51.1	45.6	40.9	30.5	23.6	13.5	30.1
1955	11.1	7.4	13.5	25.9	34.8	40.2	48.0	50.2	38.8	29.4a	17.4	19.3	28.0
1956	16.0	4.8	16.3	25.9	37.7	43.1	45.5	43.8	36.6	29.0	14.2	12.5	27.1
1957	7.6	19.8	18.3	26.1	35.6	42.3	48.8a	47.8	36.1	32.2	16.4	16.4	28.9
1958	11.2	23.3	13.7	24.3	38.7	40.7	44.2	48.0	38.4	28.0	21.4	18.6	29.2
1959	11.7	13.5	17.7	26.2	33.5	45.4	45.9	47.3	37.8	27.8	16.4	12.3	28.0
1960	10.2	4.3	17.9	26.1	32.0	38.4	43.5	44.7	41.0	29.6	20.2	10.4	26.5
1961	8.9	15.0	19.4	23.7	35.4	42.9	46.9	48.4	34.0	28.1	15.3	7.5	27.1
1962	2.8	14.8	11.8	27.8	35.1	40.3	45.3	43.8	36.4	28.3	21.9	12.9	26.8
1963	3.2	18.6	17.1	25.9	34.4	40.6	48.1	50.1	43.2	34.4	22.3	12.2	29.2
1964	8.3	5.5	10.2	25.3	34.4	40.5	50.0	46.0	36.3	27.0	19.8	13.8	26.4
1965	14.8	10.7	6.0	29.4	33.7	42.9	48.3	44.4	33.5	30.0	26.1	15.0	27.9
1966	9.4	7.1	18.6	23.0	35.5	41.8	49.9	43.6	39.9	26.5	22.3	12.6	27.5
1967	14.7	12.2	22.5	26.5	33.0	41.0	48.1	45.9	39.4	31.9	20.2	8.1	28.6
1968	13.2	16.4	18.9	22.3	33.7	42.7	48.6	45.5	37.4	31.4	16.8	10.3	28.1
1969	18.4	13.0	7.7	30.0	37.9	40.1	46.7	47.4	40.4	22.6	17.7	14.2	28.0
1970	14.8	17.7	16.0	21.2	35.2	41.8	48.9	49.7	37.7	22.7	23.4	13.0	28.5
1971	17.0	11.9	18.3	24.6	33.2	41.0	45.5	47.9	33.8	26.2	18.8	9.1	27.3
1972	10.9	15.7	24.1	27.4	33.5	44.1	44.2	-999z	37.5	29.9	13.9	8.8	26.4a
1973	5.7	10.1	15.6	21.5	32.7	40.1	46.5	47.1	36.8	29.8	19.6a	13.5	26.6
1974	9.0	9.8	22.7	25.5	33.1	42.5	48.3	39.5	33.4	31.3	19.9	8.0	26.9
1975	8.0	10.1	17.2	22.3	31.8	38.3	48.2	42.4	32.5	27.4	15.9	14.1	25.7
1976	9.4	15.4	13.7	24.1	32.6	38.9	48.9	42.6	36.4a	21.0	13.5	8.7	25.4
1977	8.2	11.8	11.8	27.1	31.8	41.1	45.6e	42.8e	33.2	25.7b	13.8	14.0a	25.6
1978	12.6	12.3	18.5	22.3b	-999z	34.1	-999z	42.2	35.7	25.1	17.9	6.0	22.7b
1979	1.3	13.7	19.9	24.1	32.6	38.0	45.1	45.0	36.5	28.0	12.2	15.9	26.0
1980	11.9	16.9	16.8	22.9	34.2	37.9	46.6	43.7	36.2	27.2	19.9	21.3	28.0
1981	15.5	14.3	21.1	29.6	34.0	41.6	47.1	45.2	40.8	29.4	22.0	16.5	29.8
1982	9.3	10.3	20.9	21.2	32.5	38.5	45.3	49.3	38.9	25.5	16.0	12.0	26.6
1983	15.5	16.3	19.6	19.5	30.2	38.9	45.1	49.1	38.0	29.4	17.1	4.5	26.9
1984	6.5	9.2	14.3	18.3	32.0	38.3	46.9	47.3	36.6	24.0	19.2	12.0	25.4
1985	5.2	4.5	17.7	24.9	33.1	38.9	47.5	39.5	31.6	26.4	16.8	8.5	24.5
1986	16.8	15.4a	23.3	25.8	30.4	39.1	42.9a	43.8	34.7	26.4	19.5	11.5	27.5
1987	8.5	14.3	16.2	26.5	35.7	40.0c	46.7	41.1	31.2	25.5	16.2	8.6	25.9
1988	4.3	10.1	12.4	24.9	31.9	42.5	45.4	46.7	36.5	30.7	15.8	8.3	25.8
1989	6.7	5.0	21.0	28.6	33.1	39.2	47.8	43.5	35.7	26.3	16.1	5.4	25.7
1990	10.8	7.0	17.9	24.9	26.2	42.2	48.1	46.2	42.5	28.0	21.0	1.5	26.4
1991	6.0	15.5	17.2	21.5	31.5	40.8	46.2	47.2	37.7	26.0	14.2	10.8	26.2
1992	-999z	14.2	20.8	28.0	34.6	39.6	42.7	43.3	37.8	32.0	13.7	9.7	28.8a
1993	11.3	9.8	18.4	23.6	34.4	39.6	43.0	44.6	36.0	26.8	11.9	9.7	25.7
1994	14.3	9.9	19.7	26.3	33.9	39.0	40.7	43.1	37.3	27.2	15.3	15.4	26.8
1995	11.6	17.8	20.4	22.7	30.6	37.8	41.5	43.8	35.4	25.0	24.7	16.6	27.3

Appendix 2.1.4.B. Temperature data - minimum temperatures - Encampment 10 ESE station

ID: 483045
Latitude: 41.18 degrees
Longitude: -106.62 degrees
Elevation: 7385 feet
Station period of record: 08/01/1948-10/31/1998
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1996	11.1	13.9	18.6	25.4	32.8	39.3	43.5	41.1	32.4	22.4	18.1	14.0	26.1
1997	10.9	11.5	19.9	18.9	31.1	38.8	40.1	41.9	35.1	21.1	9.3	2.6	23.4
1998	8.0	8.6	8.5	17.2	26.3	27.8	40.8	36.4	30.5	17.0	-999z	-999z	22.1b

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - Glenrock 5 ESE station

ID: 483950
Latitude: 42.83 degrees
Longitude: -105.79 degrees
Elevation: 4948 feet
Station period of record: 07/01/1941-06/28/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1941	-999z	-999z	-999z	-999z	-999z	-999z	70.5	69.6	54.7	43.5	37.8a	27.5	-999f
1942	20.4	21.9a	31.5	46.5	50.2a	62.5	72.4	70.4	56.6c	47.2a	35.8	29.7	45.4
1943	25.4b	33.3a	28.5a	51.0	50.0	61.5	71.2	71.7	58.1	48.3	35.9	28.7	47.0
1944	22.5	26.0	27.4	42.7	54.8	60.3	68.9	70.0	59.6	49.4	34.3	23.6	44.9
1945	27.3	27.8	36.9	37.7	53.3	58.0	69.8	69.2	-999u	50.6	38.1	26.0	45.0a
1946	30.7	30.7	40.8	51.6	48.7	63.8	72.4	68.9	59.7	44.7a	-999d	33.5b	49.6a
1947	26.5	25.0	32.0	43.1	54.8	58.8	72.1	72.0	63.1	54.5	27.8	29.1	46.6
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	70.5	64.9	47.2	31.9	25.2	-999g
1949	9.8	25.7c	36.3	48.9	55.3	60.3	71.1c	71.0	59.1	-999f	44.9b	-999f	48.2b
1950	19.4b	34.5a	33.0a	43.7	47.6c	-999q	-999j	-999d	57.4a	52.9	37.3a	-999f	-999d
1951	22.8	-999d	32.9	40.7	54.0c	-999d	-999e	-999e	-999f	45.6c	36.2a	-999d	-999f
1952	27.1	28.9	28.3	49.1c	56.2	67.0	70.1	-999f	-999h	-999d	30.4	32.7a	43.3c
1953	36.7b	28.0a	-999d	41.2a	50.4a	67.1c	75.0	72.5	64.2	51.6	41.8	27.5	50.5a
1954	30.8	38.3	30.5	48.5	55.9a	66.1	77.7	70.9	62.5	47.8	41.1a	32.2a	50.2
1955	23.7	22.6	29.0	45.6	56.4	60.8	74.3a	73.1	60.8	51.3b	-999g	30.0	48.0a
1956	28.1	26.6	34.7a	41.4	57.6a	-999d	71.7a	67.4	60.7	50.4	30.8	-999d	46.9b
1957	17.4	-999z	-999z	41.7	51.9	62.2	72.6	72.0	57.1	48.5	32.2	36.4	49.2b
1958	30.4	30.6a	30.9	42.4	60.0	65.5	68.0	72.3	-999f	50.7	37.3a	30.6	47.1a
1959	27.8	27.9	35.1	-999z	52.9	67.7	70.0	69.1	56.9c	46.0a	31.9a	32.3	47.1a
1960	23.9c	21.2a	33.0b	47.7	54.8	66.1a	-999g	69.6	61.6b	50.8c	35.9a	26.8	44.7a
1961	32.3	32.8	38.9	44.8	56.1	66.9	70.9	73.5	54.2a	45.0a	32.4a	24.9	47.7
1962	19.6	30.3	-999z	48.3	56.3	62.2	69.7	69.4	60.4	53.6	43.0	31.8	49.5a
1963	17.1	36.6	39.6a	-999z	57.4	65.9	74.3	72.4	65.3	56.9	42.0	28.3	50.5a
1964	28.2	25.6a	30.0	43.8	-999d	63.3a	76.2	69.0	59.3	49.9	35.5a	29.2	46.4a
1965	33.7	27.2	23.0b	-999g	53.5	63.5a	71.3	68.5	50.9	53.8	-999y	33.2	47.9b
1966	25.5	27.4	40.3	42.8	58.9	65.0	77.1	69.6a	63.5	48.5	39.4	30.0	49.0
1967	31.3	31.6	41.8	46.9	52.3	60.8	71.8	71.5b	62.6	52.2	34.6	22.8	48.4
1968	27.2	34.4	39.3	42.5	51.9	65.2a	72.4	67.8	60.2	51.4	36.4	25.1	47.8
1969	29.2	30.6	31.1	51.0	59.2	61.3a	75.0	75.1	66.6	42.3	39.2	30.8	49.3
1970	27.1	35.7	31.8	40.9	56.4	66.2	73.9	75.1	58.8	44.0	37.2	29.0	48.0
1971	29.0	27.6	34.2	45.0	52.7	66.9	70.5	71.3	55.8	44.6	35.5	30.1b	46.9
1972	21.8	31.8	-999e	45.5	55.3a	66.0	68.9a	69.5	57.8	-999d	-999f	19.6	48.5c
1973	-999d	30.9a	33.7	37.9	52.1b	66.1	70.7	72.3	56.6	51.3	35.0	32.2	49.0a
1974	22.4	32.4	38.7	45.6	55.9	66.7	73.7	67.9	57.1	50.4	39.7	27.1	48.1
1975	25.5	26.0	33.7b	40.8	54.0	63.5	76.2a	-999h	58.5	51.4b	36.2	32.2	45.3a
1976	26.3	34.7	34.4	46.9	56.8	62.8	-999z	70.5	61.9b	45.6	35.4	32.4	46.2a
1977	22.8	35.1	35.8	48.0	56.9	70.0	73.9	69.3	63.6	52.3	35.9a	29.8	49.4
1978	21.0	24.0	40.2	47.2	51.9	65.3	71.4	67.4	61.3	49.9	29.6	18.1	45.6
1979	-999z	31.4a	39.1	46.8	53.3	65.7	73.6	69.3	64.1	50.9	29.3	31.0c	50.4a
1980	20.3	26.9a	32.8	45.6	51.5	65.6	74.4	70.2	61.9a	47.5	36.7	37.4	47.6
1981	32.3	32.6	39.4	51.3	53.2	67.1	73.9a	70.6	63.0	46.4	40.6	31.6	50.2
1982	24.3	29.9	37.7	43.1	53.3	61.0	72.4	75.5	58.6	46.0	35.2	28.5	47.1
1983	32.8	35.9	37.6	39.7	51.4	63.2	-999d	-999n	61.2	51.0	34.5	13.3	42.1b
1984	26.6	31.6	36.1	39.5	54.9	-999r	-999q	72.8	-999k	44.9a	37.9	27.0	41.2c
1985	19.9	-999n	-999z	47.5	56.4	62.0b	74.5	69.6	54.7	45.1	19.7	20.8a	47.0b
1986	-999i	31.5a	46.8	47.0	54.8a	70.3	70.1	71.4	58.3	49.4	35.7a	30.1	51.4a
1987	28	-999j	36.3	52.8b	60.3	67.1	73.1	-999n	-999j	49.7	37.6b	28.0a	48.1c
1988	24.1	30.2	36.4	49.3	58.2	75.3	76.0	72.7	61.4	52.0	37.0	30.9	50.3
1989	32.5	17.0	37.1	47.7	54.3	62.3	72.4	68.2	58.7	46.4	37.9	25.0	46.6
1990	33.8	30.4	35.5	45.6	52.6	66.3	70.2	68.1	61.3	45.1	36.3	16.7	46.8
1991	19.0	33.8	35.3	39.8	50.6	62.0	68.2	66.7	55.4	41.4	31.7	30.2	44.5

Appendix 2.1.4.B. Temperature data - average temperatures - Glenrock 5 ESE station

ID: 483950
Latitude: 42.83 degrees
Longitude: -105.79 degrees
Elevation: 4948 feet
Station period of record: 07/01/1941-06/28/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1992	32.5	37.5	42.0	50.8	58.5	64.1	68.0	67.9	61.1	50.9	31.6	24.2	49.1
1993	24.1	20.3	37.9	44.1	56.2	60.5	65.9	66.4	56.9	46.5	29.7	31.4	45.0
1994	30.2	26.5	42.5	47.2	62.1	69.6	71.9	72.4	63.4	47.2	34.8	34.3	50.2
1995	30.2	33.4	39.6	44.1	51.4	62.9	71.8	75.3	60.6	47.3	40.6	31.3	49.0
1996	25.3a	33.6	34.0	48.2	54.2	68.2	73.3	71.6	60.3	47.8	36.3	30.6	48.6
1997	27.1	29.4	41.7	40.3	56.3	67.3	71.8	69.9	62.9	50.3	34.1	25.8	48.1
1998	28.3	33.5	33.8	45.2	57.5	59.4	73.6	70.9	66.4	47.0	42.6	29.8	49.0
1999	30.1	36.8	40.1c	41.4a	53.2	62.2b	73.1b	71.5b	55.7c	49.0b	45.9b	31.9c	49.3
2000	30.4	35.5b	-999e	47.2a	56.8a	63.5b	-999d	-999f	58.1b	-999j	21.9b	22.3c	-999d
2001	-999e	22.4c	-999f	-999p	-999m	-999n	-999l	-999g	60.5c	-999k	38.0a	27.2	-999h
2002	25.1a	28.5	25.7	42.8	49.9	-999i	71.9	65.3	58.0	37.5	32.1	29.2	42.4a
2003	30.7	-999f	-999g	-999j	-999o	-999s	-999j	-999l	-999l	-999i	-999i	-999g	-999k
2004	-999l	-999k	-999p	-999l	-999r	-999l	-999z	-999z	-999z	-999z	-999z	-999z	-999l

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Glenrock 5 ESE station

ID: 483950
Latitude: 42.83 degrees
Longitude: -105.79 degrees
Elevation: 4948 feet
Station period of record: 07/01/1941-06/28/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1941	-999z	-999z	-999z	-999z	-999z	-999z	86.8	84.5	70.4	57.7	50.5	40.2	-999f
1942	35.1	35.5	45.6	60.5	63.5	77.5	90.6	87.5	73.2a	62.3	51.2	43.0	60.5
1943	40.6a	48.1a	44.4a	66.2	64.9	77.3	90.4	89.6	77.3	66.0	49.7	43.4	63.2
1944	36.8	39.7	40.1	56.4	70.3	75.9	86.2	88.2	78.1	66.6	47.2	39.6	60.4
1945	40.3	39.8	48.6	50.6	67.6	70.8	86.7	86.2	-999l	67.0	49.6	38.3	58.7a
1946	44.1	45.2	55.2	68.5	60.9	79.1	89.8	86.9	77.5	56.5	49.2a	47.0	63.3
1947	40.1	38.9	46.0	57.1	70.2	72.1	89.3	89.6	82.9	71.3	40.2	40.7	61.5
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	88.8	82.9	65.5	43.4	37.4	-999g
1949	23.0	37.9c	49.3	65.2	69.0	72.7	87.5c	88.9	77.2	-999e	62.3b	-999f	63.3b
1950	34.2b	49.0a	47.5a	58.1	61.5c	-999n	83.4c	85.7	72.0a	71.7	49.7a	45.4c	59.8a
1951	35.5	-999d	47.9	54.9	68.0c	72.6a	88.2a	88.1b	72.3b	57.1b	48.5a	35.5b	60.8a
1952	38.8	41.8	40.6	65.1c	69.5	83.8	88.4	-999d	84.3	70.6a	45.4	43.3	61.1a
1953	47.7b	40.7a	55.3b	55.5	64.7	84.7a	91.8	89.5	83.8	69.4	56.0	40.0	64.9
1954	45.2	52.7	45.1	64.7	70.2a	81.4	95.2	88.9	80.1	63.1	56.9a	45.0	65.7
1955	36.8	35.3	42.5	60.6	71.8	73.8	91.1	89.5	77.0	69.4a	-999g	41.7	62.7a
1956	40.8	39.4	49.9a	55.6	72.3a	88.5c	89.3a	84.0	81.3	67.7	41.3	-999d	64.5a
1957	29.8	-999z	-999z	55.8	64.5	77.2	90.4	88.6	74.3	61.0	42.1	47.2	63.1b
1958	43.3	43.5a	41.3	54.3	76.0	80.7	84.0	90.2	-999e	68.2	49.3	42.0	61.2a
1959	39.5	37.9	46.0	58.4	66.7	85.2	89.2	88.3	72.7a	60.5	47.1	46.1	61.5
1960	35.1b	31.5a	45.8a	62.2	70.8	82.4	-999g	87.5	78.0b	66.0c	46.2a	39.5	58.6a
1961	42.8	43.5	49.8	57.3	68.9	83.2	88.2	89.2	67.7	60.0	44.0a	35.5	60.9
1962	30.6	39.5	-999z	63.0	69.8	75.6	83.9	87.0	77.6	67.1	55.2	44.2	63.0a
1963	29.3	47.3	49.4a	-999z	72.5	80.9	91.3	87.9	81.7	72.5	55.2	40.2	64.4a
1964	38.0	34.4a	41.1	55.6	-999d	77.6a	93.6	85.6	77.4	67.5	46.8	38.9	59.7a
1965	43.6	38.9	34.9b	60.4	65.2	75.6a	86.2	85.1	63.4	70.5	-999y	43.7	60.7a
1966	36.7	37.7	54.3	56.6	77.3	80.4	94.0	86.0a	77.8	62.3	50.8	40.3	62.8
1967	41.0	42.2	53.9	61.4	63.5	73.3	87.8	88.5b	77.3	66.3	46.8	33.7	61.3
1968	40.1	44.7	51.6	55.5	66.0	80.8a	88.9	82.8	77.0	66.0	47.7	35.5	61.4
1969	42.3	42.2	42.0	64.7	75.3	74.3a	92.2	92.5	83.0	52.7	50.1	41.7	62.8
1970	38.1	48.9	43.3	52.8	72.9	82.3	91.6	93.5	75.3	58.1	47.8	41.9	62.2
1971	39.9	39.4	47.0	57.5	67.3	84.7	89.4	89.0	72.9	58.7	45.7	39.4b	60.9
1972	33.5	44.2	-999e	60.1	70.2a	83.1	89.1a	87.2	77.6	63.6c	-999f	32.9	64.2b
1973	-999d	43.7a	48.4	49.6	68.0b	83.7	88.4	90.5	72.3	68.2	47.5	43.2	64.0a
1974	33.3	42.0	50.7	58.2	71.1	83.6	90.8	86.1	75.6	66.0	50.6	37.6	62.1
1975	36.0	37.3	44.2b	52.8	67.6	78.3	91.2a	-999h	76.4	67.5a	47.9	42.5	58.3a
1976	36.5	44.3	47.4	59.2	71.9	77.8	-999z	86.9	78.5b	60.2	47.9	43.0	59.4a
1977	34.7	47.1	46.7	61.5	70.0	85.8	88.6	84.9	80.7	66.8	47.2a	40.2	62.9
1978	31.7	33.4	53.0	59.2	64.4	80.8	88.2	83.4	78.7	66.4	40.7	28.4	59.0
1979	-999z	40.6a	50.1	60.7	66.8	81.5	90.3	83.1	82.3	64.5	39.5	42.6	63.8a
1980	30.9	37.1	43.3	58.9	64.3	83.1	92.1	86.8	79.3a	62.7	47.1	48.7	61.2
1981	45.2	45.5	52.2	65.8	64.3	82.9	90.2	86.7	80.2	58.1	52.8	42.1	63.8
1982	36.2	41.6	50.1	56.8	65.6	72.5	88.5	91.2	72.5	58.3	44.2	36.6	59.5
1983	43.2	45.5	47.2	50.7	64.9	77.6	90.5c	-999n	78.4	66.2	45.1	22.4	57.4a
1984	35.7	40.3	45.5	51.6	70.5	-999p	-999l	87.7	-999k	57.1	49.3	37.1	52.8c
1985	29.7	-999n	-999z	62.4	71.4	79.1	90.9	88.2	67.4	59.1	31.1	29.8	60.9b
1986	41.6	41.9	59.4	59.4	70.0a	87.2	86.8	88.2	70.0	61.5	47.0a	41.2	62.9
1987	38.1	-999j	46.9	69.5a	74.4	84.2	90.0	-999m	-999i	66.2	50.4a	37.4	61.9c
1988	34.6	42.9	46.9	66.7	74.9	92.2	95.8	92.0	79.8	69.0	48.1	41.3	65.3
1989	45.2	27.8	49.4	62.4	67.9	77.7	89.4	83.3	74.6	59.6	47.6	35.3	60.0
1990	42.3	41.5	46.9	58.5	66.2	83.4	85.0	83.9	76.8	58.4	47.0	27.5	59.8
1991	30	45.5	47.3	51.2	61.8	75.2	83.8	81.5	70.1	55.7	40.6	40.4	56.9

Appendix 2.1.4.B. Temperature data - maximum temperatures - Glenrock 5 ESE station

ID: 483950
Latitude: 42.83 degrees
Longitude: -105.79 degrees
Elevation: 4948 feet
Station period of record: 07/01/1941-06/28/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1992	43.3	50.7	55.7	66.0	74.2	78.5	82.1	83.0	79.0	66.0	42.1	34.6	63.0
1993	33.8	33.3	48.9	57.4	70.3	74.6	80.3	81.8	71.7	60.7	40.2	40.0	57.8
1994	40.7	37.8	54.3	60.6	77.0	86.0	88.5	87.5	79.7	60.4	45.3	44.1	63.5
1995	40.1	44.7	51.2	55.5	62.1	76.9	88.0	91.5	75.2	60.4	51.5	43.1	61.7
1996	37.0a	45.6	46.8	61.8	66.0	84.6	89.7	89.0	75.9	62.9	48.4	40.6	62.4
1997	36.4	39.2	54.9	53.3	71.0	79.9	87.1	83.8	76.8	64.4	45.0	35.3	60.6
1998	37.9	41.9	45.2	57.7	71.8	72.3	88.6	86.9	81.8	58.5	50.1	39.5	61.0
1999	39.9	46.2	54.1	51.4	66.3	76.1	89.3	86.1	71.0	65.3b	59.1	41.2	62.2
2000	40.0	44.9	49.0	61.3	71.6	79.9	90.4	88.2	74.4	-999j	31.7a	33.1	60.4a
2001	33.7	31.4	45.7	-999p	-999m	-999l	-999l	86.7	77.1	-999k	50.1	37.0	-999e
2002	35.9	39.6	37.3	56.5	65.4	-999i	88.2	82.0	72.3	50.7	41.8	38.6	55.3a
2003	42.0	-999f	-999g	-999j	-999o	-999r	-999j	-999l	-999l	-999i	-999i	-999f	-999k
2004	-999l	-999j	-999p	-999l	-999r	-999l	-999z	-999z	-999z	-999z	-999z	-999z	-999l

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Glenrock 5 ESE station

ID: 481570
Latitude: 42.90 degrees
Longitude: -106.46 degrees
Elevation: 5338 feet
Station period of record: 03/17/1950-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1941	-999z	-999z	-999z	-999z	-999z	-999z	54.1	54.7	39.0	29.2	25.1a	14.8	-999f
1942	5.6	7.3a	17.4	32.5	36.5a	47.4	54.2	53.3	41.2b	31.6a	20.4	16.5	30.3
1943	9.9a	18.5	12.1	35.7	35.1	45.7	52.0	53.7	38.9	30.5	22.1	14.1	30.7
1944	8.3	12.2	14.6	28.9	39.2	44.7	51.6	51.8	41.1	32.1	21.3	7.6	29.5
1945	14.3	15.7	25.1	24.7	39.0	45.2	52.8	52.1	-999r	34.2	26.5	13.6	31.2a
1946	17.3	16.2	26.4	34.7	36.4	48.6	55.1	50.9	41.8	32.5a	22.2c	20.4b	33.5
1947	12.9	11.1	18.0	29.0	39.3	45.5	55.0	54.4	43.3	37.7	15.3	17.5	31.6
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	52.2	47.0	28.9	20.5	13.1	-999g
1949	-3.5	13.5c	23.3	32.6	41.6	47.9	54.7c	53.2	40.9	-999e	27.1a	-999e	33.1b
1950	4.2a	20.0a	18.5a	29.3	34.1	-999d	-999j	-999d	42.8a	34.1	25.4	-999e	-999d
1951	10.0	-999d	17.9	26.5	40.2a	42.5c	-999d	51.0c	-999d	33.5c	23.9a	8.9c	28.3c
1952	15.5	16.0	16.0	32.9a	42.9	50.1	51.7	-999d	-999h	29.1c	15.3	22.0a	29.2b
1953	25.7	15.9	25.2b	27.1a	36.3a	49.9b	58.1	55.5	44.6	33.8	27.7	14.9	34.6
1954	16.5	23.8	15.9	32.4	41.6	50.8	60.2	52.8	44.9	32.4	25.5	19.5a	34.7
1955	10.6	10.0	15.5	30.6	41.0	47.8	57.3a	56.6	44.5	33.3b	17.2	18.4	31.9
1956	15.4	13.7	19.6	27.2	42.9a	49.9c	54.2a	50.9	40.0	33.1	20.3	-999d	33.4a
1957	5.0	-999z	-999z	27.5	39.3	47.2	54.9	55.5	40.0	35.9	22.4	25.7	35.3b
1958	17.5	17.7a	20.5	30.4	44.0	50.2	52.0	54.5	-999f	33.1	25.4a	19.1	33.1a
1959	16.1	17.8	24.3	-999z	39.2	50.1	50.8	49.9	41.7b	31.6a	17.3a	18.5	32.5a
1960	13.8b	10.8a	21.0b	33.2	38.9	49.8a	-999g	51.7	45.1b	35.6c	25.5a	14.2	30.9a
1961	21.7	22.1	27.9	32.3	43.2	50.7	53.6	57.7	41.2a	30.6a	20.8a	14.2	34.7
1962	8.5	21.0	-999z	33.6	42.7	48.7	55.4	51.8	43.2	40.1	30.8	19.5	35.9a
1963	4.9	26.0	29.8a	-999z	42.2	50.9	57.3	57.0	49.0	41.4	28.7	16.4	36.7a
1964	18.4	16.9a	18.9	32.0	-999d	49.0a	58.8	52.5	41.2	32.3	24.7a	19.6	33.1a
1965	23.8	15.4	11.2b	-999g	41.8	51.3a	56.5	52.0	38.4	37.0	29.5	22.7	34.5a
1966	14.3	17.0	26.4	28.9	40.6	49.5	60.2	53.2a	49.3	34.7	28.1	19.8	35.2
1967	21.6	21.0	29.8	32.4	41.0	48.3	55.9	54.5b	47.8	38.2	22.4	11.8	35.4
1968	14.4	24.1	27.0	29.4	37.9	49.6a	55.8	52.7	43.3	36.7	25.1	14.7	34.2
1969	16.0	19.0	20.2	37.2	43.2	48.2a	57.7	57.7	50.1	31.8	28.4	20.0	35.8
1970	16.1	22.5	20.2	29.1	39.9	50.0	56.2	56.7	42.3	30.0	26.7	16.1	33.8
1971	18.0	15.9	21.4	32.4	38.1	49.0	51.7	53.6	38.8	30.5	25.2	20.9b	33.0
1972	10.1	19.4	26.7c	30.9	40.3a	48.8	48.7a	51.8	38.1	-999d	-999f	6.3	32.1b
1973	-999d	18.1a	19.0	26.3	36.2b	48.5	53.1	54.1	40.9	34.5	22.5	21.2	34.0a
1974	11.6	22.8	26.7	33.0	40.6	49.7	56.7	49.6	38.6	34.8	28.9	16.5	34.1
1975	14.9	14.7	23.1b	28.9	40.4	48.6	61.2a	-999h	40.6	35.5a	24.6	21.9	32.2a
1976	16.2	25.1	21.3	34.6	41.7	47.7	-999z	54.0	45.4b	31.0	22.9	21.7	32.9a
1977	10.9	23.1	25.0	34.5	43.9	54.2	59.2	53.6	46.4	37.7	24.7a	19.4	36.0
1978	10.3	14.6	27.5	35.2	39.5	49.9	54.6	51.4	43.8	33.5	18.5	7.9	32.2
1979	-999z	22.3a	28.2	33.0	39.9	49.8	56.9	55.5	46.0	37.4	19.1	19.8c	37.1a
1980	9.6	17.1a	22.4	32.3	38.7	48.2	56.6	53.5	44.4a	32.2	26.2	26.0	33.9
1981	19.4	19.8	26.5	36.7	42.0	51.3	57.8a	54.5	45.8	34.7	28.4	21.1	36.5
1982	12.5	18.1	25.3	29.3	41.0	49.4	56.3	59.7	44.7	33.6	26.2	20.5	34.7
1983	22.5	26.4	28.0	28.8	38.0	48.8	-999d	-999n	43.9	35.8	24.0	4.2	30.0b
1984	17.5	22.8	26.8	27.5	39.2	-999r	-999q	57.8	-999i	32.6a	26.5	16.8	29.7c
1985	10.0	-999m	-999z	32.5	41.4	45.6b	58.0	51.1	42.0	31.1	8.3	11.5a	33.1b
1986	-999i	21.9a	34.2	34.6	39.8	53.3	53.5	54.5	46.7	37.3	24.5a	18.9	38.1a
1987	17.8	-999j	25.7	36.0a	46.2	50.0	56.3	-999l	-999j	33.2	24.1a	18.8a	34.2c
1988	13.6	17.5	25.8	31.8	41.5	58.3	56.1	53.5	42.9	35.1	25.8	20.5	35.2
1989	19.8	6.3	24.8	33.0	40.8	46.8	55.4	53.1	42.7	33.1	28.2	14.6	33.2
1990	25.2	19.2	24.1	32.6	39.1	49.2	55.4	52.4	45.7	31.9	25.5	5.9	33.8
1991	7.9	22.2	23.4	28.4	39.3	48.7	52.6	51.8	40.7	27.0	22.7	20.0	32.1
1992	21.8	24.2	28.3	35.6	42.8	49.6	53.9	52.8	43.1	35.7	21.1	13.8	35.2

Appendix 2.1.4.B. Temperature data - minimum temperatures - Glenrock 5 ESE station

ID: 481570
Latitude: 42.90 degrees
Longitude: -106.46 degrees
Elevation: 5338 feet
Station period of record: 03/17/1950-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1993	14.3	7.3	26.9	30.8	42.2	46.3	51.5	50.9	42.2	32.3	19.1	22.8	32.2
1994	19.6	15.3	30.6	33.8	47.2	53.1	55.4	57.3	47.1	34.1	24.2	24.4	36.8
1995	20.2	22.0	28.0	32.6	40.6	48.8	55.5	59.2	45.9	34.3	29.8	19.5	36.3
1996	13.0	21.7	21.2	34.5	42.5	51.8	57.0	54.2	44.7	32.6	24.3	20.7	34.8
1997	17.8	19.6	28.6	27.2	41.6	54.7	56.5	56.0	49.0	36.2	23.2	16.4	35.6
1998	18.7	25.0	22.4	32.7	43.3	46.5	58.6	54.8	50.9	35.5	35.2	20.1	37.0
1999	20.3	27.5	26.1c	31.0a	40.1	48.8b	57.1b	57.1b	40.6c	32.8b	32.7b	23.1c	36.4
2000	20.7	26.1b	-999e	33.2a	42.2a	47.5b	-999d	-999f	42.4b	-999i	12.4a	11.3c	-999d
2001	-999e	13.2c	-999f	-999p	-999l	-999m	-999l	-999g	44.4c	-999j	25.5a	17.5	-999h
2002	14.6a	17.4	14.0	29.1	34.5	-999i	55.6	48.7	43.6	24.3	22.3	19.7	29.4a
2003	19.4	-999f	-999g	-999j	-999n	-999s	-999j	-999l	-999l	-999i	-999i	-999g	-999k
2004	-999l	-999j	-999p	-999l	-999r	-999l	-999z	-999z	-999z	-999z	-999z	-999z	-999l

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - LaGrange station

ID: 485260
Latitude: 41.64 degrees
Longitude: -104.17 degrees
Elevation: 4590 feet
Station period of record: 08/01/1948-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	71.6	66.0	48.7	33.6a	27.1	-999g
1949	12.9	26.8	35.9	49.0	56.6	63.3	73.3	71.5	60.9	48.5	45.4	30.7	47.9
1950	25.4	34.6	34.5	43.1	49.6	64.2	67.7	67.3	59.1	55.0	37.0	33.3	47.6
1951	24.8	31.9	31.9	40.7	54.7	57.6	70.4	68.4	56.8	48.1	35.0	24.3	45.4
1952	28.0	30.6	30.4	46.2	54.7	69.1	70.5	71.2	63.0	49.2	29.8	26.2	47.4
1953	35.5	27.9	40.0	39.2	51.1	66.7	72.5	69.9	62.2	50.3	38.8	28.8	48.6
1954	31.0	38.7	29.3	49.5	54.2	65.5	75.7	70.4	63.2	48.0	40.9	32.9	49.9
1955	23.9	23.9	31.8	45.2	56.9	61.1	72.8	72.8	61.4	51.2	33.2	30.8	47.1
1956	30.5	27.5	36.7	41.9	58.0	70.6	70.9	67.5	62.2	52.1	33.4	35.8	48.9
1957	21.2	36.9	36.5	41.6	52.2	63.7	72.4	70.7	57.2	49.2	34.6	37.9	47.8
1958	30.5	32.4	29.0	42.4	60.1	65.2	67.2	71.8	62.3	52.5c	38.5	30.7	48.5
1959	27.7	27.7	35.2	44.6	53.5	68.9	71.3	72.2	58.3	45.5	33.6	33.4	47.7
1960	26.1	23.8	35.5	47.9	56.1	65.4	73.0	71.2	62.0	49.6	37.9	25.9	47.9
1961	30.8	34.5	37.4	43.3	54.1	65.8	71.7	72.5	55.6	47.8	34.9	26.3	47.9
1962	21.0	29.8	33.5	49.1	57.8	63.2	69.0	69.8	60.7	51.8	41.6	32.2	48.3
1963	17.8	35.1	37.1	46.8	57.8	66.9	74.9	72.0	65.6	56.0	39.8a	27.2	49.7
1964	28.1	26.3	31.1	44.0	56.9	64.3	76.4	68.9	59.9	49.4	36.4	28.6	47.5
1965	33.0	27.0	25.1	48.5	55.2	63.4	71.2	67.7	53.2	52.9	42.6	32.5	47.7
1966	24.8	26.3	40.0	41.9	58.2	65.2	76.6	68.5	61.9	48.0	39.8	29.2	48.4
1967	33.5	33.6	42.0	47.1	51.5	61.4	70.8	68.6	61.9	51.0	34.9	21.4	48.1
1968	26.9	32.5	40.2	41.0	51.0	64.7	70.3	66.1	57.4	49.6	34.3	24.6	46.5
1969	27.4	31.4	29.7	49.1	56.9	57.9	72.2	73.1	62.2	38.2	36.6	31.9	47.2
1970	26.9	35.4	30.6	39.7	55.6	62.6	72.7	73.2	57.5	43.3	35.7	29.4	46.9
1971	29.4	27.6	33.4	44.7	52.5	66.3	68.8	72.3	56.0	45.9	35.2	27.9	46.7
1972	24.9	32.1	42.1	44.4	54.1	66.0	68.9	68.5	58.9	47.0	30.6	21.2	46.6
1973	21.8	27.3	34.0	39.7	51.5	65.1	69.5	70.7	55.5	50.4	34.4	28.8	45.7
1974	21.2	32.6	37.0	44.3	55.9	66.8	73.0	66.0	54.1	49.1	34.9	25.9	46.7
1975	26.3	23.8	31.2	39.6	51.8a	61.6	72.9	69.2	54.9	45.3	30.8	28.7	44.7
1976	20.1	32.3	29.6	42.3	50.3	59.4	-999z	65.4	56.9a	39.7	28.9	27.6	41.1a
1977	15.1	30.9	30.8	44.4	55.0	68.0	71.4	-999z	62.5	49.2	35.2	30.1	44.8a
1978	19.8	23.2	38.1	46.8	51.9	63.9a	72.0	67.1	61.7	-999z	-999h	20.9	46.5b
1979	13.9	33.0	40.4a	50.0	-999u	-999z	-999z	68.3b	62.5	-999e	27.6	30.9a	-999d
1980	20.5	27.4	32.4c	-999w	53.7	-999l	72.2	65.9	60.1	45.7a	35.8c	-999k	46.0c
1981	-999d	31.1a	38.3a	51.4	-999d	65.3	71.4	68.2a	62.2	47.4	40.6	32.0c	50.8b
1982	22.9	27.8	37.2	42.8	53.4	59.8	70.2	70.9	58.9	45.5	30.7	29.7	45.8
1983	33.5	35.2	35.2	39.3	50.1	60.8	71.0	74.0	60.1	49.6	35.0	12.9a	46.4
1984	26.2	31.2	35.5	38.9	56.5	63.0	71.3	70.3	54.9	43.3	37.7	27.1	46.3
1985	21.0	24.5	38.3	49.3	57.9	63.6	72.1	67.8	55.2	45.2	25.5	23.5	45.3
1986	34.6	29.4a	43.7	45.2	51.7	66.6a	69.4	68.5	56.0	46.3a	34.3	27.0a	47.7
1987	28.6	32.9	32.8	48.1b	58.3	66.6	72.0	69.0a	59.6	51.5	38.4	28.0a	48.8
1988	20.1	-999j	35.2a	47.4	-999z	71.3	72.6	72.0	60.4	50.4	37.7	29.9	49.7b
1989	33.5	20.2	38.0	47.7	56.6	64.1	73.7	69.0	60.0	49.5	40.9	24.7	48.1
1990	34.7	30.2	36.4	47.0	53.5	68.0	68.6	68.9	64.4	50.3	41.1	22.6	48.8
1991	25.9	38.7	39.9	45.7	57.5	66.3	70.5	71.4	61.0	48.0	35.2	32.5	49.4
1992	31.6	38.9	41.6	50.3	59.4	64.9	68.2	67.0	63.3	51.9	31.6	21.9	49.2
1993	23.7c	22.1	38.7	46.3	57.5	62.5	69.4	68.8	57.8	47.3	29.7	31.2	46.3
1994	31.6	27.7	41.9	48.0	61.0	68.8	70.3	71.5	63.2	49.9	35.8	32.3	50.2
1995	29.3	35.2	38.7	43.3	50.1	62.5	70.6	74.6	60.6	49.1	41.2	31.8	48.9
1996	25.7	34.6	34.7	48.6	55.7	67.7	72.6	70.7	60.3	50.4	37.3	32.1	49.2
1997	28.2	31.3	42.4	41.3	56.6	66.8	71.5a	69.1	63.2	50.2	36.0	30.3	48.9
1998	32.5	36.0	36.4	46.3	58.0	61.1	73.1	65.9	61.1	42.9	37.3	22.6	47.7

Appendix 2.1.4.B. Temperature data - average temperatures - LaGrange station

ID: 485260
Latitude: 41.64 degrees
Longitude: -104.17 degrees
Elevation: 4590 feet
Station period of record: 08/01/1948-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1999	28.4	33.6	38.9	44.3a	55.8	64.7	73.8a	71.9	59.1	52.3	46.0	34.3	50.2
2000	33.4	38.7	41.5	49.2	59.9	66.2	74.6	74.3a	62.8	50.7	27.9	26.4	50.5
2001	30.2	29.4	39.4	48.8	56.6	67.5	75.5	72.5	64.4	50.3	40.9	31.1	50.6
2002	31.4	33.3	32.7	50.0	55.6	71.1	76.6	71.0	-999z	43.5	36.7	34.3	48.7a
2003	36.7	27.8	40.3	50.3	57.5	62.8	76.4	73.8	60.0	53.7	36.0	32.8	50.7
2004	32.2	31.7	44.9	49.9	58.3	63.9	71.8	-999z	-999z	-999z	-999z	-999z	-999e

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - LaGrange station

ID: 485260
Latitude: 41.64 degrees
Longitude: -104.17 degrees
Elevation: 4590 feet
Station period of record: 08/01/1948-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	88.9	83.5	67.5	45.7a	39.8	-999g
1949	25.3	40.6	48.9	65.4	70.6	76.9	90.3	89.2	79.5	63.9	62.8	46.2	63.3
1950	42.5	51.1	49.3	58.9	64.9	82.2	83.1	86.0	73.3	74.3	52.4	47.8	63.8
1951	39.1	48.1	47.7	56.3	69.1	70.9	85.8	85.0	72.0	62.8	51.1	37.4	60.4
1952	41.8	44.2	41.9	63.1	69.1	86.8	88.7	88.1	83.3	69.4	45.2	37.9	63.3
1953	49.0	40.8	56.5	54.5	65.9	83.6	89.0	86.5	81.9	68.8	54.8	42.5	64.5
1954	47.3	57.9	44.4	67.0	68.7	81.9	93.3	87.2	80.7	63.7	57.6	47.1	66.4
1955	37.1	37.4	46.5	62.4	72.4	74.0	90.1	88.1	78.4	68.5	45.7	43.1	62.0
1956	43.1	40.6	51.7	58.2	73.0	88.3	86.6	83.4	82.0	70.8	46.1	47.5	64.3
1957	35.3	52.5	50.3	53.2	64.1	78.8	89.1	85.3	74.4	60.2	45.8	51.5	61.7
1958	44.8	46.0	40.3	55.2	75.3	80.4	82.0	89.8	80.2	69.3	54.2	43.7	63.4
1959	42.1	39.6	47.4	59.2	67.0	86.0	90.0	88.5	73.7	60.5	49.3	48.1	62.6
1960	38.9	33.6	48.5	63.1	72.2	81.0	91.1	89.4	79.2	65.7	52.3	40.1	62.9
1961	44.3	48.2	48.9	57.5	68.1	82.5	88.9	89.3	70.4	64.2	49.1	39.0	62.5
1962	34.5	43.0	46.4	65.8	73.5	77.5	84.8	88.9	78.8	68.4	56.7	46.4	63.7
1963	31.5	48.6	51.1	61.6	75.0	83.0	92.1	87.7	82.5	73.6	57.0	42.3	65.5
1964	41.7	39.0	44.1	57.5	71.8	80.4	94.4	86.2	79.1	68.6	51.2	41.5	63.0
1965	46.7	40.5	38.3	63.6	69.7	76.2	86.5	85.7	67.2	70.6	57.3	46.8	62.4
1966	40.3	39.3	56.7	58.2	77.2	81.5	93.3	85.2	77.8	64.8	54.8	42.2	64.3
1967	46.6	47.0	58.1	63.0	63.6	74.3	86.9	86.7	78.5	69.2	50.7	34.4	63.2
1968	41.1	45.2	54.7	55.9	65.3	81.0	88.0	82.7	75.9	66.6	48.4	39.3	62.0
1969	41.5	45.4	42.1	63.9	73.9	72.2	91.2	93.4	82.1	49.1	50.0	45.4	62.5
1970	39.3	49.6	42.8	52.6	72.8	78.6	89.6	90.8	74.6	58.3	48.5	42.8	61.7
1971	40.6	39.1	46.2	59.3	66.1	82.3	85.5	91.3	71.3	60.6	49.2	42.0	61.1
1972	37.6	46.3	57.6	58.3	69.4	81.8	85.4	84.9	77.1	62.3	41.5	32.2	61.2
1973	33.7	40.7	44.7	52.2	68.1	82.3	85.7	89.5	69.6	66.6	45.8	40.9	60.0
1974	33.0	44.4	51.0	58.3	73.4	84.6	92.0	84.2	72.8	66.5	50.0	40.7	62.6
1975	38.8	37.6	44.7	55.5	66.2a	78.9	91.7	89.3	73.6	62.2	44.7	40.2	60.3
1976	31.6	43.2	44.5	54.9	64.7	75.0	-999z	83.3	73.9a	58.2	45.0	42.4	56.1a
1977	29.5	44.5	43.3	58.4	69.8	83.2	87.1	-999z	82.0	67.2	49.0	40.9	59.5a
1978	30.9	33.9	51.2	60.5	65.6	81.6a	90.4	85.7	81.5	-999z	-999h	33.3	61.4b
1979	27.2	45.2	51.7a	63.9	-999u	-999z	-999z	83.0b	81.2	-999e	40.7	44.2a	-999d
1980	34.1	40.2	46.2	60.1	67.6	85.5a	91.1	85.4	78.8	63.5a	49.7c	-999k	63.8a
1981	48.4b	47.3a	53.6a	67.3	-999d	82.7	88.2	86.0a	81.1	62.6	58.1	48.1c	65.8a
1982	38.5	44.1	52.1	60.5	68.9	74.9	88.6	87.4	74.5	59.7	44.9	42.0	61.4
1983	46.4	49.7	46.9	52.9	65.9	75.3	89.3	90.7	79.9	68.1	50.5	26.9	61.9
1984	39.4	44.9	48.4	51.6	73.7	80.3	88.4	87.5	72.2	60.1	54.6	43.4	62.0
1985	34.6	37.9	54.7	65.9	75.2	81.3	89.5	87.3	71.8	62.7	39.5	36.7	61.4
1986	49.1	44.9	60.8	59.9	69.0	84.5a	88.3	86.7	71.5	61.5a	48.9	42.9	64.0
1987	42.6	46.1	46.4	67.0b	74.0	83.5	90.5	85.8a	81.6	74.7	52.3	41.0	65.4
1988	34.0	48.1a	49.4	66.3	-999z	90.3	89.7	90.0	78.2	68.0	51.5	44.6	64.6a
1989	51.1	32.8	54.1	64.3	73.6	80.2	91.5	85.2	77.1	65.8	55.0	37.8	64.0
1990	48.2	43.3	48.3	61.7	68.0	85.1	84.0	86.3	81.4	68.0	54.8	37.5	63.9
1991	38.9	53.4	54.5	59.9	72.9	81.0	87.2	88.3	77.2	65.5	46.7	46.7	64.4
1992	43.7	53.7	57.1	67.9	76.8	80.6	84.5	83.1	81.7	68.9	43.5	33.8	64.6
1993	37.0c	35.0	50.7	59.5	72.8	77.5	85.0	84.2	74.1	62.5	42.4	40.8	60.1
1994	43.2	40.6	57.5	63.2	78.4	86.5	86.6	88.5	81.4	65.2	49.2	44.8	65.4
1995	41.6	48.4	54.8	57.4	60.7	77.1	87.9	93.2	76.1	65.0	55.3	45.2	63.6
1996	39.3	49.6	48.9	64.1	68.2	84.2	88.8	86.3	75.9	66.2	51.2	45.0	64.0
1997	39.9	42.5	58.4	54.7	72.4	81.1	88.0	83.7	77.5	66.2	48.8	40.7	62.8
1998	45.7	47.7	49.3	62.1	74.1	76.4	88.1	82.1	78.1	55.8	50.1	36.4	62.2

Appendix 2.1.4.B. Temperature data - maximum temperatures - LaGrange station

ID: 485260
Latitude: 41.64 degrees
Longitude: -104.17 degrees
Elevation: 4590 feet
Station period of record: 08/01/1948-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1999	40.3	47.0	55.5	57.6	70.3	80.5	90.3	87.7	75.8	71.3	64.5	46.5	65.6
2000	45.1	52.0	55.5	66.7	76.5	83.4	91.8	91.0	79.3	65.4	39.6	39.4	65.5
2001	41.7	41.2	52.0	62.2	71.2	84.5	91.0	89.2	80.8	65.5	57.3	43.5	65.0
2002	44.1	48.6	47.2	66.8	73.3	89.3	93.7	88.3	-999z	57.8	48.5	47.0	64.1a
2003	51.3	39.2	53.8	64.4	72.5	77.0	94.1	90.1	77.4	72.3	48.1	44.9	65.4
2004	45.5	44.8	61.4	65.2	74.5	80.2	88.2	-999z	-999z	-999z	-999z	-999z	-999e

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - LaGrange station

ID: 485260
Latitude: 41.64 degrees
Longitude: -104.17 degrees
Elevation: 4590 feet
Station period of record: 08/01/1948-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	54.3	48.4	29.9	21.7	14.4	-999g
1949	0.4	13.0	22.8	32.7	42.5	49.8	56.3	53.7	42.2	33.0	28.0	15.2	32.5
1950	8.3	18.0	19.8	27.3	34.4	46.2	52.4	48.6	44.9	35.8	21.6	18.9	31.3
1951	10.5	15.8	16.1	25.1	40.3	44.2	55.0	51.8	41.5	33.4	18.9	11.1	30.3
1952	14.2	16.9	18.9	29.3	40.3	51.5	52.3	54.3	42.8	29.1	14.3	14.5	31.5
1953	21.9	15.0	23.6	23.9	36.3	49.7	56.0	53.3	42.5	31.8	22.8	15.1	32.7
1954	14.8	19.5	14.3	32.0	39.6	49.0	58.1	53.7	45.7	32.2	24.2	18.7	33.5
1955	10.7	10.5	17.1	28.0	41.5	48.2	55.5	57.5	44.4	34.0	20.8	18.5	32.2
1956	17.9	14.4	21.6	25.6	43.1	52.8	55.1	51.6	42.4	33.4	20.8	24.2	33.6
1957	7.2	21.2	22.6	30.0	40.3	48.5	55.6	56.1	40.0	38.2	23.5	24.4	34.0
1958	16.2	18.9	17.7	29.5	44.8	50.0	52.3	53.8	44.4	34.0c	22.8	17.8	33.5
1959	13.3	15.8	23.1	29.9	40.1	51.8	52.6	55.8	42.9	30.6	17.9	18.7	32.7
1960	13.4	14.1	22.6	32.6	40.1	49.8	54.9	53.0	44.7	33.5	23.4	11.7	32.8
1961	17.4	20.7	25.9	29.0	40.1	49.0	54.5	55.7	40.8	31.4	20.7	13.5	33.2
1962	7.5	16.6	20.7	32.3	42.1	48.9	53.3	50.8	42.7	35.2	26.5	17.9	32.9
1963	4.0	21.5	23.1	32.0	40.5	50.8	57.8	56.2	48.7	38.3	22.9a	12.0	34.0
1964	14.5	13.7	18.1	30.5	42.0	48.2	58.3	51.7	40.7	30.3	21.7	15.6	32.1
1965	19.4	13.6	11.9	33.3	40.7	50.6	56.0	49.7	39.2	35.3	27.9	18.3	33.0
1966	9.4	13.4	23.3	25.6	39.2	48.9	59.8	51.7	46.0	31.1	24.8	16.2	32.5
1967	20.5	20.1	25.9	31.1	39.4	48.4	54.8	50.5	45.2	32.9	19.2	8.4	33.0
1968	12.7	19.7	25.6	26.1	36.8	48.3	52.5	49.5	38.8	32.6	20.3	10.0	31.1
1969	13.3	17.4	17.4	34.4	40.0	43.6	53.2	52.8	42.2	27.3	23.2	18.4	31.9
1970	14.5	21.1	18.4	26.7	38.4	46.7	55.9	55.6	40.3	28.3	22.9	16.1	32.1
1971	18.1	16.0	20.6	30.2	38.8	50.3	52.1	53.2	40.6	31.2	21.1	13.8	32.2
1972	12.2	17.8	26.6	30.6	38.9	50.3	52.3	52.2	40.6	31.6	19.7	10.1	31.9
1973	9.9	13.9	23.3	27.3	35.0	47.9	53.3	52.0	41.4	34.2	23.1	16.6	31.5
1974	9.3	20.7	23.1	30.4	38.4	48.9	54.1	47.8	35.3	31.7	19.8	11.0	30.9
1975	13.9	10.0	17.8	23.7	37.2	44.4	54.1	49.1	36.2	28.3	16.9	17.3	29.1
1976	8.6	21.4	14.8	29.7	35.8	43.7	-999z	47.5	39.5	21.2	12.8	12.8	26.2a
1977	0.7	17.4	18.4	30.4	40.2	52.8	55.8	-999z	43.0	31.2	21.4	19.3	30.0a
1978	8.7	12.5	25.1	33.1	38.1	45.8	53.7	48.5	41.8	-999z	-999h	8.4	31.6b
1979	0.5	20.8	29.1a	36.0	-999t	-999z	-999z	53.6b	43.8	31.8	14.4	17.5a	27.5c
1980	6.8	14.6	18.4c	-999w	39.7	-999l	53.3	46.4	41.5	27.8a	21.8a	-999j	30.0c
1981	15.5c	14.9	23.0a	35.4	-999d	47.8	54.6	50.3a	43.2	32.2	23.0	15.9c	32.3a
1982	7.3	11.5	22.3	25.1	37.9	44.7	51.7	54.3	43.3	31.2	16.5	17.3	30.3
1983	20.7	20.8	23.5	25.7	34.3	46.3	52.8	57.2	40.2	31.1	19.5	-0.3a	31.0
1984	13.1	17.6	22.7	26.1	39.2	45.8	54.1	53.0	37.6	26.5	20.8	10.9	30.6
1985	7.4	11.1	21.9	32.7	40.5	45.9	54.6	48.3	38.6	27.6	11.5	10.3	29.2
1986	20.1	13.8a	26.7	30.4	34.5	48.3	50.5	50.4	40.5	30.9	19.7	11.3a	31.4
1987	14.6	19.8	19.2	28.8	42.6	49.8	53.5	52.3	37.5	28.4	24.5	15.2a	32.2
1988	6.3	-999i	20.5a	28.5	-999z	52.4	55.5	54.1	42.6	32.8	23.9	15.2	33.2b
1989	15.8	7.6	22.0	31.1	39.5	47.9	56.0	52.8	42.8	33.1	26.7	11.5	32.2
1990	21.3	17.2	24.5	32.2	39.0	51.0	53.3	51.6	47.4	32.5	27.5	7.7	33.8
1991	13.0	23.9	25.2	31.5	42.1	51.6	53.8	54.6	44.8	30.5	23.8	18.4	34.4
1992	19.5	24.1	26.2	32.7	42.1	49.2	52.0	50.9	45.0	34.8	19.7	10.0	33.9
1993	10.5	9.3	26.7	33.0	42.2	47.6	53.7	53.4	41.5	32.1	17.1	21.6	32.4
1994	20.0	14.8	26.3	32.8	43.6	51.1	53.9	54.4	45.0	34.6	22.4	19.7	34.9
1995	17.1	22.1	22.6	29.1	39.5	47.8	53.4	55.9	45.0	33.2	27.1	18.4	34.3
1996	12.1	19.5	20.5	33.0	43.2	51.1	56.5	55.0	44.6	34.7	23.5	19.3	34.4
1997	16.5	20.2	26.4	27.9	40.8	52.4	55.4a	54.5	48.8	34.3	23.3	20.0	35.0
1998	19.3	24.3	23.5	30.5	41.9	45.7	58.1	49.6	44.0	29.9	24.4	8.8	33.3
1999	16.6	20.2	22.4	31.0a	41.2	48.8	57.2a	56.0	42.3	33.4	27.4	22.2	34.9

Appendix 2.1.4.B. Temperature data - minimum temperatures - LaGrange station

ID: 485260
Latitude: 41.64 degrees
Longitude: -104.17 degrees
Elevation: 4590 feet
Station period of record: 08/01/1948-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
2000	21.6	25.5	27.6	31.7	43.3	49.0	57.5	57.6a	46.3	35.9	16.1	13.4	35.5
2001	18.7	17.6	26.8	35.3	42.1	50.4	60.1	55.9	48.0	35.1	24.5	18.8	36.1
2002	18.7	18.0	18.1	33.3	38.0	52.8	59.6	53.7	-999z	29.2	24.9	21.6	33.4a
2003	22.1	16.3	26.8	36.2	42.5	48.7	58.6	57.5	42.5	35.1	23.8	20.6	35.9
2004	18.9	18.7	28.5	34.6	42.2	47.5	55.5	-999z	-999z	-999z	-999z	-999z	-999e
Flags	0	0.0	0.0	0.0									

a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - Laramie FAA Airport station

ID: 485415
Latitude: 41.31 degrees
Longitude: -105.67 degrees
Elevation: 7266 feet
Station period of record: 08/01/1948-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	63.9	57.9	42.7	25.1	21.5	-999g
1949	8.2	19.4	30.4	40.9	48.8	56.8	64.1	63.3	55.0	40.8	40.7	22.9	40.9
1950	21.2	29.4	29.2a	37.5	42.9	56.3	60.8	59.7	52.5	49.8	32.5	29.2	41.7
1951	18.4	26.2	26.8	35.6	48.7	52.2	64.7	62.1	52.7	40.7	27.2	21.1	39.7
1952	21.5	22.8	23.9	39.3	48.9	61.8	63.6	62.9	56.1a	46.1	23.0	22.6	41.0
1953	29.9	21.0	33.7	34.1	43.5	59.3	66.2	62.1	56.5	44.4	34.5	21.1	42.2
1954	28.7	32.8	24.2	42.5	48.1	57.9	67.8	62.4	56.5	43.9	34.8	24.2	43.7
1955	20.4	18.1	24.7	37.6	47.7a	54.4	-999z	64.3	55.3	44.1	27.1	27.7	38.3a
1956	24.6	13.4	27.0	37.4a	50.7	61.8	62.2	59.4	56.0	45.0	24.4	22.3	40.4
1957	16.6	29.7	28.0	34.1	45.1	55.5	63.6	63.1	51.5	44.2	25.1a	28.9	40.4
1958	21.5	31.3	22.2	35.0	52.0	58.2	61.4	64.2	54.8	45.1	32.6	26.4	42.1
1959	21.6	23.6	26.9	37.3	46.5	60.6	63.5	63.0	50.9	39.5	30.0	27.8	40.9
1960	21.1	15.1	31.0	40.8	48.3	59.3	64.4	62.7	57.0	44.2	31.1	16.3	40.9
1961	19.4	25.1	28.5	35.7	49.1	58.6	62.8	63.0	47.9	40.9	25.5	19.9	39.7
1962	10.9	23.7	24.0	41.0	49.6	55.6	61.7	62.1	54.3	45.7	34.8	25.9	40.8
1963	12.4	27.6	28.7	38.4	50.2	58.3	66.0	62.5a	58.0	49.0	35.7	22.7	42.5
1964	18.0	14.4	20.9	35.3	48.6	55.3	-999z	60.5	53.1	43.5	29.8	21.5	36.4a
1965	25.6	19.8	18.7	40.4	45.4	55.6	63.3	59.7	45.7	46.6	36.2	25.3	40.2
1966	20.8	19.7	31.9	35.9	49.8	57.0	67.7	60.9	54.5	41.0	33.6	23.3	41.3
1967	23.0	23.1	33.9	38.0	45.0	53.7	63.3	60.7	53.2	43.6	28.7	14.4	40.0
1968	20.4	24.5	32.3	31.1	44.5	56.9	63.0	59.1	50.8	44.0	26.0	21.2	39.5
1969	27.4	23.2	19.3	41.9	51.4	52.4	65.9	65.8	57.1	31.6	28.7	25.2	40.8
1970	23.1	29.3	24.1	32.9	49.1	57.1	65.1	65.7	50.3	35.1	29.7	24.1	40.5
1971	24.8	21.3	27.8	37.6	45.7	58.8	62.6	63.3	49.4	40.3	30.9	22.4	40.4
1972	21.5	27.6	35.4	38.8	47.5	59.2	61.8	61.3	53.5	41.4	23.2	16.5	40.6
1973	13.7	16.5	24.7	30.8	46.1	57.2	61.5	63.6	51.5	45.0	29.5	21.8	38.5
1974	16.6	22.2	32.1	36.4	49.3	58.2	63.6	59.2	49.1	43.8	31.5	18.5	40.0
1975	20.3	20.5	27.8	33.5	44.2	53.9	64.3	61.2	51.1	43.7	28.2	24.9	39.5
1976	19.7	27.3	26.7	39.1	47.4	56.2	66.0	61.4	53.1	39.2	29.0	23.9	40.7
1977	19.4	24.8	26.3	39.9	48.7	62.4	65.1	61.0	55.9	44.0	31.0	27.1	42.2
1978	21.5	24.6	34.3	40.1	45.4	57.7	65.3	60.8	54.3	42.5	29.9	13.7	40.8
1979	10.2	23.4	30.0	39.3	45.5	57.1	64.8	61.1	56.6	44.1	18.2	25.6	39.6
1980	19.2	22.7	27.0	36.3	47.0	60.1	66.4	61.7	55.5	40.2	30.3	33.5	41.6
1981	25.4	26.8	29.1	44.1	44.6	59.6	63.5	60.5	56.0	40.9	34.4	25.4	42.5
1982	20.7	23.6	32.0	36.1	46.1	54.4	62.3	64.9	52.1	38.9	24.7	19.6	39.6
1983	25.6	26.4	27.1	28.0	41.7	53.6	63.4	64.6	55.8	43.4	27.8	12.8	39.2
1984	15.5	18.8	25.5	31.0	50.3	56.0	64.7	62.9	50.6	36.0	30.5	22.2	38.7
1985	10.6	18.5	30.2	39.9	49.7	58.2	64.0	61.6	49.3	40.5	24.6	19.9	38.9
1986	28.4	26.7b	37.6	39.2	45.8	60.1	61.9	61.7	50.7	40.6	29.2	21.2	41.9
1987	21.4	26.4	28.1	40.5	49.4	57.9	62.0	59.7	52.4	43.5	27.2	19.0	40.6
1988	15.4	20.9	25.5	40.4	48.0	63.4	65.1	62.0	52.5	46.8	30.4	20.9	40.9
1989	23.8	12.2	34.5	40.3	47.9	55.1	64.7	61.0	52.6	41.5	32.6	20.0	40.5
1990	24.8	21.4	29.9	39.0	45.0	59.2	61.2	60.7	56.2	41.8	32.5	16.8	40.7
1991	20.1	28.6	31.4	35.5	48.2	57.2	61.9	61.7	52.4	41.9	26.1	24.0	40.7
1992	19.5	28.0	33.3	44.0	50.0	55.4	59.8	59.7	54.8	44.5	22.5	18.7	40.9
1993	19.8	15.7	28.8	36.9	48.4	53.9	60.2	59.9	50.7	38.8	23.3	23.0	38.3
1994	24.8	23.0	33.6	38.3a	51.1	60.7	63.2	63.6	54.3	42.1	28.6	27.0	42.5
1995	22.1	29.8	32.5	35.8	42.8	53.9	61.3	65.1	52.3	41.8	34.6	25.9	41.5
1996	20.1	25.8	29.6	37.8	48.4	58.6	64.6	61.6	51.2	40.7	31.9	26.5	41.4
1997	21.3	22.0	34.8	31.7	48.0	58.9	63.2	62.4a	55.9	42.1	26.6	17.8	40.4
1998	26.3	26.6	27.4	37.0	49.3	52.7	65.5	62.8	59.2	43.4	36.2	19.5	42.2
1999	24.7	29.1	34.0	34.2	45.8	55.8	65.0	62.7	49.9	43.9	38.3	22.0	42.1

Appendix 2.1.4.B. Temperature data - average temperatures - Laramie FAA Airport station

ID: 485415
Latitude: 41.31 degrees
Longitude: -105.67 degrees
Elevation: 7266 feet
Station period of record: 08/01/1948-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
2000	25.7	31.2	32.8	41.8	50.9	57.6	66.1	65.5	53.1	42.2	14.4	16.7	41.5
2001	17.0	20.7	30.0	39.4	48.4	59.3	67.5	64.0	56.4	43.9	31.0	22.6	41.7
2002	20.0	22.5	24.6	40.9	47.0	61.6	67.5	61.8	54.9	36.5	27.3	25.8	40.9
2003	30.1	18.7	30.1	40.0	48.6	54.9	67.8	64.7	51.2	45.8	27.0	23.5	41.9
2004	23.9	21.9	37.7	39.2	49.4	55.1	62.1	58.7a	52.2	-999y	-999z	-999z	44.5c
Max value	30.1	32.8	37.7	44.1	52.0	63.4	67.8	65.8	59.2	49.8	40.7	33.5	43.7
Min value	8.2	12.2	18.7	28.0	41.7	52.2	59.8	58.7	45.7	31.6	14.4	12.8	38.3
Mean	20.9	23.4	29.0	37.6	47.6	57.3	63.9	62.1	53.4	42.4	29.3	22.4	40.8
Std Dev	4.9	4.7	4.3	3.4	2.4	2.7	2.0	1.8	2.8	3.2	4.8	4.1	1.1
No. years	56.0	56.0	56.0	56.0	56.0	56.0	54.0	57.0	57.0	56.0	56.0	56.0	53.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Laramie FAA Airport station

ID: 485415
Latitude: 41.31 degrees
Longitude: -105.67 degrees
Elevation: 7266 feet
Station period of record: 08/01/1948-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	80.7	74.9	58.9	36.0	32.7	-999g
1949	20.9	31.1	40.7	54.3	61.5	69.7	80.2	80.2	71.9	54.5	54.8	34.9	54.6
1950	32.5	42.4	41.4a	51.8	57.4	72.7	75.4	77.1	66.5	67.0	44.6	41.5	55.8
1951	30.5	39.1	40.1	48.1	62.5	66.3	81.6	77.5	69.8	53.6	39.8	31.6	53.4
1952	32.3	35.7	35.0	53.0	62.8	78.8	80.3	78.8	74.4	64.2	37.4	33.3	55.5
1953	40.5	33.3	46.9	47.0	56.4	75.1	81.8	77.9	74.0	60.7	47.3	33.0	56.2
1954	39.7	46.8	36.3	56.5	63.0	74.2	83.9	79.0	72.5	58.2	48.8	36.7	58.0
1955	31.6	29.1	36.1	52.3	61.9a	67.8	-999z	78.5	71.6	59.5	38.2	37.1	51.2a
1956	36.1	25.7	39.2	50.4	64.0	78.5	77.8	74.9	74.2	61.8	36.2	34.2	54.4
1957	26.9	40.1	38.7	45.4	56.1	69.5	78.6	78.5	68.0	57.1	36.1	39.9	52.9
1958	36.3	42.8	33.4	46.4	67.0	75.0	77.4	80.9	71.8	62.0	47.2	37.5	56.5
1959	33.2	34.9	38.6	50.8	59.2	77.0	80.4	78.9	65.9	53.2	44.6	42.4	54.9
1960	32.6	26.6	42.8	54.6	63.0	74.8	80.6	79.5	72.9	58.2	42.4	29.3	54.8
1961	32.8	37.3	39.6	47.4	62.5	74.6	78.9	77.5	60.3	54.9	37.4	29.8	52.8
1962	25.5	34.3	36.1	55.7	63.7	71.0	78.6	80.4	71.0	61.1	48.4	39.3	55.4
1963	25.4	39.1	41.9	51.2	67.1	74.9	83.6	77.3a	74.8	65.4	50.2	35.5	57.2
1964	31.0	27.8	33.7	47.0	63.1	70.3	-999z	76.9	70.1	61.6	42.0	33.3	50.6a
1965	37.0	31.9	31.6	52.9	58.8	69.0	79.0	75.7	58.7	63.4	48.4	37.9	53.7
1966	32.6	33.1	47.1	51.2	67.5	72.8	84.7	77.5	70.4	56.1	46.7	35.5	56.3
1967	33.9	35.2	45.9	53.0	57.6	66.9	78.8	78.0	68.1	58.6	42.4	26.6	53.7
1968	32.7	35.2	44.9	43.4	58.4	73.7	78.8	74.5	67.9	58.9	39.5	33.2	53.4
1969	38.4	35.4	32.8	55.9	67.0	65.4	82.1	82.6	72.7	41.9	40.5	36.6	54.3
1970	33.1	42.5	35.9	43.9	64.4	71.7	80.3	81.9	65.0	48.8	40.0	34.9	53.5
1971	33.3	32.4	38.9	51.0	58.5	75.3	79.4	80.5	65.0	55.6	43.8	34.3	54.0
1972	33.1	39.8	48.5	52.6	62.0	73.4	77.6	76.9	67.9	54.2	34.4	28.6	54.1
1973	25.5	30.8	35.4	41.6	60.2	72.3	75.8	78.8	64.9	59.8	40.7	32.9	51.6
1974	27.1	33.5	43.0	48.6	65.2	74.8	79.8	76.8	66.1	58.3	44.0	32.6	54.2
1975	32.4	33.7	39.5	46.4	57.2	69.3	79.8	78.4	68.3	59.2	42.0	36.7	53.6
1976	31.7	38.7	40.0	52.1	62.6	72.8	82.6	78.1	70.1	55.7	43.9	38.0	55.5
1977	32.7	40.3	39.6	53.5	63.9	78.9	81.5	75.9	72.4	60.2	44.1	37.9	56.8
1978	32.9	35.9	47.6	53.1	58.5	74.6	83.1	78.2	72.1	59.6	43.8	25.5	55.4
1979	22.9	34.4	41.6	53.5	59.9	74.0	82.2	75.9	74.3	59.0	31.5	37.0	53.8
1980	30.2	35.2	38.3	50.2	60.4	78.3	83.0	78.6	71.9	54.8	43.3	46.4	55.9
1981	40.8	39.9	41.5	57.9	55.3	74.6	78.9	75.5	71.8	53.1	48.3	36.6	56.2
1982	32.3	37.2	44.5	51.8	58.9	69.6	79.9	80.1	64.8	51.1	36.4	28.6	52.9
1983	36.7	37.9	35.7	38.4	53.8	66.9	78.4	79.6	71.8	57.6	39.2	23.2	51.6
1984	26.7	28.6	34.1	41.9	65.5	72.2	81.1	77.5	65.5	47.6	43.0	33.0	51.4
1985	23.1	29.9	42.7	54.3	64.5	74.3	80.2	80.0	63.7	54.9	35.4	30.5	52.8
1986	41.1	37.3	51.0	51.6	60.0	75.4	77.3	77.5	64.1	53.8	40.2	33.7	55.3
1987	34.0	37.9	40.4	56.0	62.3	73.5	78.3	74.5	69.5	59.8	40.1	29.5	54.6
1988	26.6	33.4	36.0	55.3	63.0	79.3	81.6	78.9	68.4	62.2	41.4	33.2	54.9
1989	36.0	22.4	47.0	54.2	62.6	70.5	82.0	76.8	68.2	54.7	44.5	32.5	54.3
1990	36.4	33.0	40.5	52.5	60.1	76.5	75.0	76.6	70.5	54.9	44.7	28.2	54.1
1991	31.3	42.8	43.2	48.4	61.7	71.6	76.2	76.2	68.0	57.3	36.2	36.7	54.1
1992	32.5	38.8	45.3	58.0	63.8	69.2	73.8	74.2	70.6	59.9	33.1	28.7	54.0
1993	30.5	27.4	39.8	48.7	62.3	68.2	76.3	74.7	65.3	52.3	35.1	34.1	51.2
1994	35.7	35.4	46.9	51.6a	65.9	78.4	79.7	79.8	71.3	55.0	40.8	39.4	56.7
1995	34.3	42.2	44.9	48.3	53.0	67.1	76.5	81.5	66.1	54.6	46.1	37.9	54.4
1996	32.7	39.1	43.1	50.6	62.1	74.8	80.6	78.8	66.0	54.1	43.1	35.0	55.0
1997	32.0	32.5	48.8	43.4	61.9	72.6	79.2	76.4	69.3	56.1	38.4	28.6	53.3
1998	36.2	37.6	40.0	50.5	64.5	66.4	80.2	78.0	75.0	55.8	46.6	31.3	55.2

Appendix 2.1.4.B. Temperature data - maximum temperatures - Laramie FAA Airport station

ID: 485415
Latitude: 41.31 degrees
Longitude: -105.67 degrees
Elevation: 7266 feet
Station period of record: 08/01/1948-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1999	33.8	39.9	48.4	45.0	59.2	70.2	80.6	77.6	65.3	61.1	54.7	34.5	55.8
2000	36.4	43.1	45.4	56.4	65.2	73.8	83.3	81.5	69.2	56.3	26.3	28.8	55.5
2001	28.5	31.8	40.9	52.5	62.9	77.1	84.2	79.6	73.1	57.8	44.9	34.1	55.6
2002	32.1	36.4	36.6	55.2	62.8	80.5	85.7	78.2	69.5	50.0	38.7	37.6	55.3
2003	41.8	30.1	39.8	52.1	63.0	68.8	85.7	81.0	67.4	62.4	36.6	34.2	55.2
2004	34.7	33.1	52.0	51.9	64.8	69.7	77.8	73.7a	66.1	-999y	-999z	-999z	58.2c
Max value	41.8	46.8	52.0	58.0	67.5	80.5	85.7	82.6	75.0	67.0	54.8	46.4	58.0
Min value	20.9	22.4	31.6	38.4	53.0	65.4	73.8	73.7	58.7	41.9	26.3	23.2	51.2
Mean	32.6	35.4	41.1	50.7	61.6	72.8	80.0	78.1	69.1	57.1	41.7	34.0	54.6
Std Dev	4.6	5.0	4.9	4.3	3.3	3.8	2.7	2.1	3.7	4.5	5.5	4.3	1.5
No. years	56.0	56.0	56.0	56.0	56.0	56.0	54.0	57.0	57.0	56.0	56.0	56.0	53.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Laramie FAA Airport station

ID: 485415
Latitude: 41.31 degrees
Longitude: -105.67 degrees
Elevation: 7266 feet
Station period of record: 08/01/1948-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	47.1	40.8	26.5	14.3	10.3	-999g
1949	-4.5	7.8	20.2	27.5	36.1	44.0	47.9	46.4	38.2	27.0	26.5	10.9	27.3
1950	9.9	16.3	17.0a	23.3	28.5	39.9	46.2	42.3	38.4	32.5	20.4	16.9	27.6
1951	6.4	13.3	13.4	23.1	34.8	38.0	47.8	46.6	35.5	27.7	14.6	10.6	26.0
1952	10.7	9.9	12.9	25.6	34.9	44.8	46.9	46.9	37.7a	27.9	8.6	11.8	26.6
1953	19.2	8.8	20.5	21.2	30.6	43.4	50.6	46.4	39.1	28.2	21.7	9.2	28.2
1954	17.6	18.9	12.1	28.5	33.2	41.6	51.8	45.7	40.6	29.6	20.8	11.8	29.3
1955	9.2	7.2	13.3	23.0	33.1	40.9	-999z	50.2	38.9	28.7	16.0	18.4	25.3a
1956	13.1	1.0	14.8	24.0a	37.4	45.1	46.6	43.9	37.9	28.3	12.7	10.4	26.3
1957	6.3	19.3	17.3	22.8	34.1	41.6	48.5	47.7	35.0	31.2	13.7a	17.8	28.0
1958	6.8	19.9	11.0	23.5	36.9	41.3	45.5	47.5	37.8	28.3	18.0	15.4	27.7
1959	10.0	12.2	15.2	23.8	33.7	44.1	46.5	47.2	35.9	25.9	15.4	13.2	26.9
1960	9.6	3.6	19.3	27.0	33.6	43.8	48.2	45.9	41.1	30.3	19.7	3.2	27.1
1961	5.9	12.9	17.3	24.0	35.7	42.6	46.7	48.5	35.5	27.0	13.6	10.0	26.6
1962	-3.7	13.2	12.0	26.3	35.5	40.2	44.7	43.8	37.5	30.4	21.2	12.5	26.1
1963	-0.6	16.1	15.5	25.5	33.3	41.7	48.5	47.8a	41.2	32.6	21.1	9.9	27.7
1964	4.9	1.1	8.0	23.5	34.1	40.2	-999z	44.0	36.1	25.4	17.5	9.8	22.2a
1965	14.2	7.8	5.9	27.8	31.9	42.1	47.6	43.7	32.7	29.7	24.0	12.7	26.7
1966	8.9	6.3	16.8	20.5	32.1	41.2	50.8	44.4	38.5	25.8	20.5	11.0	26.4
1967	12.2	11.0	21.8	23.0	32.3	40.5	47.8	43.4	38.2	28.7	15.0	2.1	26.3
1968	8.2	13.7	19.7	18.8	30.5	40.1	47.2	43.7	33.6	29.1	12.5	9.3	25.5
1969	16.3	11.0	5.8	27.8	35.7	39.5	49.6	49.0	41.5	21.3	16.9	13.9	27.4
1970	13.2	16.1	12.4	21.8	33.7	42.4	49.8	49.6	35.5	21.5	19.4	13.4	27.4
1971	16.3	10.1	16.6	24.2	32.9	42.2	45.8	46.2	33.7	25.0	17.9	10.5	26.8
1972	9.9	15.5	22.3	25.0	32.9	45.0	46.0	45.7	39.1	28.6	12.1	4.4	27.2
1973	1.8	2.3	13.9	20.0	32.0	42.1	47.2	48.5	38.0	30.3	18.2	10.6	25.4
1974	6.1	10.9	21.1	24.2	33.5	41.6	47.5	41.6	32.1	29.2	19.0	4.4	25.9
1975	8.1	7.3	16.1	20.5	31.3	38.4	48.8	44.1	33.9	28.2	14.4	13.0	25.3
1976	7.6	15.8	13.4	26.0	32.1	39.7	49.5	44.6	36.2	22.7	14.1	9.8	26.0
1977	6.2	9.3	13.0	26.3	33.5	45.9	48.8	46.1	39.3	27.8	17.9	16.4	27.5
1978	10.1	13.3	21.0	27.1	32.3	40.8	47.4	43.3	36.5	25.4	15.9	1.9	26.3
1979	-2.5	12.3	18.4	25.2	31.0	40.2	47.4	46.2	39.0	29.2	4.9	14.1	25.4
1980	8.1	10.2	15.6	22.3	33.7	41.8	49.8	44.8	39.1	25.5	17.2	20.6	27.4
1981	10.0	13.6	16.7	30.3	33.9	44.5	48.1	45.4	40.2	28.6	20.4	14.2	28.8
1982	9.1	10.0	19.4	20.4	33.3	39.2	44.6	49.7	39.3	26.6	13.0	10.5	26.3
1983	14.6	14.8	18.5	17.7	29.5	40.3	48.3	49.6	39.7	29.2	16.3	2.5	26.8
1984	4.4	8.9	16.9	20.1	35.0	39.8	48.4	48.4	35.7	24.4	18.0	11.5	25.9
1985	-1.8	7.1	17.7	25.5	34.9	42.1	47.8	43.2	34.8	26.0	13.8	9.3	25.0
1986	15.7	16.0b	24.1	26.8	31.7	44.9	46.5	45.9	37.2	27.4	18.1	8.7	28.6
1987	8.8	14.9	15.9	24.9	36.5	42.3	45.7	44.9	35.2	27.2	14.3	8.5	26.6
1988	4.1	8.3	14.9	25.5	33.1	47.5	48.6	45.2	36.6	31.5	19.4	8.7	26.9
1989	11.7	2.0	22.1	26.3	33.2	39.6	47.4	45.1	36.9	28.3	20.7	7.4	26.7
1990	13.3	9.9	19.3	25.4	30.0	41.9	47.4	44.8	41.8	28.7	20.3	5.4	27.3
1991	8.9	14.5	19.6	22.5	34.6	42.8	47.5	47.2	36.8	26.5	16.0	11.3	27.4
1992	6.6	17.1	21.4	29.9	36.3	41.6	45.8	45.2	39.0	29.2	11.9	8.7	27.7
1993	9.2	4.0	17.9	25.0	34.5	39.6	44.2	45.0	36.2	25.3	11.5	11.9	25.4
1994	13.8	10.6	20.3	25.2	36.3	43.0	46.6	47.3	37.3	29.2	16.4	14.5	28.4
1995	9.9	17.3	20.1	23.3	32.5	40.7	46.1	48.7	38.5	29.1	23.0	13.9	28.6
1996	7.5	12.5	16.0	25.0	34.7	42.3	48.6	44.4	36.3	27.3	20.7	18.0	27.8
1997	10.5	11.5	20.7	20.0	34.1	45.1	47.1	48.2a	42.5	28.0	14.8	7.0	27.5
1998	16.4	15.6	14.9	23.4	34.1	39.0	50.9	47.7	43.4	30.9	25.7	7.7	29.1

Appendix 2.1.4.B. Temperature data - minimum temperatures - Laramie FAA Airport station

ID: 485415
Latitude: 41.31 degrees
Longitude: -105.67 degrees
Elevation: 7266 feet
Station period of record: 08/01/1948-10/06/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1999	15.7	18.3	19.7	23.4	32.3	41.4	49.5	47.7	34.5	26.6	22.0	9.5	28.4
2000	15.0	19.2	20.2	27.2	36.5	41.3	49.0	49.5	37.0	28.1	2.5	4.7	27.5
2001	5.5	9.6	19.0	26.3	33.9	41.5	50.7	48.3	39.6	30.0	17.1	11.1	27.7
2002	7.9	8.6	12.5	26.5	31.1	42.7	49.2	45.3	40.3	23.0	15.8	14.0	26.4
2003	18.5	7.3	20.3	27.9	34.2	41.1	49.8	48.5	35.0	29.3	17.4	12.8	28.5
2004	13.0	10.7	23.4	26.5	34.0	40.5	46.5	43.7a	38.2	-999y	-999z	-999z	30.7c
Max value	19.2	19.9	24.1	30.3	37.4	47.5	51.8	50.2	43.4	32.6	26.5	20.6	29.3
Min value	-4.5	1.0	5.8	17.7	28.5	38.0	44.2	41.6	32.1	21.3	2.5	1.9	25.0
Mean	9.2	11.4	16.9	24.4	33.5	41.8	47.8	46.2	37.7	27.8	16.9	10.7	27.1
Std Dev	5.4	4.8	4.1	2.7	1.9	2.0	1.7	2.1	2.5	2.4	4.5	4.1	1.0
No. years	56	56.0	56.0	56.0	56.0	56.0	54.0	57.0	57.0	56.0	56.0	56.0	53.0
Flags	0.0	0.0	0.0	0.0									

a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subse 0.0
Notes 0.0
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - Medicine Bow station

ID: 486120
Latitude: 41.90 degrees
Longitude: -106.20 degrees
Elevation: 6570 feet
Station period of record: 08/01/1948-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	63.3	56.6	41.8	26.3	19.8	-999g
1949	6.7	18.8	32.2	44	50.4	58.7	65.2	63.5	55.2	41.3	41	-999n	43.4a
1950	23.1	29.6	30.6	39.2	44.8	56.9	61.1	59.5	52.8	49.2	33.4	30.6	42.6
1951	18.9	26.9	29.8	37.8	50.2	52.4	64.6	61.7	53.1	41.7	27.6	21.7	40.5
1952	22.7	22.6	23.9	41.7	49.9	61.8	64.6	63.6	55.1	44.8	23.3	23.1	41.4
1953	30.9	23.3	34.6	36.5	47.1e	61	67.4a	63.7	55.5	43.3	35	22.1	43.4
1954	28.7	34.1	27.6a	44.4	49.6	58.9	68.8	62.2	55.5	43.7	34.9	21.6	44.2
1955	18.4	18.6	25.5	38.8	50.8a	56.2	66.3	65.1	54.9	44.5	29.3	29.7	41.5
1956	25.2	15.4	30	39.2	53.2	62.8	63.3	60.4	54.4	44.5	25.7	24.1	41.5
1957	14.8	31.2	31.7	37.3	47.9	57.3	64.4	63.6	50.8	44.9	26.3	27.9	41.5
1958	21.2	31.7	24.8	37.4	54	59.9	61.9	63.6	54.8	43.9	32.2a	26.1	42.6
1959	22.1	23.2	28.8	40	48.2	61.2	64.2	63.3	50.9	40.9	30.5	26.7	41.7
1960	21.1	16.7	31.8	42.8	49.9	59.4	64.1	61.3	54.2	41.9	28.4	19.9	41
1961	22.5	27	32.4	37.1b	50.7	59.4	63.6	64	49.2	40.2	26.9	20.2a	41.1
1962	13.1	25.8	23.9	43.9	50.5	57.9	62.7	61	53.8	44.7	35.6	26.1	41.6
1963	13.6	30.1	26.9	39	51.4	58.8	66	63.2	57.9	47.2	34.8	22.3	42.6
1964	18.8	16.8	21.2	37.2	49.8	56.3	-999q	60.7	52.8	42.7	29.1	21.5	37.0a
1965	26.4	22.5	19.5	41.5	46.7	56.5b	63.9	60.3	46.8a	46.2	36.1	24.8	40.9
1966	20.8	21	32.8	37.7	51.5	57.7	67.7	61.1	54.8	41.6	34.6	24.5	42.1
1967	25.5	25.1	34.8	39.9	45.8	55.2	-999z	-999q	54.1a	44.8	28.6	15.0a	36.9b
1968	18	25.2	32.9	33.2a	45.6	58.2	64.3	60.3	50.8	-999s	26.2	19.8	39.5a
1969	26.5	24.6	24.1	45.2	53.2	55.1	67	65.7	58.6	35.8	32.1	25.3	42.8
1970	25	30	26.8	35.1	50.5	57.7	65.9	66	51.6	36.7	32.6	24.3	41.9
1971	27	23.2	30.1	40.2	47.8	60.8	64.4	64.8	51.2	41.3	29.7	21	41.8
1972	20.8	26.3	37.9	41.1	49.5	60.7	63.2	63.1	53.4	42.9	24.7	16.7	41.7
1973	14.7	17.1	26.7	33.4a	47.8	59.2	63.2	64.3b	52.6	45.7a	-999z	-999z	42.5b
1974	-999z	-999z	-999z	-999z	-999y	61	65.3	60	51.3	45.4	32.7	20.2	48.0e
1975	21.2	20.4	29.8	36.6	46.9	55.5	65.3	61.3	51.4	41.8	28.1c	24.6	40.2
1976	21.7b	27.5	27.1	40.9a	49.6	56.3	65.9	-999f	52.6d	37.8	29.0a	22.8	39.2a
1977	17.5	27.9	28.3	43.2a	50.8a	63.7	65.2	63.0b	54.5	44.7	30.8	28.2	43.2
1978	21.1	24.6	36.2	41.3	48.5	59.7	-999g	61.8	54.5	41.7	-999z	-999z	43.3c
1979	-999z	-999z	-999z	-999z	48.3	59.6	66.2	61.8	57	44.3	23.3	27	48.4d
1980	19	23.5	28	-999z	49.8	61.9	66.7	62.9	55.7	42.4	30.3	31.7	42.9a
1981	27.1	29.7	33.9	48.4	47.7	63.4	66.8	64.4	-999g	-999z	-999z	-999z	47.7d
1982	-999z	22.2	34.1	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
1983	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1984	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1985	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1986	-999z	-999z	-999z	-999z	-999z	-999z	-999z	64.2	51.6	42.6	29.8	22.3	-999g
1987	19	26.4	30.2	44.3	52.7	60	64.6	61.2	54	45	30.4	22.5b	42.5
1988	16.7	22.3	28.5	43.3	51.8	65.9	67.5	64.2	53.7	48.2	31.1	20.6	42.8
1989	24.2	12.9	36.2	43.3	50.9	58.4	67.5	62.1	54.8	44.3	34.1	22.2	42.6
1990	27.2	22.6	33.2	42.4	48.1	61.8	65	63.2	58.9	45	33.5	16.2	43.1
1991	19.4	30	34.2	39	51	60.9	64.8	64.7	54.7	44.8	27.3	20.7	42.6
1992	19.7	29.6	36.2	46.4	53.4	59.4	63	63.2	55.6	46.9	25.4	19.8	43.2
1993	19.4	15.6	31.8	39.8	51.3	56.4	61.8	61.5	-999o	-999m	23.9	23.4	38.5b
1994	25.4	23.3	36.8	41.8	54.6	63.1	65.6	66	55.3	43.9	29.1	27	44.3
1995	21.6	30.4	34.6	39.7	45.5	56.4	64.2	66	54.7	43.6	36	28.7	43.5
1996	19.7	26.9	31.7	41.4	50.2	61.2	66.8	64.1	52.7	41.8	33.5	25.8	43
1997	21.8	21	35	35.9	51.1	61.2	64.8	64.1	57.6	44.7	28.1	19.6	42.1
1998	27.4	27.9	29.9	39.6	52	54.5	68.5	64.9	60.1	44.1	37	22.8	44.1

Appendix 2.1.4.B. Temperature data - average temperatures - Medicine Bow station

ID: 486120
Latitude: 41.90 degrees
Longitude: -106.20 degrees
Elevation: 6570 feet
Station period of record: 08/01/1948-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1999	26.6b	29	36.3a	37.7	47.2c	59.5a	-999g	64.8c	51.7	44.8b	38.4a	25.0d	41.9a
2000	26.3a	30.6a	34.1b	44.9b	54	60.2a	67.6d	67.3	54.3b	44.9c	18.2e	19.1b	43.5
2001	16.3a	20.4a	31.4a	42.6	52.1	60.7b	69.9	67.8b	57.1	45.8	33.2	-999j	45.2a
2002	21.5	23.5	25	44.4	50.2	63	69.4	64	56.5	38.2	29.1	26.5	42.6
2003	31.6	21	33.8	43.6	51.2	57.3	69.9	67.4	54	48.3	26.7	27.0e	44.3
2004	24.8	23.8	37.6	43.1	52	58.5	64.6a	-999z	-999z	-999z	-999z	-999z	43.5e

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Medicine Bow station

ID: 486120
Latitude: 41.90 degrees
Longitude: -106.20 degrees
Elevation: 6570 feet
Station period of record: 08/01/1948-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	81.5	75.4	61.3	36.0	30.2	-999g
1949	17.8	28.9	42.8	59.9	63.7	72.0	82.2	81.8	73.1	53.5	53.9	-999n	57.2a
1950	32.7	41.5	42.3	53.1	58.5	74.9	77.5	78.2	67.9	67.9	45.2	40.4	56.7
1951	29.2	38.6	41.8	51.3	64.6	67.8	82.4	78.5	70.5	54.3	38.9	31.0	54.1
1952	32.9	34.1	34.7	56.5	64.6	79.4	82.9	80.5	75.7	65.5	36.9	33.0	56.4
1953	39.3	33.9	47.8	50.1	59.0	78.5	85.1a	80.6	75.2	61.8	48.7	33.4	57.8
1954	39.4	47.2	40.2	60.4	66.7	77.0	87.4	82.2	73.5	59.1	50.2	33.2	59.7
1955	29.6	29.1	37.2	55.8	68.5a	71.9	86.3	82.2	72.8	61.3	39.6	37.5	56.0
1956	36.7	27.7	43.3	54.6	69.0	82.5	80.4	77.9	75.6	63.2	37.4	34.5	56.9
1957	26.4	41.6	44.1	50.2	60.0	72.9	81.2	80.0	68.7	58.1	36.2	38.0	54.8
1958	33.2	42.6	35.6	50.5	70.7	77.0	78.6	80.8	71.8	62.7	46.1a	36.8	57.2
1959	33.9	33.9	38.9	54.0	61.4	79.3	82.6	80.4	65.5	54.1	43.5	40.3	55.7
1960	31.0	26.3	43.9	58.3	65.9	76.0	83.7	80.6	72.6	58.5	39.0	31.9	55.6
1961	34.3	38.1	44.1	51.1	65.3	78.5	81.5	81.0	64.1	55.4	37.3	29.1a	55.0
1962	24.6	34.4	35.8	59.1	65.5	73.9	80.8	80.8	72.7	61.8	48.7	38.4	56.4
1963	25.7	41.6	41.0	51.8	68.1	75.8	84.5	80.6	75.3	66.1	48.9	32.8	57.7
1964	29.1	27.4	32.7	49.0	65.5	72.4	-999q	77.9	72.7	60.5	40.7	31.5	50.9a
1965	35.8	33.6	32.3	54.8	60.6	71.2b	80.1	77.6	60.8	63.4	48.4	35.5	54.5
1966	30.9	31.6	47.1	53.5	69.1	74.3	85.4	79.2	71.2	56.3	46.4	33.7	56.5
1967	34.7	35.4	46.1	54.7	58.6	69.1	-999z	-999q	70.5a	60.0	42.5	26.0a	49.8b
1968	29.7	35.7	45.3	46.3	61.2	74.8	81.6	76.9	68.8	-999s	39.5	31.6	53.8a
1969	38.0	36.5	37.0	62.1	71.0	69.6	86.2	85.5	76.8	48.7	44.7	37.8	57.8
1970	33.8	43.2	38.1	47.7	67.4	74.7	84.3	85.5	70.8	52.5	41.8	35.0	56.2
1971	34.5	33.4	40.8	55.2	62.7	78.2	82.1	84.1	67.9	57.5	41.2	30.7	55.7
1972	30.1	36.8	51.6	56.1	66.0	76.5	80.8	79.9	70.3	56.0	35.3	26.9	55.5
1973	24.8	29.4	36.7	44.2a	63.4	75.6	78.8	80.9b	68.9	63.1a	-999z	-999z	56.6b
1974	-999z	-999z	-999z	-999z	-999y	79.6	84.0	80.1	71.6	62.4	44.5	32.1	64.9e
1975	32.7	32.1	40.7	50.1	62.5	73.2	83.8	82.6	73.4	60.7	42.3c	36.8	55.9
1976	32.5a	39.0	41.0	56.8a	68.1	74.8	85.6	-999f	74.6	59.4	46.4	37.9	56.0a
1977	30.3	43.3	43.3	60.1	68.7a	83.2	84.0	80.7b	73.2	62.4	44.3	38.6	59.3
1978	30.9	34.4	48.6	56.3	63.9	76.9	-999g	80.6	73.2	62.4	-999z	-999z	58.6c
1979	-999z	-999z	-999z	-999z	64.6	78.1	86.2	79.0	79.3	63.0	35.5	38.9	65.6d
1980	29.9	34.3	38.7	-999z	65.3	81.7	85.7	82.0	74.5	59.4	44.5	43.0	58.1a
1981	42.5	42.6	47.2	63.5	59.9	79.6	84.4	81.7	-999g	-999z	-999z	-999z	62.7d
1982	-999z	35.4	46.1	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
1983	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1984	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1985	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1986	-999z	-999z	-999z	-999z	-999z	-999z	-999z	82.2	67.0	55.1	39.8	33.6	-999g
1987	29.1	36.6	41.1	61.5	66.7	77.6	81.6	77.9	73.3	62.1	42.0	32.1b	56.8
1988	25.0	33.2	38.9	60.2	67.5	83.5	86.7	83.8	71.8	65.5	40.6	31.7	57.4
1989	34.3	22.4	49.5	59.1	67.8	75.5	86.2	80.4	72.6	58.8	45.0	32.2	57.0
1990	36.5	33.0	44.8	57.2	64.5	80.1	81.1	81.6	76.1	59.2	44.0	27.0	57.1
1991	28.7	42.2	45.9	53.1	64.8	76.8	81.9	82.2	71.9	61.0	35.8	30.8	56.3
1992	30.3	40.2	49.7	62.2	69.8	74.8	78.9	80.1	73.5	63.8	33.9	29.0	57.2
1993	29.5	26.5	42.0	51.7	65.5	71.0	80.2	78.9	-999o	-999m	34.5	31.2	51.1b
1994	34.3	33.5	49.6	56.8	71.5	81.7	83.9	84.0	74.5	57.4	40.7	36.8	58.7
1995	31.5	40.4	47.2	53.0	56.4	71.5	80.9	84.7	71.0	57.6	46.5	39.7	56.7
1996	30.5	38.6	45.5	55.9	64.9	79.8	85.2	84.0	69.8	56.1	43.6	33.9	57.3
1997	30.9	31.4	48.5	48.6	66.8	77.3	82.6	79.8	73.1	60.3	40.4	29.8	55.8
1998	36.6	37.8	42.0	53.9	67.9	68.5	84.5	82.4	78.6	57.4	46.1	32.6	57.3

Appendix 2.1.4.B. Temperature data - maximum temperatures - Medicine Bow station

ID: 486120
Latitude: 41.90 degrees
Longitude: -106.20 degrees
Elevation: 6570 feet
Station period of record: 08/01/1948-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1999	34.4	39.0	52.0	49.0	62.5	75.9	85.4	82.1	69.5	63.6b	55.4	34.8	58.6
2000	35.5	41.5	47.1	61.0	69.8	78.0	86.4	85.4	70.6	60.1	28.6	28.6	57.7
2001	27.3	31.1	42.3	55.7	66.9	79.8	87.4	85.2	76.4	60.7	46.9	-999j	60.0a
2002	31.5	35.3	36.9	60.1	67.2	82.0	88.7	81.6	72.1	52.3	38.9	35.5	56.9
2003	40.1	31.3	43.2	58.1	67.2	72.5	90.0	84.9	70.9	65.0	34.5	36.2e	57.8
2004	34.3	34.4	51.5	57.5	67.7	74.5	81.9a	-999z	-999z	-999z	-999z	-999z	57.4e

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Medicine Bow station

ID: 486120
Latitude: 41.90 degrees
Longitude: -106.20 degrees
Elevation: 6570 feet
Station period of record: 08/01/1948-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	45.0	37.9	22.3	16.7	9.3	-999g
1949	-4.5	8.8	21.6	28.1	37.2	45.4	48.2	45.3	37.4	29.1	28.1	-999n	29.5a
1950	13.5	17.6	18.9	25.4	31.2	38.8	44.7	40.8	37.6	30.4	21.6	20.8	28.5
1951	8.5	15.1	17.9	24.2	35.7	37.0	46.8	44.9	35.6	29.1	16.2	12.5	27.0
1952	12.5	11.1	13.0	26.9	35.2	44.1	46.3	46.6	34.6	24.0	9.8	13.2	26.4
1953	22.5	12.7	21.5	22.9	33.5e	43.6	49.5	46.8	35.8	24.9	21.2	10.8	28.8
1954	18.0	21.1	15.0a	28.3	32.5	40.7	50.2	42.2	37.6	28.3	19.6	10.1	28.6
1955	7.2	8.0	13.9	21.9	33.1a	40.4	46.3	48.0	36.9	27.6	19.0	21.8	27.0
1956	13.6	3.1	16.8	23.8	37.3	43.1	46.2	42.9	33.1	25.7	14.0	13.7	26.1
1957	3.2	20.9	19.3	24.4	35.8	41.8	47.7	47.2	32.9	31.7	16.5	17.8	28.2
1958	9.3	20.8	14.0	24.3	37.2	42.7	45.2	46.3	37.8	25.1	18.2a	15.4	28.0
1959	10.3	12.4	18.6	26.0	35.1	43.1	45.9	46.1	36.2	27.7	17.4	13.1	27.7
1960	11.2	7.1	19.6	27.3	33.8	42.8	44.5	42.0	35.8	25.4	17.7	7.9	26.3
1961	10.7	15.9	20.7	24.4b	36.1	40.4	45.7	46.9	34.4	24.9	16.5	11.3a	27.3
1962	1.7	17.1	11.9	28.7	35.5	41.8	44.5	41.1	34.9	27.5	22.4	13.8	26.8
1963	1.4	18.6	12.8	26.2	34.6	41.8	47.5	45.8	40.4	28.4	20.7	11.8	27.5
1964	8.5	6.3	9.7	25.4	34.0	40.3	47.4	43.4	32.9	24.8	17.5	11.5	25.1
1965	17.0	11.4	6.7	28.1	32.7	41.8b	47.7	43.1	33.3a	29.0	23.9	14.0	27.4
1966	10.7	10.3	18.5	21.9	34.0	41.0	50.0	43.0	38.3	26.8	22.8	15.3	27.7
1967	16.3	14.9	23.5	25.0	33.0	41.2	-999z	-999q	37.7a	29.7	14.8	4.1	24.0b
1968	6.2	14.8	20.5	20.5a	30.1	41.7	46.9	43.8	32.8	-999s	12.8	8.0	25.3a
1969	15.1	12.7	11.2	28.3	35.4	40.5	47.8	45.9	40.3	22.8	19.4	12.7	27.7
1970	16.2	16.9	15.5	22.5	33.7	40.8	47.5	46.5	32.4	20.9	23.4	13.5	27.5
1971	19.5	12.9	19.4	25.2	32.8	43.4	46.7	45.5	34.4	25.2	18.2	11.3	27.9
1972	11.5	15.8	24.1	26.2	33.1	44.9	45.7	46.4	36.4	29.7	14.2	6.5	27.9
1973	4.6	4.7	16.7	22.7a	32.1	42.8	47.6	47.8b	36.2	28.2a	-999z	-999z	28.3b
1974	-999z	-999z	-999z	-999z	-999y	42.3	46.6	40.0	30.9	28.4	20.8	8.3	31.0e
1975	9.7	8.7	18.9	23.1	31.2	37.9	46.8	40.1	29.3	22.9	13.8c	12.4	24.6
1976	9.9a	16.0	13.1	25.2	31.2	37.8	46.3	-999f	32.0d	16.2	11.9a	7.6	22.5a
1977	4.7	12.5	13.3	25.7a	32.8	44.2	46.4	45.4b	35.8	27.0	17.3	17.8	26.9
1978	11.3	14.7	23.9	26.3	33.2	42.4	-999g	42.9	35.7	21.0	-999z	-999z	27.9c
1979	-999z	-999z	-999z	-999z	31.9	41.1	46.2	44.5	34.7	25.6	11.1	15.2	31.3d
1980	8.2	12.6	17.3	-999z	34.3	42.0	47.7	43.8	36.9	25.4	16.1	20.5	27.7a
1981	11.8	16.8	20.7	33.2	35.6	47.1	49.1	47.1	-999g	-999z	-999z	-999z	32.7d
1982	-999z	8.9	22.2	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
1983	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1984	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1985	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1986	-999z	-999z	-999z	-999z	-999z	-999z	-999z	46.3	36.2	30.0	19.8	11.1	-999g
1987	8.9	16.2	19.3	27.1	38.7	42.4	47.5	44.6	34.7	27.9	18.8	10.5	28.1
1988	8.5	11.5	18.1	26.3	36.0	48.3	48.3	44.6	35.6	30.8	21.6	9.5	28.2
1989	14.1	3.5	22.8	27.4	34.1	41.3	48.9	43.9	37.1	29.7	23.1	12.2	28.2
1990	18.0	12.1	21.6	27.5	31.6	43.5	48.8	44.7	41.6	30.8	22.9	5.3	29.1
1991	10.2	17.8	22.5	24.9	37.3	45.0	47.8	47.2	37.6	28.6	18.8	10.7	29.0
1992	9.2	18.9	22.6	30.5	37.1	43.9	47.1	46.2	37.7	29.9	16.9	10.6	29.2
1993	9.3	4.6	21.5	27.9	37.0	41.9	43.3	44.2	-999l	-999l	13.3	15.7	25.9b
1994	16.5	13.0	23.9	26.7	37.6	44.4	47.3	48.1	36.1	30.4	17.5	17.3	29.9
1995	11.7	20.4	22.0	26.5	34.6	41.2	47.5	47.2	38.4	29.7	25.5	17.6	30.2
1996	8.8	15.3	17.9	27.0	35.6	42.6	48.4	44.3	35.5	27.5	23.3	17.7	28.7
1997	12.7	10.6	21.6	23.2	35.4	45.1	47.0	48.4	42.1	29.1	15.7	9.4	28.3
1998	18.3	18.0	17.7	25.4	36.0	40.4	52.5	47.5	41.7	30.9	27.9	13.1	30.8

Appendix 2.1.4.B. Temperature data - minimum temperatures - Medicine Bow station

ID: 486120
Latitude: 41.90 degrees
Longitude: -106.20 degrees
Elevation: 6570 feet
Station period of record: 08/01/1948-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1999	19.1b	19.0	20.9a	26.3	32.6c	42.8a	-999g	47.5c	33.8	26.1b	20.9a	15.3d	27.7a
2000	17.5a	19.8a	21.6b	29.0b	38.2	42.4a	48.7d	49.3	36.9b	29.2c	8.0e	10.2b	29.2
2001	5.6a	10.2a	20.4a	29.5	37.4	41.9b	52.5	50.7b	37.8	30.9	19.5	-999i	30.6a
2002	11.5	11.8	13.1	28.8	33.1	43.9	50.1	46.4	40.8	24.0	19.2	17.5	28.3
2003	23.1	10.6	24.5	29.0	35.3	42.1	49.8	49.9	37.0	31.5	18.9	17.9e	30.8
2004	15.4	13.1	23.6	28.7	36.2	42.6	47.4a	-999z	-999z	-999z	-999z	-999z	29.6e

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - Muddy Gap station

ID: 486595
Latitude: 42.36 degrees
Longitude: -107.44 degrees
Elevation: 6248 feet
Station period of record: 03/14/1950-07/01/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1950	-999z	-999z	-999m	41.6	45.5	57.1	62.7	62.9	55.2	51.4	32.7	29.7	48.7c
1951	15.9	25.8	26.6	38.7	50.1	52.8	68.9	64.5	52.5	44.3	28.7	20.2	40.8
1952	20.6	22.3	22.3	43.1	52.5	62.8	67.3	69.2a	59.1	49.8	26.8	24.7	43.4
1953	30.4	23.2	33.9	37.9	46.5	64.5	72.1	68.9	61.7	48.3	38.3	23.4	45.8
1954	28.2	34.4	28.3	46.8	52.7	61.2	72.8	67.6	60.6	46.5	39.5	25.0	47.0
1955	20.1	19.9	25.6	40.4	52.5	59.0	67.7	70.3	58.8	47.2	30.1	27.1	43.2
1956	27.1	19.6	33.6	41.3	54.8	-999f	67.3	64.2	60.3	49.3	28.5	24.5	42.8a
1957	15.4	32.4	33.5	38.3	50.1	59.6	69.0	67.9	55.1	46.8	26.3	26.9	43.4
1958	22.6	33.5	26.0	39.7	56.4	61.3	65.4	68.4	59.4	48.8	33.1	28.9	45.3
1959	23.1a	23.6	30.1	42.5	49.2	64.6	68.3	67.8	55.2	44.4	30.8	29.0	44.0
1960	21.5	15.1	32.0	46.2	52.5	63.8	69.7	66.1	59.7	47.0	32.1	23.5	44.1
1961	24.5	28.7	34.9	41.2	52.7	64.5	68.0	68.1	51.0	44.2	28.2	20.5	43.9
1962	15.2	26.8	27.2	47.0	52.4	60.3	66.2	67.1	57.4	50.0	39.0	29.3	44.8
1963	14.7	33.3	30.0e	41.5	54.3	61.7	69.2c	67.2	61.4	51.5e	38.2c	24.7a	45.6
1964	20.7	18.3	23.8	39.9	51.7	57.5	71.8	65.3	56.5	49.0	29.8	22.3	42.2
1965	27.2	25.4	22.9	43.5	48.5	59.2	67.2	64.2	47.5a	50.7	39.1	26.0	43.4
1966	21.1	20.3	34.1	40.5a	54.6	60.6	71.8	65.1	59.7	45.0	35.7	22.7	44.3
1967	-999z	27.0	37.9	42.5	48.3	58.0	67.7	67.4	59.7	48.5	33.3	16.7	46.1a
1968	23.0	27.2	35.8	38.3	48.7	61.6	68.3	63.5	55.3	47.8	31.6	19.9	43.4
1969	28.6	27.1	25.2	46.8	56.0a	56.8a	70.1c	71.0	61.8	38.0	34.8	28.2	45.4
1970	25.8	-999h	29.0	34.8	53.6	60.0	69.0	69.2	53.9	40.5	34.1	23.6	44.9a
1971	25.9	26.2	32.7	40.5b	49.3	62.1a	66.1	69.1	53.1	41.9	28.3	19.9a	42.9
1972	19.3b	26.2	39.5	42.0	51.6	62.4	66.1c	64.0	53.2	45.0	28.4	17.2	42.9
1973	15.5	19.1b	27.8	31.9b	-999g	60.9	65.7	68.6	-999z	46.1	31.9	25.8	39.3b
1974	17.1	23.1	35.3	42.4	50.7d	-999g	70.0	62.2	55.0	46.4	34.2	21.2	41.6a
1975	20.8	22.1	29.4	36.1	46.3	58.0	71.6	65.8	54.1	45.6	30.4	26.5	42.2
1976	21.8	24.7	32.0	43.5a	53.3c	58.8b	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1977	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1978	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	48.2a	28.9a	-999z	-999j
1979	9.5d	24.1a	32.4c	-999g	50.0d	-999z	-999z	63.9a	61.5a	-999z	-999z	-999z	-999f
1980	-999z	-999z	-999z	41.8	-999f	61.9b	-999g	-999j	58.2b	45.0	31.9a	35.3	-999f
1981	30.3	29.2	35.7a	47.0b	50.4	63.7b	69.5	67.2	61.9b	43.9a	-999z	28.8d	48.0a
1982	22.2	24.7	35.1	39.4	50.3	58.9	69.0	71.5	55.9	44.1	29.7	23.5a	43.7
1983	29.2	26.8	33.5	35.2a	47.0	59.8	68.9	72.5	60.0	49.0	32.3	14.2	44.0
1984	19.7	23.4	31.0	38.3	53.5	60.6	69.8	70.6	54.6	40.2	33.0	20.1	42.9
1985	16.5	19.7	32.6	44.8	55.1	62.5	70.3	67.2	53.9	46.4	25.1	20.4a	42.9
1986	29.3	26.1c	41.0	-999z	51.4a	68.0	66.7	67.5	54.5	44.9	31.9	24.3b	46.0a
1987	20.5	25.9	31.5	48.1	55.4	64.2	68.4	65.5	58.3	48.0	33.4	22.1	45.1
1988	18.5	27.2	30.7	46.5	54.6a	70.2	72.7a	-999i	56.1	-999i	32.9	22.3	43.2b
1989	23.0	14.1	38.1	45.8	53.9	60.7	72.0	65.9	58.0	46.8	35.8	23.7	44.8
1990	27.1	26.4	35.7	45.4	49.3	63.8	68.5	67.7	62.0	-999z	35.9	15.9	45.2a
1991	20.6	33.2	36.5	41.0	51.6	62.2	69.0	68.9	57.4	46.0	28.3	23.4	44.8
1992	21.9	30.3	38.9	48.6	56.2	61.7	65.1	66.4	59.9	49.3	28.2	20.2a	45.6
1993	19.8	20.0	33.7	41.7	54.1	57.8	62.9	64.5	56.5	45.4	26.7	24.4	42.3
1994	27.0	24.4	38.3	44.4	57.0	64.6	-999t	70.3	59.8	45.6	28.9	-999o	46.0b
1995	-999q	31.5	35.5	41.1	46.5	58.5	-999w	70.5	-999j	44.9	-999m	29.1	44.7d
1996	22.0	28.4	33.0	-999k	51.1	64.2	-999u	69.5	57.3a	46.0	36.1	27.4	43.5b
1997	-999z	24.6	37.2	38.3	53.5	63.9	68.5	67.5	61.1	46.4	31.0	20.9	46.6a
1998	28.7	28.2	29.5	42.2	-999z	55.4	71.3	68.7	62.8a	45.9	36.5	25.3	45.0a
1999	28.4	30.8	38.6b	38.9	51.4d	61.7	72.1	70.1a	-999j	49.5d	44.2	27.0	46.6a
2000	27.3e	32.8	35.2	46.1	56.8d	62.0b	72.3b	73.3a	57.8	46.4	20.0	21.1a	45.9

Appendix 2.1.4.B. Temperature data - average temperatures - Muddy Gap station

ID: 486595
Latitude: 42.36 degrees
Longitude: -107.44 degrees
Elevation: 6248 feet
Station period of record: 03/14/1950-07/01/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
2001	20.9	22.1	32.7	44.2	54.8a	64.4a	74.7a	72.0	62.3b	46.7	-999m	22.9	47.1a
2002	20.2	25.5	27.3	44.1	51.8	66.2	74.7	67.4	59.8	41.4	30.5	27.1	44.7
2003	31.5	23.5	35.6	48.9e	54.0	59.4	73.7	73.6	56.9	50.9	27.0	-999f	48.6a
2004	-999z	-999z	-999z	-999z	53.6	58.6e	-999z	-999z	-999z	-999z	-999z	-999z	-999j
Max value	31.5	34.4	41.0	48.9	57.0	70.2	74.7	73.6	62.8	51.5	44.2	35.3	47.0
Min value	9.5	14.1	22.3	31.9	45.5	52.8	62.7	62.2	47.5	38.0	20.0	14.2	40.8
Mean	22.6	25.5	32.4	42.0	52.0	61.3	69.1	67.7	57.6	46.4	31.9	23.9	44.0
Std Dev	5.0	4.7	4.5	3.8	2.9	3.2	2.8	2.7	3.4	2.9	4.4	4.1	1.4
No. years	47.0	49.0	50.0	49.0	50.0	50.0	46.0	49.0	48.0	49.0	48.0	48.0	31.0

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Muddy Gap station

ID: 486595
Latitude: 42.36 degrees
Longitude: -107.44 degrees
Elevation: 6248 feet
Station period of record: 03/14/1950-07/01/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1950	-999z	-999z	-999l	54.0	58.1	71.7	77.1	78.3	68.1	63.8	43.2	40.9	61.7c
1951	27.0	35.8	37.5	51.4	62.5	65.6	83.8	79.5	67.1	55.2	38.5	29.5	52.8
1952	28.9	31.8	32.5	54.7	66.5	76.4	82.7	83.0a	76.3	67.4	38.6	33.5	56.0
1953	39.6	34.0	45.5	50.2	57.9	78.0	87.7	81.5	75.5	62.2	49.6	33.2	57.9
1954	36.5	45.5	39.2	60.2	67.9	75.7	86.9	82.9	75.4	59.6	50.7	32.6	59.4
1955	27.9	27.9	36.0	51.6	66.7	74.0	84.5	84.5	72.9	61.4	40.7	35.5	55.3
1956	35.7	29.6	45.5	56.1	68.5	-999f	83.5	78.5	78.5	61.9	38.4	34.1	55.5a
1957	24.9	41.3	45.4	50.0	60.6	73.3	83.9	81.8	71.8	59.0	34.7	34.6	55.1
1958	31.2	42.5	37.5	51.9	71.1	77.1	81.9	84.1	75.4	64.2	46.3	37.9	58.4
1959	33.7a	32.6	40.1	55.3	63.0	80.6	85.1	83.0	69.3	57.4	45.0	40.3	57.1
1960	28.4	24.9	45.0	59.7	67.6	79.1	86.7	83.2	76.7	60.5	41.1	34.2	57.3
1961	34.7	38.3	45.6	54.3	66.8	79.3	84.3	83.1	63.8	57.9	37.2	28.3	56.1
1962	24.2	34.6	37.1	61.7	66.0	75.3	81.9	82.7	75.8	64.7	51.0	40.1	57.9
1963	27.0	46.0	41.0e	54.5	68.0	77.0	85.5c	80.6	76.5	66.3e	49.3c	33.8a	58.8
1964	28.6	27.6	33.7	51.3	65.2	70.6	87.2	80.2	72.9	64.7	40.9	30.6	54.5
1965	35.1	34.5	35.4	54.4	60.8	72.0	81.5	78.6	60.1a	67.1	49.3	32.9	55.1
1966	29.1	29.5	45.9	55.2a	70.4	74.9	87.1	80.9	74.7	57.4	45.8	29.9	56.7
1967	-999z	36.9	48.5	55.6	61.0	70.8	82.6	82.7	73.3	62.9	43.8	26.4	58.6a
1968	30.6	36.4	45.8	51.1	62.0	76.0	83.0	77.3	71.9	62.1	41.9	29.3	55.6
1969	37.4	35.9	36.7	59.4	72.0a	71.1a	86.1c	86.3	76.8	48.3	44.4	36.6	57.6
1970	34.1	-999h	40.9	45.1	68.3	75.3	83.9	85.3	70.1	55.0	43.1	31.6	57.5a
1971	32.9	36.0	43.1	52.6b	63.2	77.4a	82.3	84.2	65.6	55.0	35.8	26.5a	54.6
1972	28.1b	34.7	50.9	55.1	66.1	76.9	83.4c	80.3	70.3	57.9	35.8	25.8	55.4
1973	23.8	27.8b	36.7	41.6b	-999g	76.1	78.9	83.9	-999z	60.1	40.5	34.7	50.4b
1974	26.2	31.3	45.4	54.7	65.9d	-999g	85.0	77.7	71.6	60.9	43.4	30.4	53.9a
1975	28.4	31.1	38.5	47.5	60.6	72.3	86.2	81.7	70.4	58.6	41.2	35.1	54.3
1976	30.6	33.7	42.3	55.8	68.7b	71.2b	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1977	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1978	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	64.9a	40.8a	-999z	-999j
1979	18.0d	32.2a	40.7b	-999g	63.4d	-999z	-999z	77.7a	77.4a	-999z	-999z	-999z	-999f
1980	-999z	-999z	-999z	53.8	60.4e	77.9a	86.7c	-999j	73.9b	58.8	43.1a	45.3	62.5d
1981	42.6	41.7	47.6a	62.1b	62.3	80.2b	86.0	83.6	76.3b	55.8	-999z	39.5c	61.6a
1982	32.7	35.2	46.7	53.5	63.8	73.9	84.9	87.8	68.8	55.4	39.0	30.6a	56.0
1983	36.9	34.9	43.3	46.4a	60.2	73.5	85.1	88.2	76.8	63.3	41.8	25.2	56.3
1984	26.3	31.6	39.0	49.1	69.2	77.0	86.7	85.7	71.2	53.7	44.3	30.4	55.3
1985	24.6	28.4	43.8	60.4	71.1	80.1	86.5	85.3	68.4	60.9	35.1	28.3	56.1
1986	36.8	37.1a	54.1	-999z	66.0	84.3	81.7	85.0	68.6	57.2	43.3	34.6b	59.0a
1987	30.4	35.7	41.7	63.9	69.3	80.6	83.9	82.1	75.8	63.5	42.0	31.6	58.4
1988	28.1	38.1	41.4	61.6	69.8a	86.6	90.3a	-999i	72.8	-999i	44.3	31.4	56.4b
1989	32.0	22.5	50.4	61.4	69.4	76.2	88.3	81.0	73.3	58.9	46.5	34.0	57.8
1990	35.7	37.8	48.2	59.6	64.4	80.5	83.8	84.1	77.6	-999z	44.2	26.1	58.4a
1991	29.4	44.7	48.6	52.7	64.1	77.3	84.8	85.1	72.9	60.7	37.4	30.8	57.4
1992	29.8	39.1	50.8	64.3	70.8	76.4	80.8	83.2	74.9	64.9	36.3	27.8a	58.2
1993	28.5	28.7	43.4	53.5	67.6	71.9	78.9	80.5	72.1	57.7	36.0	31.9	54.2
1994	35.7	33.3	50.8	58.6	73.5	82.4	-999s	87.7	75.8	57.2	38.5	-999o	59.4b
1995	-999q	40.8	48.0	53.0	58.9	73.3	-999w	86.6	-999j	56.8	-999m	38.8	57.0d
1996	32.1	40.3	46.8	-999i	64.5	80.7	-999u	87.2	72.3	58.0	44.2	35.1	56.1b
1997	-999z	33.8	49.4	51.0	68.5	78.5	84.7	82.5	73.5	59.5	41.3	29.4	59.3a
1998	36.1	36.0	40.6	55.0	-999z	68.1	86.7	84.4	77.1a	57.2	45.6	34.6	56.5a
1999	37.5	39.6	52.8	50.0	64.0c	75.5	87.8	84.6	-999j	64.6c	55.5	36.0	58.9a
2000	35.8	42.0	45.8	60.2	70.8	78.5	89.8	88.5	71.3	58.4	27.5	29.4	58.2

Appendix 2.1.4.B. Temperature data - maximum temperatures - Muddy Gap station

ID: 486595
Latitude: 42.36 degrees
Longitude: -107.44 degrees
Elevation: 6248 feet
Station period of record: 03/14/1950-07/01/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
2001	28.5	30.0	42.5	56.2	69.2	80.6	90.1	87.0	76.5	60.2	-999m	30.5	59.2a
2002	28.5	35.1	38.9	58.4	67.2	82.6	90.8	83.3	74.3	55.1	39.4	34.1	57.3
2003	39.8	33.5	44.6	62.0e	67.5	72.9	90.5	88.2	70.7	65.7	35.1	-999f	60.9a
2004	-999z	-999z	-999z	-999z	66.7	74.2	-999z	-999z	-999z	-999z	-999z	-999z	-999j
Max value	42.6	46.0	54.1	64.3	73.5	86.6	90.8	88.5	78.5	67.4	55.5	45.3	59.4
Min value	18.0	22.5	32.5	41.6	57.9	65.6	77.1	77.3	60.1	48.3	27.5	25.2	52.8
Mean	31.3	34.9	43.4	54.9	65.8	76.2	84.9	83.2	72.8	60.0	41.9	32.8	56.5
Std Dev	4.97	5.2	5.1	5.0	3.9	4.1	3.1	3.0	3.9	4.0	5.1	4.3	1.6
No. years	47.0	49.0	50.0	49.0	51.0	50.0	47.0	49.0	48.0	49.0	48.0	48.0	31.0

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Muddy Gap station

ID: 486595
Latitude: 42.36 degrees
Longitude: -107.44 degrees
Elevation: 6248 feet
Station period of record: 03/14/1950-07/01/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1950	-999z	-999z	-999m	29.1	32.9	42.5	48.3	47.5	42.2	39.0	22.2	18.5	35.8c
1951	4.7	15.9	15.7	26.1	37.7	39.9	54.0	49.5	37.9	33.4	18.9	10.8	28.7
1952	12.3	12.7	12.2	31.5	38.5	49.1	51.9	55.4a	41.9	32.3	15.0	15.9	30.7
1953	21.1	12.5	22.3	25.6	35.1	50.9	56.5	56.4	47.9	34.4	26.9	13.6	33.6
1954	19.9	23.3	17.5	33.3	37.5	46.8	58.7	52.3	45.7	33.3	28.3	17.5	34.5
1955	12.4	11.9	15.3	29.1	38.3	44.1	50.8	56.1	44.7	33.0	19.6	18.7	31.2
1956	18.5	9.7	21.8	26.4	41.1	-999f	51.1	49.9	42.1	36.6	18.6	14.9	30.1a
1957	5.9	23.5	21.6	26.5	39.6	45.9	54.2	54.0	38.5	34.5	17.9	19.2	31.8
1958	14.0	24.5	14.6	27.4	41.7	45.4	48.9	52.6	43.4	33.4	19.9	19.9	32.1
1959	12.5a	14.6	20.0	29.7	35.4	48.6	51.5	52.5	41.2	31.4	16.5	17.6	31.0
1960	14.5	5.3	18.9	32.7	37.4	48.5	52.6	49.0	42.6	33.5	23.1	12.9	30.9
1961	14.2	19.1	24.2	28.0	38.6	49.7	51.8	53.2	38.3	30.6	19.2	12.7	31.6
1962	6.2	19.0	17.4	32.4	38.8	45.3	50.4	51.5	39.0	35.4	27.0	18.5	31.7
1963	2.4	20.6	19.1e	28.6	40.6	46.3	52.9c	53.8	46.2	36.7e	27.1c	15.5a	32.5
1964	12.8	9.0	13.8	28.5	38.3	44.4	56.4	50.4	40.0	33.3	18.7	13.9	30.0
1965	19.3	16.4	10.4	32.6	36.1	46.5	52.9	49.8	34.9a	34.3	28.8	19.2	31.7
1966	13.0	11.1	22.4	25.6	38.8	46.4	56.6	49.3	44.8	32.6	25.7	15.5	31.8
1967	-999z	17.2	27.4	29.3	35.6	45.3	52.8	52.0	46.2	34.2	22.8	7.0	33.6a
1968	15.5	18.1	25.8	25.6	35.5	47.2	53.5	49.7	38.8	33.6	21.3	10.5	31.3
1969	19.8	18.2	13.7	34.2	40.0a	42.5a	54.1c	55.7	46.8	27.7	25.1	19.8	33.2
1970	17.5	-999h	17.1	24.4	38.9	44.7	54.2	53.0	37.7	25.9	25.1	15.6	32.2a
1971	18.9	16.3	22.3	28.3b	35.3	46.7a	49.9	54.0	40.5	28.7	20.7	13.2a	31.2
1972	10.5b	17.6	28.0	28.8	37.1	47.8	48.8c	47.7	36.1	32.0	21.0	8.5	30.3
1973	7.1	10.3b	18.8	22.1b	-999g	45.7	52.5	53.3	-999z	32.0	23.3	16.8	28.2b
1974	8.1	15.0	25.2	30.1	35.5d	-999g	55.0	46.7	38.4	32.0	24.9	11.9	29.3a
1975	13.2	13.0	20.3	24.7	32.0	43.6	57.0	49.9	37.8	32.6	19.6	17.9	30.1
1976	12.9	15.7	21.7	31.1a	38.5c	46.4b	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1977	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1978	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	31.5a	16.9a	-999z	-999j
1979	0.5c	15.9a	24.2c	28.8b	36.6d	-999z	-999z	50.1a	45.3	-999z	-999z	-999z	28.8e
1980	-999z	-999z	-999z	29.7	-999f	45.9b	-999f	-999i	42.5b	31.2	20.7a	25.4	-999f
1981	18.0	16.7	23.9a	31.9b	38.5	47.2b	53.1	50.7	47.5b	32.0a	-999z	18.3d	34.3a
1982	11.6	14.2	23.6	25.3	36.7	43.9	53.1	55.2	43.0	32.7	20.3	15.7	31.3
1983	21.4	18.6	23.8	24.0	33.8	46.0	52.7	56.8	43.2	34.8	22.8	3.3	31.8
1984	13.1	15.1	22.9	27.5	37.8	44.1	52.9	55.5	37.9	26.7	21.7	9.8	30.4
1985	8.5	11.0	21.4	29.2	39.2	44.9	54.0	49.1	39.5	32.0	15.1	12.5a	29.7
1986	21.8	15.6b	27.9	-999z	36.8a	51.6	51.7	49.9	40.4	32.6	20.4	14.0b	33.0a
1987	10.7	16.1	21.4	32.4	41.5	47.8	53.0	49.0	40.8	32.5	24.7	12.7	31.9
1988	8.8	16.2	20.0	31.3	39.5	53.7	54.9	-999i	39.4	-999i	21.4	13.3	29.9b
1989	13.9	5.6	25.8	30.1	38.5	45.3	55.6	50.8	42.7	34.6	25.0	13.5	31.8
1990	18.5	14.9	23.3	31.1	34.3	47.1	53.1	51.3	46.4	-999z	27.5	5.6	32.1a
1991	11.8	21.7	24.3	29.4	39.2	47.1	53.1	52.7	41.8	31.3	19.1	15.9	32.3
1992	14.0	21.4	26.9	33.0	41.6	47.0	49.4	49.6	44.9	33.7	20.1	12.4	32.8
1993	11.1	11.3	24.0	29.8	40.5	43.6	46.9	48.5	41.0	33.0	17.3	17.0	30.3
1994	18.3	15.6	25.8	30.2	40.5	46.8	-999t	52.9	43.8	34.1	19.2	-999o	32.7b
1995	-999q	22.3	22.9	29.2	34.1	43.6	-999v	54.4	-999i	32.9	-999m	19.4	32.4d
1996	12.0	16.4	19.2	-999k	37.8	47.7	-999t	51.7	42.2a	33.9	28.0	19.7	30.9b
1997	-999z	15.4	25.1	25.6	38.6	49.2	52.3	52.6	48.7	33.4	20.6	12.4	34.0a
1998	21.4	20.3	18.5	29.4	-999z	42.6	55.8	52.9	48.3	34.6	27.4	16.0	33.4a
1999	19.3	21.9	24.2b	27.7	38.6d	47.9	56.4	55.4a	-999i	34.6d	32.9	18.1	34.3a
2000	19.2e	23.7	24.6	32.1	42.6d	45.6b	54.9b	57.7a	44.4	34.4	12.5	12.7a	33.7

Appendix 2.1.4.B. Temperature data - minimum temperatures - Muddy Gap station

ID: 486595
Latitude: 42.36 degrees
Longitude: -107.44 degrees
Elevation: 6248 feet
Station period of record: 03/14/1950-07/01/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
2001	13.4	14.3	23.0	32.2	40.6a	48.2a	59.1a	56.9	48.1b	33.3	-999l	15.3	34.9a
2002	11.9	15.9	15.7	29.8	36.5	49.7	58.5	51.5	45.3	27.7	21.7	20.0	32.0
2003	23.3	13.4	26.7	35.9e	40.5	45.8	56.9	59.0	43.1	36.2	18.9	20.4b	35.0
2004	-999z	-999z	-999z	-999z	40.5	43.3e	-999z	-999z	-999z	-999z	-999z	-999z	-999j
Max value	23.3	24.5	28.0	35.9	42.6	53.7	59.1	59.0	48.7	39.0	32.9	25.4	35.0
Min value	0.5	5.3	10.4	22.1	32.0	39.9	46.9	46.7	34.9	25.9	12.5	3.3	28.7
Mean	13.8	16.0	21.3	29.2	38.0	46.3	53.4	52.2	42.4	32.9	21.9	15.1	31.7
Std Dev	5.32	4.4	4.3	2.9	2.4	2.5	2.8	2.9	3.5	2.5	4.2	4.2	1.4
No. years	47.0	49.0	50.0	50.0	50.0	50.0	46.0	49.0	48.0	49.0	48.0	49.0	32.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - Pine Bluffs station

ID: 487235
Latitude: 41.18 degrees
Longitude: -104.07 degrees
Elevation: 5074 feet
Station period of record: 01/01/1919-02/29/1988
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1919	31.4	24.8	35.4	44.1	54.0	65.9	72.8	70.3	62.3	41.7	30.0a	23.7	46.4
1920	30.6	28.9	34.6	34.9	53.6	62.5	68.9	65.5	60.1	47.4	33.1	27.8	45.7
1921	27.5	28.8	38.6	41.9	51.0	64.9	71.0	69.1	60.7	51.6	37.3	28.5	47.6
1922	18.8	24.7a	35.4	40.6	52.9	66.0	67.9	72.6	64.5	49.4	29.0	27.0	45.7
1923	31.5	24.5	30.8	42.3	52.6	62.6	70.7	67.6	59.9	41.4	38.8	26.4	45.8
1924	22.9	32.3	25.0	41.7	48.7	62.9	69.0	69.1	57.2	49.8	36.9	19.0	44.5
1925	25.0	34.7	38.8c	48.9a	55.1	64.0	71.4	68.1	61.7	39.4	34.6	25.9	47.3
1926	22.7	33.9	34.8	45.0	55.8	63.7	68.7	69.4	57.2	49.9	38.3	26.4	47.2
1927	29.5c	30.7	33.2	43.0	54.8	61.1	67.3	65.0	59.0	50.0	38.9	22.2	46.2
1928	32.2	30.7	38.3	42.9	56.2a	57.4	69.1	67.5	58.4	47.0	33.6	21.3	46.2
1929	18.2	16.0	32.9	38.1	47.5a	61.5	72.3	72.2	55.3	48.0	24.5	30.6a	43.1
1930	9.6	34.6	32.3	51.8	50.4	64.2	72.5	69.7	59.7	46.4	37.4	29.0	46.5
1931	30.8	33.9	32.6	44.5	52.2	69.7	74.1	70.0	65.5	49.8	32.9	31.6	49.0
1932	21.9	34.2	28.9	47.6	57.0	64.1	73.5	72.4	61.3	44.8	39.8	17.8	46.9
1933	29.5	23.9	39.4	42.9	52.2	70.5	74.7	69.4	64.0	51.7	40.0	36.6	49.6
1934	34	33.3	38.6	48.1	62.8	67.4	75.9	72.1	56.9	53.6	39.5	29.8	51.0
1935	32.8	34.1	38.7	41.0	48.1	62.7	74.3	72.6	61.7	49.1	34.0	28.6	48.1
1936	24.6	17.6	37.3	46.2	58.6	69.5	76.8	72.4	62.8	47.1	38.3	31.0	48.5
1937	11.6	27.3	34.4	45.1	56.9	64.0	72.5	74.4	64.0	50.9	35.3	25.8	46.8
1938	27.1	31.4	40.4	46.3	53.6	65.2	70.2	72.5	62.6	51.2	32.9	27.2	48.4
1939	29.1	21.6	37.3	45.9	59.1	63.1	74.1	68.6	63.2	49.7	38.5	35.1	48.8
1940	18.5	30.2	39.9	44.7	56.6	67.5	73.1	69.4	63.7	52.6	31.4	31.4	48.3
1941	29.8	31.8	33.4	44.6	58.5	61.7	70.5	69.9	58.3	47.0	38.0	29.3	47.7
1942	22.0	22.9	34.3	48.7	52.5	62.6	71.2	68.3	59.3	49.1	37.7	30.3	46.6
1943	29.5	36.5	31.5	51.6	51.1	62.1	72.8	72.4	59.7	46.8	37.4	30.2	48.5
1944	27.8	29.6	30.3	41.7	55.9	63.3	69.2	70.3	60.1	50.9	36.6	25.9	46.8
1945	27.9	30.8	37.0	39.4	53.7	59.0	70.5	70.1	58.1	51.4	37.8	25.3	46.7
1946	29.2	32.2	41.0	52.1	50.2	64.8	72.3	69.4	60.9	46.0	34.2	34.2	48.9
1947	28.6	26.7	33.3	44.4	54.7	60.1	72.1	72.8	63.2	53.8	29.3	31.4	47.5
1948	26.2	26.6	30.4	49.1	57.1	64.8	70.6	70.7	64.8	48.2	33.2	24.2	47.2
1949	13.4a	27.0b	35.8a	-999h	56.3d	63.9	72.7	69.7	59.5	47.1	44.5	27.9	47.1a
1950	23.7	34.0	33.2	43.4	49.3	63.2	67.4	66.9	57.8	53.3	35.7	33.1	46.8
1951	23.7	30.8	31.0	39.8	54.5	57.3	71.2	67.7	57.1	46.7	34.8	25.0	45.0
1952	27.2	31.0	29.9	45.8	54.5	70.1	70.2	70.8	62.4	49.0	29.3	26.6	47.2
1953	36.1	28.6	38.7	39.1	51.0	66.7	72.7	69.7	62.8	50.8	39.0	28.6	48.7
1954	31.9	39.7	30.5	49.8	53.0	65.5	75.0	70.5	63.1	47.5	40.0	31.1	49.8
1955	21.7	22.6	31.3	46.5	55.6	60.4	73.2	71.3	60.4	50.8	30.9	29.9	46.2
1956	28.8	25.8	35.3	41.4	57.0	69.3	70.2	67.3	62.1	51.4	34.3	33.3	48.0
1957	21.2a	35.4	34.1	40.5	51.4	62.9	72.1	70.2	57.3	49.0	33.4	36.3	47.0
1958	30.5	32.3	28.3	41.7	59.9	64.8	67.1	71.1	61.2	50.9	37.1	30.5	47.9
1959	27.2	25.9	32.4	42.4	53.7	68.6	71.2	72.5	57.7	45.0	33.7	33.4	47.0
1960	25.4	23.0	34.9	47.8	54.9	64.8	71.2	69.5	62.2	49.9	37.2	28.5	47.4
1961	30.5	34.3	35.2	41.6	53.7	66.0	71.2	71.4	53.8	46.8	32.4	26.1	46.9
1962	19.3	29.9	32.4	48.3	57.0	63.6	70.0	68.9	60.0	51.1	40.6	31.5	47.7
1963	17.3	34.7	35.9	46.0	58.1	67.6	75.0	70.5	65.0	55.9	39.9	26.4	49.3
1964	28.5	23.6	28.8	43.3	57.0	62.3a	75.0	68.4	59.1	48.8	36.7	28.7	46.7
1965	31.8	26.8	23.7a	46.8	53.3a	62.2	70.4	67.5	52.5	53.0	41.6	31.0	46.7
1966	24.4	26.7	39.5	41.9	57.4	63.6	75.4	68.9	62.2	48.5	39.2a	29.1	48.1
1967	31.5	34.6	40.7	46.2	51.5	61.4	69.7	67.7	60.4	50.6	34.1	23.5	47.7
1968	28.3	32.0	38.0	41.0	51.0	65.6	-999z	66.4	58.4	49.5	34.2	26.4	44.6a
1969	27.7	31.1	29.5	48.2	56.6	58.9	72.2	71.4a	62.8	38.0	37.6	31.6	47.1
1970	27.8	34.8	31.2	39.6	57.5	63.5	72.4	73.0	57.8	43.1	36.5	27.1	47.0
1971	29.2	28.6	33.9	44.9	52.6	66.8	68.9	72.3	53.8e	47.4	36.9	27.8	46.9

Appendix 2.1.4.B. Temperature data - average temperatures - Pine Bluffs station

ID: 487235
Latitude: 41.18 degrees
Longitude: -104.07 degrees
Elevation: 5074 feet
Station period of record: 01/01/1919-02/29/1988
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1972	-999z	34.3	43.3b	44.8	53.1	65.9	66.9	66.8	58.7	46.9	30.8	20.2	48.3a
1973	24.2	31.8	34.7	41.1	53.0	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999g
1974	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1975	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1976	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1977	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1978	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1979	-999z	-999z	-999z	-999z	-999z	-999z	-999z	65.9	63.6	50.0	27.7	31.8	-999g
1980	21.0	26.3	30.7	42.7a	51.1	65.9	73.3	68.4	60.8	46.2	35.9a	35.2	46.5
1981	31.3	30.1	37.0	49.9	51.5	65.5	70.1	68.0	61.9	46.1	40.5	30.6	48.5
1982	23.6	26.9	36.2	41.8	52.6	60.2	70.3	70.5	58.1	45.8	31.1	28.4	45.4
1983	33.4	34.4	34.6	38.4	48.9	61.0	71.0	74.0	59.5	48.4	31.7	13.0b	45.7
1984	24.2	30.9	34.0	37.9	56.0	62.6	71.1	70.8	54.8	41.1	35.9	25.7	45.4
1985	20.1	-999i	36.4	48.5	57.3	63.4	71.2	68.5	55.0	45.8	23.5	23.8	46.7a
1986	33.3	30.9b	42.6	45.9	53.9	67.8	71.7	69.5	57.5	46.2	34.0	27.7	48.4
1987	28.5	31.5	33.6	49.7	57.1	66.5	71.7	65.9	58.2	46.9	36.3	25.5	47.6
1988	19.6	29.3	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
Max value	36.1	39.7	43.3	52.1	62.8	70.5	76.8	74.4	65.5	55.9	44.5	36.6	51.0
Min value	9.6	16.0	23.7	34.9	47.5	57.3	66.9	65.0	52.5	38.0	23.5	13.0	43.1
Mean	26.1	29.7	34.5	44.3	54.2	64.1	71.5	69.8	60.0	48.3	35.3	28.1	47.2
Std Dev	5.6	4.6	4.0	3.8	3.1	3.0	2.3	2.2	3.0	3.4	4.0	4.4	1.4
No. years	63.0	63.0	63.0	62.0	63.0	62.0	61.0	63.0	63.0	63.0	63.0	63.0	58.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Pine Bluffs station

ID: 487235
Latitude: 41.18 degrees
Longitude: -104.07 degrees
Elevation: 5074 feet
Station period of record: 01/01/1919-02/29/1988
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1919	45.9	37.4	49.8	58.3	71.2	83.6	88.2	87.1	76.8	54.9	41.5	35.8	60.9
1920	42.9	40.6	48.5	45.4	65.6	76.2	85.6	81.4	77.9	64.6	45.5	40.9	59.6
1921	41.3	40.1	52.3	55.2	62.1	78.8	87.5	84.5	78.1	70.5	51.6	39.8	61.8
1922	32.1	38.2	50.1	52.3	66.8	81.8	83.3	88.3	82.4	67.7	40.1	38.7	60.2
1923	43.5	38.9	43.4	57.4	65.5	75.4	84.9	81.3	75.1	53.0	52.2	40.9	59.3
1924	37.3	45.4	35.5	56.1	63.6	79.6	85.3	88.2	73.6	65.2	51.6	30.1	59.3
1925	37.6	49.4	55.2	64.5	70.1	78.7	87.1	83.2	78.0	52.4	47.9	38.3	61.9
1926	34.4	45.4	48.5	61.3	71.0	78.0	83.9	87.5	74.8	65.9	50.5	38.4	61.6
1927	43.5c	44.6	44.0	56.5	69.5	74.6	82.9	79.0	75.2	68.6	53.2	36.1	60.6
1928	43.6	44.5	52.5	58.4	69.6a	69.8	84.9	85.7	76.8	60.8	45.4	32.0	60.3
1929	30.2	27.7	42.4	49.3	57.6a	77.8	89.2	89.8	70.0	63.9	36.7	41.2	56.3
1930	22.7	45.7	45.8	66.7	63.7	83.1	90.2	84.8	77.7	61.3	52.6	43.0	61.4
1931	45.6	47.7	46.1	60.6	68.1	87.7	92.4	88.7	84.0	65.9	48.6	47.7	65.3
1932	35.5	48.1	42.7	62.8	71.7	80.8	91.4	90.1	80.2	61.7	54.9	31.5	62.6
1933	45.6	40.2	54.5	58.2	66.8	89.8	92.5	85.6	82.1	71.8	56.3	51.1	66.2
1934	48.5	47.6	53.5	64.6	80.9	86.4	95.7	90.3	77.0	71.7	55.4	44.8	68.0
1935	50.5	51.5	54.9	54.7	58.6	78.2	93.1	91.4	80.4	67.4	47.9	42.0	64.2
1936	38.1	33.4	52.4	62.4	75.2	86.8	96.5	91.6	82.2	62.5	54.5	45.7	65.1
1937	26.7	41.1	48.1	61.7	73.0	79.7	90.6	94.0	83.3	68.0	49.7	39.0	62.9
1938	39.3	46.3	53.3	62.0	68.0	80.9	86.8	90.4	78.5	68.4	47.0	39.1	63.3
1939	39.4	35.3	51.5	61.8	76.5	80.8	93.8	88.4	82.7	68.3	57.2	50.1	65.5
1940	29.0	41.4	53.8	59.0	73.3	85.6	91.2	87.9	79.4	69.8	46.1	45.6	63.5
1941	45.4	45.7	45.3	58.0	75.1	76.6	87.8	86.4	76.1	61.5	54.6	44.2	63.1
1942	36.0	35.7	48.8	65.8	68.5	76.1	89.6	85.4	76.9	64.8	54.1	42.6	62.0
1943	44.6	53.1	47.7	67.7	64.9	77.1	91.7	89.8	80.0	68.4	52.9	44.3	65.2
1944	42.3	44.2	42.4	54.8	72.9	79.2	86.4	89.1	80.9	69.9	50.5	38.5	62.6
1945	39.8	42.2	54.5	52.4	69.8	72.6	86.8	85.8	75.7	68.6	53.0	38.2	61.6
1946	43.5	48.4	58.1	68.6	62.8	82.9	89.5	85.3	78.5	59.6	46.5	47.6	64.3
1947	42.2	39.6	46.7	57.7	69.5	74.2	89.1	90.5	81.3	69.7	40.8	43.3	62.0
1948	38.3	39.6	43.8	65.7	73.1	78.8	87.3	87.6	83.2	66.3	45.1	37.1	62.2
1949	25.9a	41.2a	48.9a	-999h	70.4d	78.0	89.5	87.3	76.5	62.2	60.3	43.4	62.1a
1950	40.1	48.8	47.1	59.3	64.1	81.4	82.9	85.5	70.9	72.4	49.0	46.9	62.3
1951	36.9	45.9	46.5	53.5	68.5	71.3	87.2	83.0	72.7	60.4	49.2	37.4	59.4
1952	41.1	44.4	41.7	61.7	68.6	87.7	88.7	87.1	81.4	67.7	43.2	38.2	62.6
1953	48.5	41.5	55.0	52.6	64.4	83.2	89.2	86.4	81.4	68.6	53.4	41.3	63.8
1954	47.0	56.6	45.1	66.9	67.6	82.9	92.7	88.2	80.2	62.6	55.3	44.8	65.8
1955	34.1	36.1	46.1	63.3	71.1	74.6	91.2	86.8	77.3	67.9	43.2	42.4	61.2
1956	41.9	38.7	50.6	57.0	72.1	88.5	87.1	84.2	82.1	70.3	45.9	45.3	63.6
1957	34.6a	51.4	47.1	52.3	64.0	78.6	90.2	86.4	75.0	60.9	45.3	50.2	61.3
1958	45.0	46.1	38.7	53.4	75.7	80.4	82.7	89.0	78.1	68.6	52.3	42.3	62.7
1959	41.1	37.4	44.9	56.7	66.9	85.5	88.9	88.4	72.8	59.5	48.8	48.1	61.6
1960	38.1	32.7	48.1	62.8	71.2	80.1	89.1	87.7	79.3	65.2	51.5	41.2	62.2
1961	45.0	48.1	46.5	54.9	67.6	82.5	88.4	88.5	69.0	62.8	46.1	39.2	61.5
1962	33.8	42.6	45.8	64.7	72.1	78.4	85.6	87.7	77.1	67.2	55.3	45.6	63.0
1963	32.0	47.7	48.9	61.4	74.8	85.4	92.5	85.9	80.6	73.1	55.9	39.8	64.8
1964	42.9	36.2	42.1	55.5	72.3	77.9	93.7	85.4	77.6	66.9	51.1	42.4	62.0
1965	46.5	40.0	36.1	61.6	68.4	76.2	86.6	84.1	65.8	69.4	56.1	45.7	61.4
1966	39.0	40.1	56.7	58.7	76.1	78.8	91.7	84.4	77.3	64.4	52.7a	42.2	63.5
1967	44.4	47.1	56.2	62.0	64.3	74.6	84.8	84.8	76.0	67.1	49.3	36.0	62.2
1968	43.2	44.9	52.9	54.9	64.3	81.4	-999z	82.6	75.6	65.3	46.5	42.0	59.4a
1969	42.4	45.5	42.2	63.3	72.2	73.4	88.8	89.2a	78.9	48.7	51.6	45.1	61.8
1970	40.5	50.5	43.1	52.3	74.1	80.4	89.6	90.5	74.2	57.1	49.8	42.2	62.0
1971	41.4	42.5	46.6	59.3	65.7	82.9	85.0	90.0	71.3	63.1	51.1	42.6	61.8

Appendix 2.1.4.B. Temperature data - maximum temperatures - Pine Bluffs station

ID: 487235
Latitude: 41.18 degrees
Longitude: -104.07 degrees
Elevation: 5074 feet
Station period of record: 01/01/1919-02/29/1988
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1972	-999z	46.8	58.0b	57.5	67.1	81.0	83.0	81.6	75.0	61.2	41.4	31.7	62.2a
1973	34.9	45.3	44.5	53.7	67.3	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999g
1974	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1975	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1976	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1977	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1978	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1979	-999z	-999z	-999z	-999z	-999z	-999z	-999z	81.6	80.7	65.5	39.5	44.1	-999g
1980	32.8	39.0	43.0	56.6a	64.9	84.5	91.0	85.7	79.1	62.3	50.7a	50.3	61.7
1981	46.7	45.4	50.1	65.4	64.5	81.7	86.2	83.5	79.0	60.8	56.1	43.8	63.6
1982	37.9	41.9	50.3	58.3	66.5	74.7	86.6	86.5	72.3	59.6	44.8	39.7	59.9
1983	45.6	47.9	45.5	50.0	61.8	74.1	87.8	89.8	77.8	65.2	46.1	26.0a	59.8
1984	37.5	43.6	45.6	49.2	71.5	78.6	86.9	86.3	71.1	55.8	52.5	41.5	60.0
1985	32.1	-999i	51.5	63.4	73.5	79.9	87.5	87.0	70.4	61.7	36.0	35.9	61.7a
1986	46.7	45.2b	57.2	59.0	68.1	82.2	87.7	85.0	71.3	59.0	46.7	41.1	62.4
1987	41.3	42.6	44.2	66.0	68.7	81.5	87.8	79.8	74.6	63.9	48.8	38.4	61.5
1988	31.3	40.7	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
Max value	50.5	56.6	58.1	68.6	80.9	89.8	96.5	94.0	84.0	73.1	60.3	51.1	68.0
Min value	22.7	27.7	35.5	45.4	57.6	69.8	82.7	79.0	65.8	48.7	36.0	26.0	56.3
Mean	39.6	43.2	48.1	58.8	68.8	79.9	88.5	86.6	77.2	64.4	49.4	41.3	62.3
Std Dev	6.0	5.3	5.2	5.2	4.5	4.3	3.2	3.0	4.0	5.1	5.2	5.0	2.0
No. years	63.0	63.0	63.0	62.0	63.0	62.0	61.0	63.0	63.0	63.0	63.0	63.0	58.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Pine Bluffs station

ID: 487235
Latitude: 41.18 degrees
Longitude: -104.07 degrees
Elevation: 5074 feet
Station period of record: 01/01/1919-02/29/1988
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1919	16.9	12.1	21.0	29.8	36.7	48.1	57.5	53.5	47.8	28.6	18.2a	11.7	31.8
1920	18.4	17.2	20.6	24.4	41.6	48.8	52.2	49.6	42.3	30.3	20.6	14.7	31.7
1921	13.6	17.4	24.8	28.6	40.0	50.9	54.6	53.7	43.2	32.8	23.0	17.2	33.3
1922	5.4	10.9a	20.7	28.8	39.1	50.1	52.4	57.0	46.5	31.0	18.0	15.3	31.3
1923	19.5	10.0	18.3	27.3	39.7	49.8	56.6	53.9	44.6	29.8	25.4	12.0	32.2
1924	8.5	19.3	14.4	27.3	33.7	46.1	52.8	50.0	40.7	34.5	22.1	7.8	29.8
1925	12.4	20.1	22.6c	33.1a	40.0	49.3	55.7	53.1	45.3	26.4	21.4	13.5	32.7
1926	11.0	22.4	21.2	28.8	40.7	49.5	53.5	51.4	39.5	33.8	26.0	14.4	32.7
1927	15.5c	16.7	22.4	29.4	40.0	47.5	51.6	51.0	42.8	31.3	24.6	8.3	31.8
1928	20.7	16.8	24.1	27.4	42.8a	44.9	53.3	49.2	40.0	33.2	21.7	10.6	32.1
1929	6.1	4.2	23.4	27.0	37.3	45.1	55.5	54.5	40.6	32.0	12.3	18.9a	29.7
1930	-3.5	23.4	18.9	37.0	37.0	45.3	54.8	54.5	41.6	31.5	22.3	14.9	31.5
1931	16.1	20.1	19.1	28.3	36.4	51.7	55.7	51.3	46.9	33.7	17.1	15.5	32.6
1932	8.4	20.2	15.0	32.4	42.3	47.5	55.7	54.7	42.4	28.0	24.7	4.0	31.3
1933	13.5	7.5	24.2	27.5	37.5	51.1	57.0	53.2	45.9	31.7	23.7	22.2	32.9
1934	19.5	18.9	23.8	31.7	44.7	48.3	56.2	53.8	36.8	35.5	23.6	14.7	33.9
1935	15.1	16.8	22.6	27.3	37.5	47.2	55.5	53.7	42.9	30.7	20.0	15.2	32.0
1936	11.2	1.9	22.2	30.0	42.0	52.1	57.2	53.2	43.5	31.7	22.1	16.3	32.0
1937	-3.5	13.5	20.6	28.5	40.8	48.2	54.4	54.7	44.6	33.7	20.9	12.7	30.8
1938	14.9	16.6	27.4	30.6	39.2	49.4	53.6	54.6	46.7	33.9	18.7	15.3	33.4
1939	18.8	7.9	23.0	30.0	41.7	45.4	54.5	48.8	43.7	31.1	19.8	20.1	32.1
1940	8.1	19.0	26.1	30.4	40.0	49.3	55.0	50.9	48.0	35.5	16.6	17.1	33.0
1941	14.3	17.8	21.4	31.2	41.9	46.7	53.2	53.5	40.4	32.4	21.4	14.4	32.4
1942	8.0	10.0	19.9	31.5	36.5	49.1	52.8	51.2	41.7	33.3	21.2	17.9	31.1
1943	14.5	19.9	15.3	35.4	37.4	47.0	53.9	54.9	39.3	25.2	21.9	16.1	31.7
1944	13.3	14.9	18.2	28.6	38.9	47.3	52.1	51.5	39.3	32.0	22.6	13.3	31.0
1945	16.0	19.4	19.4	26.4	37.5	45.3	54.1	54.4	40.5	34.3	22.6	12.4	31.9
1946	15	16.0	23.9	35.5	37.5	46.7	55.1	53.6	43.3	32.4	22.0	20.7	33.5
1947	15.0	13.9	19.8	31.0	40.0	46.0	55.1	55.1	45.1	37.8	17.9	19.6	33.0
1948	14.1	13.6	16.9	32.4	41.1	50.8	53.9	53.8	46.3	30.1	21.3	11.4	32.1
1949	0.9a	12.1a	22.6a	-999h	42.2d	49.8	55.8	52.2	42.5	32.1	28.8	12.5	31.9a
1950	7.4	19.3	19.4	27.5	34.5	44.9	51.8	48.2	44.7	34.3	22.5	19.4	31.2
1951	10.6	15.8	15.4	26.1	40.6	43.2	55.3	52.4	41.6	33.1	20.3	12.6	30.6
1952	13.3	17.6	18.1	29.9	40.4	52.4	51.7	54.5	43.4	30.3	15.4	15.1	31.8
1953	23.7	15.8	22.4	25.5	37.7	50.2	56.3	53.1	44.1	32.9	24.6	16.0	33.5
1954	16.9	22.8	15.8	32.6	38.4	48.0	57.4	52.8	45.9	32.5	24.6	17.4	33.8
1955	9.3	9.1	16.5	29.7	40.1	46.3	55.3	55.8	43.5	33.6	18.7	17.4	31.3
1956	15.7	13.0	20.1	25.9	41.8	50.2	53.2	50.4	42.1	32.6	22.6	21.4	32.4
1957	7.8a	19.4	21.1	28.6	38.7	47.2	54.1	54.0	39.6	37.1	21.5	22.4	32.6
1958	15.9	18.5	17.8	30.0	44.1	49.1	51.5	53.2	44.3	33.1	21.9	18.7	33.2
1959	13.4	14.5	19.9	28.1	40.5	51.7	53.5	56.5	42.6	30.5	18.6	18.7	32.4
1960	12.6	13.2	21.6	32.8	38.6	49.6	53.4	51.2	45.1	34.7	22.8	15.9	32.6
1961	16.0	20.5	24.0	28.3	39.7	49.5	53.9	54.3	38.6	30.8	18.6	13.0	32.3
1962	4.7	17.1	18.9	31.8	41.8	48.7	54.4	50.1	42.9	35.0	25.9	17.4	32.4
1963	2.5	21.6	22.8	30.7	41.4	49.9	57.4	55.2	49.3	38.7	23.8	13.1	33.9
1964	14.1	11.1	15.6	31.0	41.7	46.6a	56.2	51.5	40.7	30.6	22.2	15.0	31.4
1965	17.2	13.6	10.5a	32.1	38.4a	48.2	54.2	50.8	39.2	36.7	27.0	16.4	32.0
1966	9.7	13.3	22.2	25.1	38.6	48.4	59.1	53.3	47.1	32.6	25.7a	16.0	32.6
1967	18.6	22.0	25.2	30.5	38.7	48.3	54.5	50.6	44.8	34.1	18.9	10.9	33.1
1968	13.3	19.1	23.2	27.1	37.8	49.8	-999z	50.2	41.1	33.7	22.0	10.7	29.8a
1969	13.1	16.6	16.7	33.2	41.1	44.5	55.6	53.6a	46.8	27.3	23.6	18.0	32.5
1970	15.1	19.1	19.3	26.9	40.9	46.7	55.2	55.4	41.5	29.2	23.1	12.0	32.0
1971	17.1	14.6	21.2	30.4	39.5	50.7	52.8	54.5	39.0e	31.8	22.7	13.0	32.3

Appendix 2.1.4.B. Temperature data - minimum temperatures - Pine Bluffs station

ID: 487235
Latitude: 41.18 degrees
Longitude: -104.07 degrees
Elevation: 5074 feet
Station period of record: 01/01/1919-02/29/1988
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1972	-999z	21.9	28.6b	32.0	39.2	50.7	50.8	52.0	42.4	32.6	20.2	8.8	34.5a
1973	13.5	18.3	24.9	28.5	38.7	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999g
1974	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1975	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1976	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1977	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1978	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1979	-999z	-999z	-999z	-999z	-999z	-999z	-999z	50.2	46.6	34.4	15.8	19.5	-999g
1980	9.3	13.7	18.4	28.8	37.2	47.3	55.5	51.2	42.6	30.1	21.2	20.2	31.3
1981	15.9	14.8	23.8	34.5	38.4	49.2	54.0	52.4	44.7	31.4	25.0	17.5	33.5
1982	9.4	11.9	22.1	25.3	38.8	45.6	54.0	54.5	43.9	32.0	17.3	17.0	31.0
1983	21.2	20.8	23.8	26.7	36.0	47.8	54.2	58.1	41.2	31.5	17.3	1.3a	31.7
1984	11.0	18.2	22.5	26.6	40.5	46.6	55.3	55.3	38.5	26.4	19.3	9.8	30.8
1985	8.1	-999i	21.3	33.6	41.2	46.9	55.0	50.0	39.5	29.9	11.0	11.7	31.6a
1986	19.8	15.4	28.0	32.7	39.6	53.4	55.7	54.0	43.7	33.5	21.3	14.3	34.3
1987	15.8	20.3	23.0	33.3	45.5	51.6	55.7	51.9	41.7	29.9	23.7	12.5	33.7
1988	7.8	17.9	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
Max value	23.7	23.4	28.6	37.0	45.5	53.4	59.1	58.1	49.3	38.7	28.8	22.4	34.3
Min value	-3.5	1.9	10.5	24.4	33.7	43.2	50.8	48.2	36.8	25.2	11.0	1.3	29.7
Mean	12.7	16.0	20.9	29.7	39.6	48.3	54.6	52.9	43.0	32.2	21.3	14.8	32.2
Std Dev	5.5	4.5	3.5	2.8	2.3	2.2	1.7	2.1	2.7	2.6	3.3	4.1	1.0
No. years	63.0	63.0	63.0	62.0	63.0	62.0	61.0	63.0	63.0	63.0	63.0	63.0	58.0

FLAGS:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - Pine Bluffs 5W station

ID: 487240
Latitude: 41.17 degrees
Longitude: -104.16 degrees
Elevation: 5180 feet
Station period of record: 04/08/1988-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1988	-999z	-999z	-999z	-999g	54.4	69.0	69.7	69.6	57.7	48.3	35.8	27.7	54.0d
1989	29.1	18.1a	35.2	44.1	53.9	60.1	71.6	66.4	57.5	46.0	37.5a	22.8	45.2
1990	30.2	28.5	32.3	43.3	49.7	65.5	66.7	66.6	62.0	45.8	37.9	19.4	45.7
1991	22.8	35.2	36.0	42.7	54.6	63.9	-999j	68.5	58.9	45.3	32.1	29.2	44.5a
1992	27.6	36.1	39.1	46.9	57.1	-999i	65.6	64.0	59.7	47.7	30.4	20.7	45.0a
1993	22.3	23.0	37.6	42.7	54.0	60.3a	66.4	66.1	54.4	44.3	26.8	28.2	43.9
1994	29.0	23.8	38.1	44.2	57.8	66.7	68.9	69.8	61.0	46.9	33.3	30.5	47.5
1995	26.4	31.5	35.0	39.7	46.6	59.4	68.2	70.8	57.9	44.3	37.3	29.2	45.5
1996	22.1	28.7	30.2	43.6	52.5	63.7	69.9	68.0	57.4	46.7	33.9	28.9	45.5
1997	24.1	27.1	37.5	37.2	52.5	63.8	69.4	67.1	60.3	46.3	32.1	26.9	45.4
1998	28.6	31.4	33.3	42.1	55.3	58.2	70.4	68.9	64.1	46.2	38.5	25.7	46.9
1999	30.4	34.8	37.5	40.2	52.4	62.5	71.2	68.3	55.2	47.0	41.2	31.8	47.7
2000	30.3	34.0	37.5	44.6	56.0	63.0	72.2	72.0	58.8	47.2	25.2	24.0	47.1
2001	26.5	25.2	35.3	45.2	53.5	64.2	72.7	69.1	61.1	46.4	38.1	28.7	47.1
2002	27.6	28.1	29.6	46.0	51.3	68.2	73.9	68.1	59.4	40.4	33.4	30.9	46.4
2003	32.8	25.2	36.2	47.3	54.7	59.8	74.2	71.7	56.7	50.4	33.0	29.5	47.6
2004	29.0	27.4	40.1	45.6	-999g	-999f	68.3	-999z	-999z	-999z	-999z	-999z	-999g
Max value	32.8	36.1	40.1	47.3	57.8	69.0	74.2	72.0	64.1	50.4	41.2	31.8	47.7
Min value	22.1	18.1	29.6	37.2	46.6	58.2	65.6	64.0	54.4	40.4	25.2	19.4	43.9
Mean	27.4	28.6	35.7	43.5	53.5	63.2	70.0	68.4	58.9	46.2	34.1	27.1	46.3
Std Dev	3.19	5.0	3.0	2.7	2.8	3.2	2.6	2.1	2.5	2.1	4.3	3.7	1.2
No. years	16	16.0	16.0	16.0	16.0	15.0	16.0	16.0	16.0	16.0	16.0	16.0	13.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Pine Bluffs 5W station

ID: 487240
Latitude: 41.17 degrees
Longitude: -104.16 degrees
Elevation: 5180 feet
Station period of record: 04/08/1988-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1988	-999z	-999z	-999z	-999g	69.5	84.8	87.2	86.6	75.1	64.3	49.6	42.5	70.0d
1989	45.3	29.8	49.9	59.6	68.9	74.3	89.5	81.2	72.6	61.8	52.2	36.9	60.2
1990	43.6	42.3	43.2	57.4	63.8	81.0	81.3	82.9	77.8	62.3	53.7	34.0	60.3
1991	37.3	50.8	50.2	56.7	68.6	77.9	-999j	83.9	75.2	63.1	42.8	45.4	59.3a
1992	40.9	51.3	52.8	64.2	73.6	-999i	79.8	79.1	77.3	65.2	41.8	32.8	59.9a
1993	33.2	35.3	49.5	54.9	68.5	75.6a	82.0	81.4	69.9	59.5	39.5	39.5	57.4
1994	41.8	38.0	53.5	58.8	74.2	83.8	85.4	87.0	78.8	60.5	46.5	44.6	62.7
1995	39.4	45.3	49.9	52.8	55.9	72.5	85.5	89.8	73.3	60.9	52.2	44.6	60.2
1996	36.9	44.3	44.4	59.4	65.7	79.9	85.8	84.1	71.9	63.1	48.2	43.9	60.6
1997	37.1	39.8	53.1	49.8	67.5	77.2	86.5	81.3	76.0	62.6	45.5	38.7	59.6
1998	44.4	44.2	45.8	56.9	70.1	73.1	84.6	85.3	81.9	59.0	51.1	39.7	61.3
1999	43.0	49.6	54.5	52.4	66.7	77.7	87.5	83.0	70.9	65.4	60.2	45.4	63.0
2000	44.2	48.4	50.8	61.7	71.3	80.1	89.7	89.8	75.9	62.6	37.7	39.0	62.6
2001	39.9	36.6	48.2	59.0	66.6	80.5	88.6	86.9	79.1	62.7	55.7	43.2	62.2
2002	42.2	44.0	44.2	62.5	67.5	86.0	91.6	84.2	74.9	55.0	45.1	44.8	61.8
2003	48.2	38.4	49.2	61.4	68.1	72.0	91.9	88.6	73.7	69.2	45.3	43.7	62.5
2004	44.2	41.4	56.1	60.7	-999g	-999f	84.2	-999z	-999z	-999z	-999z	-999z	-999g
Max value	48.2	51.3	56.1	64.2	74.2	86.0	91.9	89.8	81.9	69.2	60.2	45.4	63.0
Min value	33.2	29.8	43.2	49.8	55.9	72.0	79.8	79.1	69.9	55.0	37.7	32.8	57.4
Mean	41.4	42.5	49.7	58.0	67.9	78.4	86.3	84.7	75.3	62.3	47.9	41.2	61.1
Std Dev	3.86	6.0	3.8	4.0	4.2	4.4	3.5	3.2	3.2	3.1	6.1	4.1	1.6
No. years	16.0	16.0	16.0	16.0	16.0	15.0	16.0	16.0	16.0	16.0	16.0	16.0	13.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Pine Bluffs 5W station

ID: 487240
Latitude: 41.17 degrees
Longitude: -104.16 degrees
Elevation: 5180 feet
Station period of record: 04/08/1988-07/31/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1988	-999z	-999z	-999z	-999g	39.3	53.1	52.2	52.6	40.4	32.2	22.0	12.8	38.1d
1989	13.0	6.8a	20.5	28.7	38.9	45.9	53.8	51.6	42.3	30.2	22.8a	8.7	30.2
1990	16.7	14.8	21.5	29.3	35.7	50.0	52.1	50.3	46.3	29.3	22.1	4.7	31.1
1991	8.3	19.7	21.9	28.7	40.6	49.8	-999j	53.0	42.6	27.5	21.3	12.9	29.7a
1992	14.2	20.9	25.5	29.7	40.6	-999i	51.5	48.9	42.0	30.2	19.0	8.6	30.1a
1993	11.4	10.8	25.7	30.5	39.5	45.1a	50.9	50.8	38.9	29.0	14.2	16.9	30.3
1994	16.1	9.6	22.7	29.6	41.4	49.7	52.3	52.7	43.2	33.2	20.0	16.5	32.2
1995	13.4	17.8	20.2	26.7	37.3	46.3	51.0	51.7	42.4	27.7	22.5	13.7	30.9
1996	7.4	13.1	16.0	27.8	39.4	47.5	53.9	51.9	42.9	30.4	19.6	14.0	30.3
1997	11.0	14.4	21.9	24.7	37.4	50.4	52.4	52.9	44.6	30.0	18.8	15.1	31.1
1998	12.9	18.5	20.9	27.2	40.4	43.3	56.1	52.5	46.3	33.4	25.8	11.6	32.4
1999	17.9	19.9	20.5	27.9	38.1	47.3	55.0	53.7	39.4	28.6	22.2	18.2	32.4
2000	16.3	19.6	24.2	27.5	40.7	45.9	54.8	54.2	41.6	31.9	12.6	9.0	31.5
2001	13.1	13.8	22.4	31.3	40.4	47.8	56.9	51.3	43.0	30.1	20.6	14.2	32.1
2002	13.0	12.3	15.1	29.6	35.1	50.4	56.2	52.1	43.9	25.8	21.7	17.0	31.0
2003	17.4	12.0	23.2	33.2	41.3	47.6	56.5	54.9	39.6	31.6	20.6	15.4	32.8
2004	13.9	13.4	24.1	30.4	-999g	-999f	52.5	-999z	-999z	-999z	-999z	-999z	-999g
Max value	17.9	20.9	25.7	33.2	41.4	53.1	56.9	54.9	46.3	33.4	25.8	18.2	32.8
Min value	7.4	6.8	15.1	24.7	35.1	43.3	50.9	48.9	38.9	25.8	12.6	4.7	30.2
Mean	13.5	14.8	21.6	28.9	39.1	48.0	53.6	52.2	42.5	30.1	20.4	13.1	31.4
Std Dev	3.0	4.2	2.9	2.0	1.9	2.5	2.0	1.5	2.2	2.1	3.2	3.7	0.9
No. years	16.0	16.0	16.0	16.0	16.0	15.0	16.0	16.0	16.0	16.0	16.0	16.0	13.0

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - Saratoga 1 SSE station

ID: 487990
Latitude: 41.45 degrees
Longitude: -106.81 degrees
Elevation: 6790 feet
Station period of record: 08/01/1948-10/07/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	63.4a	59.7b	44.0b	-999h	20.4	-999h
1949	7.1	18.1	31.8	42.8	49.2	56.7	64.9	62.1	54.4	41.1	38.7	23.1	40.8
1950	21.3	27.2	29.1	39.9	44.7a	56.8	61.5	61.4	53.3c	49.8b	33.6	29.6	42.4
1951	19.0	26.5	26.8	38.9	-999z	53.6a	65.8	62.9	-999f	42.2	27.9	24.3e	38.8b
1952	21.0	22.0	24.1	41.2a	50.1	61.0	64.6	63.2	56.6	47.1d	25.6c	-999f	43.3a
1953	30.4c	24.4e	34.5a	36.6d	44.4	-999k	65.6d	63.7b	57.1e	-999r	35.7b	-999g	43.6c
1954	27.0b	-999i	27.8c	41.7c	51.8a	59.0c	69.9	-999h	-999f	-999f	36.3b	-999f	44.8e
1955	20.5a	19.9a	26.3	38.0	50.3a	-999j	-999l	66.8	57.2b	-999k	28.2a	24.8e	36.9c
1956	-999f	16.3	28.0	40.1	52.8	62.6	-999o	60.5d	56.1	44.9d	24.9b	22.6b	40.9b
1957	16.3b	30.1a	31.1	37.5	47.8c	57.3c	65.8	65.4c	52.2	44.9d	-999f	26.7d	43.2a
1958	22.0	31.5a	26.0a	37.2b	54.9b	60.7	63.3c	65.6	56.3a	45.6b	34.8	29.7	44.0
1959	23.9	24.9	29.9	41.1	49.7	63.1	66.1	64.5	53.3	42.6	31.3	27.1	43.1
1960	22.1	18.6	32.1	42.2	50.8	60.6	67.1	63.6	57.7	45.1	31.1	23.9	42.9
1961	22.8	28.0	32.0	38.6a	52.1	62.3	65.8	65.6	50.0	42.8	28.1	21.6	42.5
1962	14.7	25.9	26.3	44.1	52.0	59.4	64.5	62.3	54.9	46.4	36.8	26.3	42.8
1963	15.6	30.2	30.5	40.2	53.3	60.6	67.7	65.1	59.1	49.8	35.9	25.1	44.4
1964	17.5	17.0	22.9	38.5	50.8	57.3	68.7	62.4	53.4	44.5	31.5	23.5	40.7
1965	26.7	24.4	21.9	42.0	48.6	58.0	65.3	61.2	47.7	47.5	37.8	26.4	42.3
1966	22.7	20.1a	34.2	38.6	51.6	-999i	-999l	62.2	56.1	41.5	34.3	22.7	38.4b
1967	24.4	24.8	34.2	40.1	46.9	55.1	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1968	-999z	-999z	-999z	-999z	-999z	-999z	66.2	61.2	53.0	45.4	28.2	21.7	-999f
1969	27.6	25.8	23.4	44.0	54.3	54.6	66.7	66.7	58.4	36.0	31.3	24.0	42.7
1970	22.7	29.4	27.6	35.2	51.4	58.6	66.4	66.2	52.3	38.0	33.1	23.5	42.0
1971	25.4a	23.7	29.8	40.8	48.7	60.9	65.6	66.5	52.1	42.4	30.8	21.3	42.3
1972	22.6	27.5	37.8	42.8	50.7	62.0	65.3	63.8	55.2	44.5	27.1	19.6	43.2
1973	16.7	19.7	27.6	34.5	48.7	59.5	64.8	65.7	53.9	47.1	31.8	25.1	41.2
1974	19.7	23.9	36.4	40.3	52.3	61.8	67.0	61.2	52.7	47.0	33.4	20.3	43.0
1975	22.1	23.3	30.9	36.5	47.8	56.3	67.1	62.5	53.0	44.8	30.9	25.5	41.7
1976	22.0	28.4	30.2	42.3	51.6	58.2	68.7a	63.4	56.2	42.3	30.4	24.9	43.2
1977	21.1	27.8	29.0	44.4	51.3	64.9	66.8	63.7	57.0	46.0	32.0	27.9	44.3
1978	23.5	25.8	36.9	43.6	49.2	61.0	67.4	61.8	55.3	45.6	31.5	15.5	43.1
1979	9.4	26.0	33.1	42.0	49.2	60.2	67.1	63.2	58.3	46.3	23.9	27.9	42.2
1980	20.2	27.2	29.6	40.4	50.2	61.4a	67.7	64.6	56.4	43.4	33.1	33.0	43.9
1981	28.2	28.3	35.1	46.7	49.0	62.3	66.6	64.5	60.0	43.0	35.3	28.1	45.6
1982	21.0	23.6	33.5	38.5	49.0	56.8	65.3	67.2	55.3	41.4	27.3	23.0	41.8
1983	26.6	28.1	32.6	34.7	46.0	57.5	66.6	67.7	57.2	46.3	30.1	16.0	42.5
1984	17.2	21.9	29.0	34.7	52.0	57.8	66.6	65.9	54.6	38.7	32.7	23.4	41.2
1985	15.1	19.3	31.9	43.2	51.5	60.1	67.0	63.8	51.9	43.5	28.5	20.3	41.3
1986	27.8	29.3	39.6	41.6	49.4	63.8	64.2a	64.5	53.3	42.8	32.2	24.5	44.4
1987	20.9	27.9	29.5	44.8	52.8	59.4	65.1	61.4	54.5	45.7	30.3	21.1	42.8
1988	17.0	24.1	28.5	44.3	51.3	65.4	67.7	64.4	53.9	49.1	31.6	22.0	43.3
1989	23.9	15.4	36.7	44.9	52.0	59.0	67.2	63.1	55.5	44.7	34.0	21.6	43.2
1990	-999k	22.3	35.8	43.7	48.7	61.6	64.9	63.9	59.8	45.9	34.8	16.8	45.3a
1991	19.6	30.8	34.3	39.6	51.9	61.3	64.7	64.8	55.1	44.8	27.7	22.7	43.1
1992	20	28.9	37.1	47.2	54.0	58.6	62.2	63.5	56.4	48.0	26.0	20.9	43.6
1993	22.7	20.3	33.2	39.3	51.3	57.3	61.5	61.5	53.3	42.4	25.4	23.2	41.0
1994	26.0	23.1	36.8	43.0	54.5	62.5	65.4	65.6	56.3	44.0	29.1	27.4	44.5
1995	23.7	31.3	35.3	39.5	45.5	57.1	63.8	67.1	55.6	43.0	36.3	28.3	43.9
1996	22.2	28.0	33.0	41.8	51.2	61.3	66.8	64.2	53.7	42.5	34.6	26.8	43.8
1997	21.4	22.1	35.9	36.8	51.1	61.3	65.8	64.2	58.0	44.6	29.6	20.6	42.6
1998	28.5	28.1	30.3	40.4	51.8	54.8	68.1	65.1	60.0	44.6	36.4	22.8	44.2

Appendix 2.1.4.B. Temperature data - average temperatures - Saratoga 1 SSE station

ID: 487990
Latitude: 41.45 degrees
Longitude: -106.81 degrees
Elevation: 6790 feet
Station period of record: 08/01/1948-10/07/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1999	27.8	30.1	37.6	39.6	49.1	59.8	68.4a	64.8	53.1a	45.3	39.3	24.5a	45.0
2000	27.4b	31.6	34.9a	45.1a	55.2a	60.6a	68.1c	68.6c	55.3a	44.1	19.0c	21.4	44.3
2001	15.9e	-999f	33.5b	44.0a	52.4	62.4d	69.8c	-999i	57.5c	-999t	35.4e	22.8a	43.7c
2002	22.0	23.3	27.2	45.0	51.2	63.9	68.9	63.7	-999p	39.1	30.1	26.9	41.9a
2003	31.4	24.2	35.7	44.5	51.3	58.2	69.9	67.5	54.4	48.6	27.1	27.3	45.0
2004	24.7	24.4	38.5	43.9	52.5	58.5	65.2a	61.3a	55.5	-999x	-999z	-999z	47.2c

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accur S = Subsequent
0.0
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Saratoga 1 SSE station

ID: 487990
Latitude: 41.45 degrees
Longitude: -106.81 degrees
Elevation: 6790 feet
Station period of record: 08/01/1948-10/07/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	81.8a	77.4	61.7b	-999g	31.0	-999h
1949	19.3	29.9	42.3	57.1	63.0	71.4	83.3	82.9	74.2	54.4	53.9	34.8	55.5
1950	31.4	39.0	39.3	52.1	58.6a	75.4	79.5	79.8	70.0c	66.7	45.2	40.5	56.5
1951	30.1	38.3	38.7	51.7	64.8	68.8	84.3	78.6	-999f	54.6	40.9	33.4e	53.1a
1952	32.3	34.3	35.1	54.6a	64.7	78.2	82.7	81.0	76.2	66.7	41.7b	-999f	58.9a
1953	40.3c	34.8e	46.5a	50.4d	58.4	77.1c	87.1	80.7b	77.5e	-999r	49.4a	-999g	60.2b
1954	39.3b	-999i	40.0c	57.6b	69.2a	75.7b	88.5	-999h	72.7e	-999f	53.2b	-999f	62.0d
1955	32.8a	31.9a	39.4	51.8	66.5	-999j	-999l	83.5	76.6b	-999k	41.0a	35.7e	51.0c
1956	-999f	30.6	41.1	54.7	68.3	81.6	-999n	77.6d	76.5	64.5d	37.9b	35.9b	56.9b
1957	29.7b	40.8a	43.7	50.5	60.8c	72.4b	82.1	81.8c	68.9	60.3d	37.6e	40.1d	55.7
1958	37.5	44.1a	39.2	50.4b	71.1a	79.0	81.2c	83.0	73.4a	64.0b	50.2	40.0	59.4
1959	35.6	35.7	40.9	55.1	64.5	79.6	84.2	81.6	68.0	56.3	45.8	42.1	57.5
1960	33.0	29.7	44.6	58.8	66.2	77.8	85.1	81.5	74.3	60.3	43.3	36.6	57.6
1961	38.4	39.4	44.4	53.0	67.2	79.0	82.4	81.9	63.6	57.2	40.1	31.5	56.5
1962	29.5	35.7	38.1	58.5	66.4	74.6	81.8	81.2	73.1	63.5	50.8	40.4	57.8
1963	27.8	42.0	43.5	53.2	69.8	76.4	85.4	79.9	75.5	66.3	50.2	37.0	58.9
1964	30.0	28.9	35.0	50.2	66.2	72.2	86.5	79.2	71.1	62.4	42.5	33.3	54.8
1965	36.3	35.9	34.9	54.1	61.7	73.0	80.5	77.3	60.6	65.0	49.1	39.5	55.7
1966	33.9	33.6	50.1	55.9	71.3	-999i	-999l	80.6	73.1	56.9	46.9	34.2	53.6b
1967	33.9	36.3	45.7	53.4	60.4	69.5	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1968	-999z	-999z	-999z	-999z	-999z	-999z	84.5	77.4	71.4	60.9	40.1	33.9	-999f
1969	38.8	38.2	37.5	58.1	71.6	69.6	85.7	85.5	76.2	47.5	44.2	38.7	57.7
1970	32.9	42.6	38.6	46.7	67.3	75.0	84.0	84.3	69.2	52.4	42.3	35.1	55.9
1971	32.4a	34.6	40.8	55.4	63.8	79.0	84.3	85.9	69.0	58.0	43.0	31.9	56.5
1972	33.0	38.7	51.4	57.6	67.2	77.3	83.4	81.7	71.3	57.0	37.3	30.9	57.2
1973	28.3	34.3	39.2	45.4	64.0	76.0	81.0	82.7	69.9	63.7	42.8	36.1	55.3
1974	30.5	36.6	47.8	53.0	69.9	79.7	83.7	80.6	72.3	63.0	45.8	33.9	58.1
1975	32.1	35.0	41.8	49.7	62.3	72.6	83.8	81.0	72.0	61.5	44.7	37.4	56.2
1976	34.3	40.9	43.5	56.5	67.8	74.3	85.7a	80.6	73.8	59.4	46.2	39.8	58.6
1977	33.6	42.9	42.1	58.8	68.1	84.1	83.8	80.4	76.0	63.5	45.1	38.6	59.7
1978	34.4	37.2	48.1	57.2	61.7	76.7	85.0	78.8	72.3	63.1	43.5	25.6	57.0
1979	21.8	35.2	42.2	55.3	63.4	77.5	84.5	78.4	77.6	61.9	35.7	40.0	56.1
1980	30.2	38.1	40.1	53.7	63.6	79.2	84.1	80.2	72.8	59.3	46.6	44.7	57.7
1981	43.6	41.5	47.7	61.4	61.1	78.4	82.6	81.4	76.2	55.2	47.9	37.8	59.6
1982	32.2	35.7	45.6	54.0	63.2	73.0	81.8	82.6	69.7	55.4	39.9	33.8	55.6
1983	38.7	39.8	43.3	46.9	60.2	71.9	82.0	83.7	74.6	62.0	41.8	26.6	56.0
1984	30.3	36.0	39.7	47.1	67.7	73.2	82.6	81.5	70.6	51.7	45.1	34.6	55.0
1985	27.3	31.6	45.1	58.8	68.2	77.2	82.8	82.4	67.3	59.0	37.8	32.1	55.8
1986	40.3	39.5	54.0	54.4	65.9	80.5	79.4	81.5	67.1	57.0	42.9	38.2	58.4
1987	33.1	39.5	41.9	60.9	65.7	75.5	80.1	76.8	72.0	62.2	42.3	31.4	56.8
1988	27.5	35.7	39.5	59.6	65.6	80.4	84.3	81.6	69.7	65.0	40.4	34.6	57.0
1989	35.1	27.0	49.3	59.2	68.5	74.7	83.3	78.4	72.2	60.3	45.8	33.6	57.3
1990	-999k	34.0	47.1	57.6	64.3	78.2	79.5	79.5	75.4	58.9	46.0	29.2	59.1a
1991	30.9	43.4	45.2	52.8	66.3	75.8	79.8	80.2	70.5	60.6	37.0	36.0	56.6
1992	33.4	39.7	48.6	61.3	67.7	72.8	76.3	78.9	72.5	62.9	35.8	32.0	56.8
1993	33.7	31.1	43.7	50.6	64.6	71.2	78.4	76.8	69.2	55.0	37.0	33.7	53.8
1994	34.9	34.6	49.4	56.6	70.4	79.8	82.3	82.3	73.0	56.6	40.5	38.9	58.3
1995	34.7	42.0	47.4	51.6	56.6	71.2	78.7	82.8	70.2	57.3	47.0	39.5	56.6
1996	32.6	40.0	44.9	54.8	65.1	77.6	83.8	82.6	69.1	56.6	44.9	34.9	57.2
1997	31.7	32.5	49.6	49.6	65.7	75.8	81.7	78.6	71.7	58.7	41.3	32.3	55.8
1998	37.6	37.8	42.7	54.2	67.1	69.7	83.0	80.7	75.7	57.7	46.3	34.1	57.2

Appendix 2.1.4.B. Temperature data - maximum temperatures - Saratoga 1 SSE station

ID: 487990
Latitude: 41.45 degrees
Longitude: -106.81 degrees
Elevation: 6790 feet
Station period of record: 08/01/1948-10/07/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1999	36.1	40.6	51.9	52.0	63.7	74.8	83.8	80.2	69.1	63.7	55.7	35.3	58.9
2000	37.5	42.8	47.5	61.4	71.4	79.3	86.3	85.0c	71.7a	59.4	31.9	33.0	58.9
2001	30.1	36.2	45.4	56.9	68.6	81.2d	86.4	-999i	76.0	-999s	50.9	34.4a	56.6b
2002	32.9	36.6	40.0	60.5	67.3	82.5	87.0	80.8	-999p	53.3	41.1	37.0	56.3a
2003	40.8	34.4	45.7	57.8	65.8	72.8	88.6	83.4	70.3	65.6	36.3	37.6	58.3
2004	35.2	35.7	52.2	57.5	68.1	74.3	82.0a	77.5a	70.0	-999x	-999z	-999z	61.4c

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Saratoga 1 SSE station

ID: 487990
Latitude: 41.45 degrees
Longitude: -106.81 degrees
Elevation: 6790 feet
Station period of record: 08/01/1948-10/07/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	45.3	41.7b	26.3b	-999h	9.7	-999h
1949	-5.0	6.4	21.3	28.5	35.4	41.9	46.5	41.2	34.6	27.8	23.4	11.4	26.1
1950	11.3	15.3	19.0	27.8	30.8a	38.3	43.6	43.0	36.6c	33.1b	21.9	18.8	28.3
1951	8.0	14.8	14.8	26.1	-999z	38.7a	47.4	47.1	-999f	29.7	15.0	15.2e	25.7b
1952	9.7	9.7	13.1	27.6	35.5	43.7	46.4	45.5	37.0	26.9d	9.4b	-999f	27.7a
1953	20.5c	14.0e	22.5a	22.9d	30.4	-999k	44.4d	46.7b	36.7e	-999r	22.6b	-999g	29.0c
1954	14.7b	-999i	15.5c	26.4b	34.5a	41.7b	51.4	45.4	39.4b	27.4e	19.0	8.4d	29.4a
1955	7.8	7.9a	13.3	24.3	34.2a	-999j	-999l	50.2	37.8b	-999k	15.3a	13.8e	22.7c
1956	-999f	2.0	14.8	25.5	37.2	43.6	-999o	43.5d	35.7	25.4d	12.0b	9.2b	24.9b
1957	2.6a	19.4a	18.6	24.5	34.8c	41.6b	49.4	48.9c	35.6	29.5c	14.1e	13.3d	27.7
1958	6.5	19.0a	12.7a	24.1b	38.0a	42.4	45.5c	48.3	39.2a	26.9	19.5	19.4	28.5
1959	12.1	14.1	19.0	27.1	34.8	46.5	48.0	47.5	38.5	29.0	16.7	12.1	28.8
1960	11.3	7.4	19.7	25.6	35.4	43.4	49.2	45.7	41.2	30.0	19.0	11.2	28.2
1961	7.2	16.6	19.5	24.2a	37.0	45.5	49.3	49.2	36.3	28.4	16.1	11.7	28.4
1962	-0.2	16.0	14.5	29.6	37.7	44.1	47.3	43.5	36.7	29.4	22.7	12.1	27.8
1963	3.4	18.4	17.6	27.2	36.8	44.7	50.1	50.4	42.7	33.2	21.6	13.3	29.9
1964	4.9	5.1	10.8	26.9	35.5	42.3	50.9	45.6	35.6	26.6	20.4	13.8	26.5
1965	17.0	12.9	9.0	29.9	35.5	43.0	50.1	45.1	34.8	29.9	26.5	13.3	28.9
1966	11.4	6.9a	18.3	21.2	32.0	41.3	49.5	43.9	39.1	26.0	21.7	11.3	26.9
1967	14.8	13.2	22.7	26.8	33.5	40.7	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1968	-999z	-999z	-999z	-999z	-999z	-999z	48.0	44.9	34.5	29.8	16.3	9.4	-999f
1969	16.4	13.3	9.3	29.9	37.0	39.6	47.6	47.9	40.6	24.5	18.4	9.3	27.8
1970	12.4	16.1	16.6	23.7	35.4	42.2	48.7	48.1	35.3	23.6	23.8	11.9	28.2
1971	18.4a	12.8	18.8	26.2	33.7	42.8	47.0	47.0	35.2	26.8	18.7	10.6	28.2
1972	12.2	16.3	24.1	28.0	34.3	46.6	47.1	45.9	39.1	32.1	17.0	8.3	29.2
1973	5.0	5.1	16.1	23.6	33.4	42.9	48.5	48.6	37.9	30.4	20.7	14.2	27.2
1974	8.8	11.2	25.1	27.7	34.7	43.9	50.2	41.8	33.0	30.9	21.0	6.7	27.9
1975	12.1	11.5	20.1	23.2	33.3	40.0	50.4	44.1	33.9	28.0	17.0	13.5	27.3
1976	9.6	15.9	17.0	28.1	35.4	42.2	51.7a	46.1	38.6	25.3	14.6	10.0	27.9
1977	8.6	12.7	15.9	29.9	34.5	45.7	49.9	47.1	38.0	28.5	18.9	17.2	28.9
1978	12.6	14.3	25.6	30.0	36.6	45.2	49.7	44.8	38.2	28.1	19.4	5.3	29.2
1979	-3.1	16.8	24.0	28.7	35.0	42.9	49.7	48.1	39.1	30.7	12.1	15.8	28.3
1980	10.3	16.3	19.2	27.1	36.7	43.6a	51.3	49.0	40.0	27.4	19.6	21.4	30.2
1981	12.8	15.2	22.5	32.0	36.9	46.2	50.5	47.5	43.8	30.8	22.6	18.3	31.6
1982	9.8	11.4	21.4	23.1	34.8	40.5	48.8	51.7	40.8	27.5	14.6	12.1	28.0
1983	14.6	16.4	22.0	22.6	31.8	43.1	51.3	51.6	39.9	30.7	18.5	5.5	29.0
1984	4.1	7.8	18.3	22.3	36.3	42.5	50.6	50.3	38.7	25.6	20.3	12.3	27.4
1985	2.9	6.9	18.7	27.6	34.8	42.9	51.3	45.3	36.4	28.0	19.2	8.5	26.9
1986	15.3	19.0	25.2	28.8	32.9	47.0	49.1a	47.5	39.4	28.6	21.5	10.7	30.4
1987	8.7	16.3	17.1	28.8	39.8	43.3	50.1	46.0	37.1	29.3	18.2	10.8	28.8
1988	6.5	12.5	17.5	29.1	37.1	50.3	51.2	47.1	38.1	33.2	22.7	9.3	29.6
1989	12.7	3.8	24.2	30.6	35.6	43.3	51.1	47.9	38.7	29.1	22.2	9.6	29.1
1990	-999k	10.5	24.6	29.8	33.1	44.9	50.3	48.4	44.3	32.9	23.5	4.4	31.5a
1991	8.3	18.2	23.4	26.5	37.5	46.7	49.6	49.5	39.7	28.9	18.3	9.5	29.7
1992	6.7	18.1	25.7	33.0	40.2	44.4	48.1	48.1	40.2	33.0	16.3	9.8	30.3
1993	11.7	9.6	22.8	27.9	38.1	43.5	44.5	46.1	37.3	29.8	13.8	12.6	28.2
1994	17.1	11.5	24.3	29.3	38.6	45.1	48.4	48.9	39.6	31.3	17.8	15.8	30.6
1995	12.6	20.6	23.2	27.3	34.5	42.9	48.8	51.5	40.9	28.7	25.7	17.1	31.2
1996	11.8	16.0	21.0	28.7	37.2	45.0	49.9	45.9	38.2	28.4	24.3	18.6	30.4
1997	11.0	11.6	22.2	24.0	36.5	46.8	49.9	49.8	44.2	30.4	17.8	9.0	29.4
1998	19.5	18.3	17.8	26.6	36.5	39.9	53.2	49.5	44.3	31.5	26.5	11.4	31.3

Appendix 2.1.4.B. Temperature data - minimum temperatures - Saratoga 1 SSE station

ID: 487990
Latitude: 41.45 degrees
Longitude: -106.81 degrees
Elevation: 6790 feet
Station period of record: 08/01/1948-10/07/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1999	19.5	19.6	23.4	27.2	34.5	44.7	52.8a	49.5	37.2a	26.9	22.9	13.6a	31.0
2000	17.1b	20.4	22.2a	29.0a	39.1a	41.9a	49.7c	52.3c	38.5	28.8	6.4c	9.9	29.6
2001	1.8e	-999f	21.5b	30.8a	36.3	43.5d	53.1c	-999i	39.5c	-999r	20.0e	11.1a	28.6c
2002	11.1	9.9	14.4	29.4	35.2	45.3	50.9	46.5	-999p	25.0	19.1	16.7	27.6a
2003	21.9	13.9	25.7	31.2	36.7	43.6	51.3	51.6	38.4	31.5	18.0	17.0	31.7
2004	14.2	13.1	24.8	30.3	37.0	42.7	48.4a	45.0a	41.0	-999x	-999z	-999z	32.9c

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - Torrington Exp Farm station

ID: 488995
Latitude: 42.08 degrees
Longitude: -104.22 degrees
Elevation: 4098 feet
Station period of record: 01/01/1922-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1922	18.4	25.7	37.5	43.5	56.7	69.4	70.3	73.6	63.0	48.6	32.6	26.4a	47.1
1923	33.7	25.3	32.8	43.1	54.7	64.1	73.0	67.9	59.3b	42.0b	39.6a	23.9	46.6
1924	18.3	34.2	26.3	44.4	50.7	65.7	70.9	69.1	58.4	50.2	38.6a	19.4	45.5
1925	26.3a	37.7a	40.3	50.6	57.8	64.5	71.4	68.0a	61.3	38.7	35.8	25.5	48.2
1926	23.1	35.1	35.2	47.3b	57.0	64.4	70.3	69.2	57.2a	50.4	35.2	26.9	47.6
1927	24.7a	31.5b	33.2	43.2b	54.7	62.8	67.4	65.0	59.4a	49.5	39.2	20.8	45.9
1928	29.9a	28.4	36.4	43.4	57.6	58.9	71.2	67.9	58.4	47.8	34.0	23.3	46.4
1929	19.3	18.1	37.3	43.6	53.2	62.8	72.8	72.1	55.5	49.1a	29.8	32.7	45.5
1930	8.8	36.8	33.8	52.6	52.7	64.7	72.6	71.1	59.5	46.3	36.9	29.0	47.0
1931	31.2	34.0	34.8	45.1	53.2	70.4	73.6	69.5	63.2	48.4	32.2	27.1	48.6
1932	22.1	31.7	28.6	47.0	56.0	64.3	72.7	70.8	56.0	44.2	37.5	18.4	45.8
1933	28.6	22.6	38.6	42.9	53.8	71.0	74.4	68.4	63.8	51.2	39.3	35.4	49.2
1934	32.7	31.8	39.7	47.4	62.0	67.3	75.3	71.1	55.6	53.8	39.2	30.4	50.5
1935	30.6	32.6	39.0	42.2	48.7	64.0	74.5	70.6	60.1	47.2	33.1	26.6	47.4
1936	24.3	11.3	37.0	45.6	61.0	69.5	76.4	71.5	61.1	47.3	34.0	30.7	47.5
1937	10.6	26.6	33.5a	46.2	57.3	63.1	73.2	73.9	63.0	49.2	35.5a	28.9	46.7
1938	29.6	31.0	40.9	47.3	54.2b	66.3	72.1	72.5	62.7	53.0	34.9	29.1a	49.5
1939	30.2	20.3	38.7	47.6a	60.3	65.3	75.8	69.4	62.8	52.2	41.0	34.9	49.9
1940	19.2	33.4	41.2	45.3	58.0	67.8	73.8	69.8	64.3	53.0b	32.9a	30.5	49.1
1941	29.8	32.9	35.7	46.6b	60.5	65.3a	72.1	69.9	58.3	47.4	39.6	29.4	49.0
1942	20.2	26.0	35.9	49.9	53.7a	64.4	72.3	70.4	58.0	48.5	36.8	31.4	47.3
1943	29.2	35.1	30.3	51.1	50.7	62.5	74.0	72.9	59.0	47.9a	36.7	29.1	48.2
1944	25.9a	28.0	31.2a	43.9	57.7	63.1	69.7	70.5	60.7	50.0	35.8	23.0	46.6
1945	26.7	29.5	36.0	39.3	54.0	59.3	72.2	69.6	57.4	51.6	38.2	22.8	46.4
1946	31.4	34.2	42.8	54.0	50.8	65.4	73.9	68.7	60.6	45.6	35.5	33.8	49.7
1947	29.7	26.2	33.5	45.5	55.4	60.4	72.6	72.6	61.8	53.5	30.0	30.5	47.6
1948	27.8b	29.1a	30.3	50.2	57.5	65.5	71.0	69.9	64.0	47.8	34.5	25.8	47.8
1949	11.8	27.1	35.8	49.5	58.2	64.9	73.4a	70.7	58.6	47.7a	44.2	29.4	47.6
1950	23.5	34.7	34.8	43.7	51.3	65.0	68.5	68.0	59.8	54.0a	35.6	32.7a	47.6
1951	25.6	33.7	33.6	42.2	56.6	59.8	69.7	68.4	58.0	48.5	36.2	25.0	46.4
1952	28.9	31.6	32.3	47.5	56.2	70.2	70.9	71.3	62.2	49.1	29.4	27.1	48.1
1953	37.6a	29.8	41.6a	42.1	53.3	67.6	72.7	70.1	62.1a	51.6	40.5	29.8	49.9
1954	31.8	40.9a	31.3	50.6	55.4	67.2	75.0a	70.0	63.1a	49.2	42.1	34.2a	50.9
1955	23.2	25.9	34.1	47.9	58.1	62.2	73.2	72.5	60.9	52.2	32.7	30.8	47.8
1956	27.6	28.8	37.8	42.8	59.0	71.5	70.1	67.4	60.9	50.5	35.2	34.6	48.9
1957	19.9	36.8	37.7	41.8	53.9	64.0a	72.5	69.7	57.7	50.0	34.8	38.0	48.1
1958	30.5	32.0	30.0	43.6	61.1	65.3	67.7	70.8	60.9	50.2	39.0	27.4	48.2
1959	28.3	29.1	37.1	46.0	55.4	70.3	71.0	72.2	56.9	46.3	33.6	33.4	48.3
1960	25.8	25.6	36.1	49.1	57.2	66.8	73.2	69.8	61.6	45.6	33.0	-999z	49.4a
1961	-999m	35.0	40.7	44.9	55.5	68.1	72.7	72.8	56.3a	48.0	33.9	27.7	50.5a
1962	22.3	30.0	34.2	50.7	58.7	64.5	70.5	70.0	60.9	52.2	42.4	31.3	49.0
1963	17.0	36.7	39.3	48.6	58.8	67.7	74.7	72.0	66.3	55.2	40.2	25.7	50.2
1964	30.2	28.4	33.5a	46.4	58.2	65.3	76.2	68.4	59.0	49.6	36.7	26.3	48.2
1965	32.7	28.7	27.1	50.5	56.8	64.7	72.2	68.3	52.9	52.8	41.7	30.5	48.2
1966	21.6	25.0	41.6	43.8	59.5	66.3	77.6	68.2	62.5	48.5	39.9	28.8	48.6
1967	32.8	34.2	43.4	49.9	52.6a	63.4	72.2	69.6	62.5	51.2	35.4a	21.2	49.0
1968	25.2	33.9	41.1	44.1	52.9	67.0	71.8	67.1	-999z	50.1	35.5	25.1	46.7a
1969	27.1	33.7	33.4	52.4	59.6	60.9a	73.9	73.7	65.6	43.2	39.2	31.7a	49.5
1970	27.3	36.4	32.6	42.5	59.0	67.3	74.0	73.6	60.7	45.4	38.6	29.4	48.9
1971	29.9	31.7	37.8	47.6	54.6	-999m	71.1	72.8	-999z	47.8	37.5	29.7	46.1b
1972	24.8	35.6	44.0	46.7	57.0	69.3	69.9	70.7	61.4	50.0	30.6	19.1	48.3
1973	26.1	31.1	-999z	-999z	56.9	-999z	71.8	72.4	58.8	51.6	37.0	27.3	48.1c
1974	20.3	35.4	41.5	48.5	58.5	68.9	74.4	67.2	56.4	51.3b	37.5	30.4	49.2

Appendix 2.1.4.B. Temperature data - average temperatures - Torrington Exp Farm station

ID: 488995
Latitude: 42.08 degrees
Longitude: -104.22 degrees
Elevation: 4098 feet
Station period of record: 01/01/1922-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1975	27.9	27.1	36.3b	44.3	55.8	65.2	75.1	70.9	58.4	49.9	35.4	32.6	48.2
1976	25.2	37.1	36.8	48.1	57.2	65.3	74.8	70.5	62.0	45.0	32.1	31.7	48.8
1977	19.6	32.1	34.1	52.4a	59.7b	70.2	73.0	66.9	62.3	48.6	35.5	25.5	48.3
1978	16.6	21.4	37.3	47.7	53.5	65.0	71.3	66.5	61.4	47.2	31.3	18.2a	44.8
1979	8.3	27.5	38.5	47.0a	52.9	64.8a	71.7	68.3	62.8	49.4	28.3	30.3	45.8
1980	19.5	26.9	32.2	44.9	53.5b	64.7	-999q	68.7a	59.9a	44.9	35.3	33.1	44.0a
1981	28.9a	29.0a	38.7	51.2b	53.5c	66.8a	71.3	67.5	61.4	46.7	40.1a	27.6a	48.6
1982	-999h	27.0b	38.7	43.1	54.0	61.5	70.9	70.6	57.4	43.9	31.2	26.3	47.7a
1983	31.2	34.1a	-999d	39.4	49.8	62.9	-999z	73.8	59.3	47.5	32.9	12.6a	44.4b
1984	25.4	32.6	36.5	40.5	57.9	65.2	72.7	72.5	55.8	44.0	36.3	24.4	47.0
1985	19.8	25.6	38.3	49.2	59.5	64.2	71.9	67.3	54.9	45.2	22.5	21.7	45.0
1986	34.5	30.0b	44.6	46.4	54.6	69.0	70.9	68.9	56.3	46.3	34.3	25.7	48.5
1987	27.4	32.7	33.6a	50.2	60.3	67.2	73.0	67.4	59.4	46.1	36.8	22.5	48.0
1988	18.7	29.3	35.0	46.1	57.7	72.7	73.4	72.1	58.7	48.4	36.9	28.0	48.1
1989	31.0	18.4	35.3	47.5	57.2	66.0	75.2	70.5	58.5	46.1	38.8a	21.2b	47.1
1990	34.5	27.3	34.8	45.8	53.5	68.6	70.5	69.5	64.5	47.0	38.6	20.8	47.9
1991	22.6	36.1	38.6	45.2	57.0	66.8	72.3	72.5	61.5	47.2	32.1	30.0	48.5
1992	30.1	36.1	41.3	49.1	59.8	65.5	67.6	65.9	60.6	48.8	30.3	20.0	47.9
1993	20.4	15.0	35.5	45.2	57.7	62.2	68.3	68.4	55.9	45.2	28.4	29.7	44.3
1994	28.7	25.7	39.9	46.1	61.6	69.5	70.4	72.6	62.1	48.4	34.7	29.2	49.1
1995	26.0	34.6	36.9	42.2	50.0	63.4	71.2	73.2	59.2	45.3	38.0a	28.1	47.3
1996	20.8	28.9	31.8	46.2	55.4	67.9	73.2	70.6	59.8	47.6	31.9	28.8	46.9
1997	24.8	30.4	38.3	39.9a	55.2	67.9	72.0	69.8	62.7	48.4	33.6	28.0	47.6
1998	27.2	34.0	34.0	44.6	57.6	60.7	74.6	72.0	66.4	48.0	39.3	26.7	48.8
1999	30.2	37.6	40.7	43.3	55.6	65.6	73.4	70.7a	58.1	48.7	42.7	32.7	49.9
2000	29.9	34.6	40.4	47.4	59.0	65.8	74.6	74.4	60.1	48.9	25.2	23.9	48.7
2001	27.6	25.4	37.7	47.1	56.8	66.8	76.3	73.2	63.1	47.0	38.0	28.7	49.0
2002	28.6	30.1	28.9	48.0	53.5	70.1	75.7	69.1	60.8	41.6	35.8	30.7	47.7
2003	31.7	25.7	36.5	49.3	56.9	62.7	76.1	73.4	58.3	51.1	32.2	29.9	48.6
2004	28.5	-999z	41.8	48.9	57.6	63.3	-999z	-999z	-999z	-999z	-999z	-999z	-999g

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Torrington Exp Farm station

ID: 488995
Latitude: 42.08 degrees
Longitude: -104.22 degrees
Elevation: 4098 feet
Station period of record: 01/01/1922-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1922	32.5	40.8	55.1	57.8	73.5	86.2	86.9	90.9	83.8	69.3	45.0	36.8	63.2
1923	48.1	42.6	46.8	60.3	68.1	77.9	87.9	83.2	75.8b	55.1b	56.0	39.1	61.7
1924	34.5	48.4	37.2	60.8	67.5	83.2	88.1	86.2	75.2	64.3	53.8a	32.3	61.0
1925	41.9	53.2a	57.5	66.9	72.9	80.1	87.4	84.6a	77.0	51.5	52.4	38.5	63.7
1926	35.4	47.1	50.4	64.0b	73.3	79.5	85.7	86.2	73.2a	67.5	48.1	39.4	62.5
1927	39.9a	44.4b	44.6	57.6b	69.3	75.7	80.9	79.3	75.6a	69.7	53.3	37.0	60.6
1928	44.7a	46.1	51.7	59.7	72.5	71.8	87.5	86.5	77.1	64.1	47.0	37.6	62.2
1929	33.5	32.2	50.5	57.0	67.6	79.7	88.5	89.4	68.8	64.8a	41.8	47.3	60.1
1930	23.2	49.6	48.5	69.7	65.8	82.1	90.0	84.5	76.7	61.7	53.1	45.2	62.5
1931	47.2	50.6	49.8	61.4	69.3	87.4	90.7	86.6	82.3	65.1	49.5	44.1	65.3
1932	35.9	45.3	41.8	62.1	70.1	79.1	89.1	87.1	71.2	60.5	52.4	32.1	60.6
1933	42.1	37.3	52.4	56.2	66.7	88.5	90.4	82.8	81.5	71.5	56.2	49.6	64.6
1934	49.0	47.0	55.3	63.6	79.2	82.3	92.5	87.8	74.0	71.5	56.3	44.8	66.9
1935	47.0	49.9	54.6	55.9	59.8	77.9	91.0	87.0	77.5	65.7	46.8	40.1	62.8
1936	38.8	27.1	51.9	61.1	77.3	85.5	94.5	88.8	79.2	63.9	50.0	43.6	63.5
1937	24.3	40.6	46.5a	61.0	72.0	77.9	90.8	91.9	81.6	66.3	49.8a	41.9	62.0
1938	43.0	48.5	54.0	63.9	67.1a	83.2	89.3	91.1	80.0	73.4	49.9	44.2a	65.6
1939	43.9	36.7	55.1	65.8	80.0	83.0	95.2	88.5	81.9	69.6	60.0	52.0	67.7
1940	30.7	44.4	55.1	58.3	75.2	85.5	91.1	86.1	78.7	70.9a	49.2a	45.7	64.2
1941	45.7	47.3	47.9	59.7b	75.9	80.1a	88.7	85.2	75.4	63.4	58.2	45.5	64.4
1942	36.5	39.2	50.4	65.5	68.6a	78.0	90.0	87.7	75.7	65.5	54.8	45.2	63.1
1943	44.9	52.1	47.6	67.1	65.1	77.9	91.5	91.3	79.4	67.7a	53.6	45.3	65.3
1944	42.3	42.6	43.7a	56.8	73.6	77.8	85.4	87.6	79.3	69.3	48.6	38.0	62.1
1945	36.7	41.9	49.7	51.9	68.7	71.9	87.6	85.4	74.7	69.6	53.4	35.1	60.5
1946	44.9	49.9	58.2	70.7	63.5	81.9	89.8	84.2	78.3	59.1	49.2	48.7	64.9
1947	43.7	38.9	49.1	59.4	70.3	74.2	88.0	88.2	78.6	69.6	42.2	42.6	62.1
1948	39.9	41.9a	43.2	66.5	71.6	78.1	85.4	85.5	80.0	64.8	45.5	38.0	61.7
1949	23.5	41.2	48.1	66.4	71.5	78.1	89.2	86.8	75.4	61.0	61.6	43.4	62.2
1950	39.6	50.9	49.4	58.7	65.1	83.1	83.2	87.1	73.9	74.5a	50.8	49.1	63.8
1951	41.2	49.9	50.5	58.3	70.6	74.6	84.4	85.1	74.5	63.5	53.5	38.9	62.1
1952	44.8	46.5	44.7	64.7	70.8	87.4	88.7	87.3	81.7	70.5	45.2	39.8	64.3
1953	51.1a	43.6	58.8a	56.7	66.8	83.4	88.0	86.1	82.6a	71.0	56.8	45.0	65.8
1954	48.5	60.4	46.1	69.0	69.9	82.4	92.1a	86.9	81.6a	65.4	59.2	48.0a	67.4
1955	37.2	38.9	48.8	64.9	74.6	75.5	89.4	87.8	78.9	71.7	46.6	43.8	63.2
1956	41.1	44.3	54.7	59.2	74.1	90.6	86.4	84.9	82.7	71.8	49.5	50.8	65.8
1957	35.9	53.8	52.2	54.0	65.5	79.1	89.4	84.6	75.4	61.5	47.6	53.4	62.7
1958	46.6	45.4	41.5	56.9	77.7	80.5	83.2	89.6	81.5	72.0	56.6	41.0	64.4
1959	42.3	43.0	51.8	63.3	69.0	87.9	89.9	91.4	73.9	63.7	50.9	50.5	64.8
1960	41.1	37.1	51.1	66.5	75.1	83.9	93.1	90.1	83.1	65.0	47.5	-999z	66.7a
1961	-999m	50.2	54.1	61.0	69.5	85.7	89.9	90.1	72.4	66.4	48.4	42.2	66.4a
1962	37.9	46.3	49.7	69.6	75.1	78.6	86.6	89.4	79.6	71.4	58.7	47.8	65.9
1963	32.6	52.5	55.5	64.7	76.1	84.4	92.9	88.8	83.3	75.5	59.2	40.9	67.2
1964	45.1	42.9	49.3a	61.6	74.4	82.2	95.2	86.6	79.2	70.5	53.3	39.8	65.0
1965	47.5	43.7	42.5	66.2	72.1	78.6	87.7	85.5	67.3	72.7	58.1	45.5	64.0
1966	37.2	39.4	59.8	60.8	79.5	82.6	94.7	84.5	78.6	67.4	55.4	42.8	65.2
1967	46.2	48.0	60.3	66.5	66.0a	76.4	88.8	87.6	79.8	70.5	52.0a	33.9	64.7
1968	40.6	48.7	58.5	59.8	68.1	84.2	89.5	86.3	-999z	70.9	52.9	41.5	63.7a
1969	42.7	47.9	47.8	70.0	79.2	77.2	93.1	93.6	85.4	55.6	54.7	46.1	66.1
1970	41.9	54.2	46.8	57.1	77.2	86.1	92.5	93.8	82.2	62.2	53.6	46.7	66.2
1971	44.9	46.3	52.8	65.6	68.7	86.4c	90.5	93.3	-999z	65.6	53.0	46.5	64.9a
1972	40.3	52.6	61.3	62.7	73.4	85.4	87.5	87.6	80.5	67.3	45.1	33.3	64.7

Appendix 2.1.4.B. Temperature data - maximum temperatures - Torrington Exp Farm station

ID: 488995
Latitude: 42.08 degrees
Longitude: -104.22 degrees
Elevation: 4098 feet
Station period of record: 01/01/1922-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1973	41.4	46.4	-999z	-999z	75.5	-999z	89.7	91.3	75.1	71.5	51.0	42.0	64.9c
1974	33.6	50.1	56.7	65.5	76.8	88.0	95.1	86.4	78.4	69.8b	54.7	44.7	66.7
1975	41.9	41.7	51.5	59.6	71.7	83.0	93.8	90.4	77.8	70.7	52.0	46.1	65.0
1976	38.2	50.9	53.4	62.5	74.8	82.8	92.1	88.7	81.7	65.2	51.5	47.4	65.8
1977	35.9	50.3	49.9	67.2a	75.6b	87.3	89.9	81.5	81.9	68.0	50.0	40.1	64.8
1978	29	33.0	51.8	61.4	66.3	81.1	86.7	83.3	80.0	66.9	45.9	30.8	59.7
1979	23.4	40.9	51.8	61.7a	65.8	80.1a	88.1	84.2	82.4	67.6	42.7	46.2	61.2
1980	33.0	39.9	44.8	60.5	66.5b	80.5	-999q	86.2a	78.5	62.8	50.0	47.5	59.1a
1981	46.2a	45.5a	54.4	65.3a	65.4	82.9	86.8	83.9	79.3	62.1	57.3a	44.7	64.5
1982	-999e	44.6b	54.1	60.5	67.6	74.6	87.4	86.5	72.5	59.3	46.9	39.7	63.1a
1983	45.9	50.1	-999d	52.5	63.7	76.7	-999z	91.8	80.2	67.8	47.1	25.1	60.1b
1984	38.9	45.4	47.5	51.7	73.6	80.6	88.3	89.2	72.8	59.0	53.0	40.5	61.7
1985	33.6	39.3	53.8	65.5	76.2	81.5	89.7	86.7	71.6	62.7	35.2	34.9	60.9
1986	48.1	44.7b	59.2	59.5	69.3	84.2	87.7	87.0	70.9	61.4	49.6	41.5	63.6
1987	42.1	46.0	46.5a	69.4	73.9	84.3	90.5	83.4	79.3	65.8	52.7	39.5	64.5
1988	33.5	45.1	49.4	64.3	73.7	89.3	90.2	91.0	77.2	68.2	51.9	44.9	64.9
1989	51.2	32.3	50.8	64.4	72.8	84.1	92.7	87.5	75.4	63.6	54.1a	36.3b	63.8
1990	50.1	41.9	48.1	60.3	67.9	84.8	86.0	86.9	82.8	66.4	54.7	36.4	63.9
1991	37.4	54.0	54.5	59.0	69.9	81.1	88.5	90.0	79.7	66.8	44.8	46.4	64.3
1992	46.7	53.5	57.2	67.6	77.5	80.6	82.6	81.8	80.8	67.9	44.9	34.1	64.6
1993	32.0	31.0	49.0	59.2	73.8	76.4	83.5	82.8	71.6	62.0	42.7	41.8	58.8
1994	42.1	41.0	56.5	62.5	78.6	86.3	86.6	90.5	81.1	63.5	47.5	42.6	64.9
1995	40.8	49.8	52.4	56.8	60.1	77.7	88.9	91.5	76.0	63.4	54.1a	45.1	63.1
1996	36.8	45.6	46.3	62.7	68.1	83.8	89.3	87.7	76.0	66.5	47.3	43.3	62.8
1997	38.5	44.1	55.3	53.5a	70.0	82.3	88.4	84.8	78.7	65.5	48.9	42.4	62.7
1998	43.2	47.1	47.8	60.3	74.1	75.9	90.7	88.6	84.7	61.9	52.2	43.7	64.2
1999	44.2	53.3	58.2	56.1	70.3	80.4	89.6	87.1	75.2	69.8	63.5	47.9	66.3
2000	43.9	48.8	55.3	64.6	74.5	82.8	91.2	91.9	78.1	64.9	39.6	38.3	64.5
2001	42.8	39.4	52.5	62.3	71.6	83.0	92.7	90.6	81.3	65.0	57.5	44.2	65.2
2002	44.6	47.9	42.7	64.5	69.5	87.9	93.8	86.4	77.9	57.8	48.9	47.1	64.1
2003	48.1	40.7	51.1	64.5	71.6	76.4	94.6	90.0	76.4	72.5	45.7	44.5	64.7
2004	45.9	-999z	59.1	64.7	73.5	78.4	-999z	-999z	-999z	-999z	-999z	-999z	-999g

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Torrington Exp Farm station

ID: 488995
Latitude: 42.08 degrees
Longitude: -104.22 degrees
Elevation: 4098 feet
Station period of record: 01/01/1922-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1922	4.3	10.7	19.8	29.2	40.0	52.5	53.6	56.3	42.2	28.0	20.2	15.5a	31.0
1923	19.2	8.0	18.7	26.0	41.2	50.3	58.0	52.5	42.8a	28.8b	23.2a	8.8	31.5
1924	2.1	20.1	15.4	28.0	33.9	48.2	53.6	51.9	41.7	36.0	23.4a	6.5	30.1
1925	10.4a	22.1a	23.2	34.4	42.6	48.9	55.5	51.4a	45.6	25.8	19.2	12.4	32.6
1926	10.8	23.1	20.0	30.4a	40.7	49.2	54.8	52.1	41.1a	33.4	22.3	14.4	32.7
1927	9.4a	18.5b	21.8	28.8b	40.1	50.0	53.8	50.8	43.2a	29.3	25.0	4.6	31.3
1928	15.0a	10.7	21.0	27.1	42.6	45.9	54.9	49.2	39.7	31.4	21.0	8.9	30.6
1929	5.0	3.9	24.1	30.1	38.8	46.0	57.2	54.7	42.3	33.3a	17.8	18.1	30.9
1930	-5.6	23.9	19.2	35.5	39.5	47.2	55.1	57.6	42.2	30.9	20.7	12.9	31.6
1931	15.3	17.4	19.7	28.7	37.2	53.4	56.5	52.3	44.1	31.7	14.9	10.2	31.8
1932	8.4	18.1	15.3	31.9	42.0	49.5	56.4	54.5	40.8	28.0	22.6	4.6	31.0
1933	15.1	8.0	24.8	29.6	40.9	53.5	58.4	54.0	46.2	30.9	22.4	21.1	33.7
1934	16.4	16.7	24.1	31.3	44.7	52.3	58.1	54.4	37.1	36.1	22.2	16.0	34.1
1935	14.1	15.2	23.3	28.5	37.6	50.0	58.0	54.2	42.6	28.7	19.4	13.2	32.1
1936	9.8	-4.6	22.1	30.2	44.6	53.5	58.3	54.1	43.0	30.7	17.9	17.9	31.5
1937	-3.0	12.5	20.4	31.3	42.6	48.2	55.6	55.9	44.3	32.2	21.3a	15.8	31.4
1938	16.2	13.4	27.8	30.6	39.9b	49.4	54.8	53.8	45.3	32.6	19.9	14.0a	33.2
1939	16.6	3.9	22.4	29.9a	40.6	47.6	56.4	50.2	43.8	34.8	21.9	17.9	32.2
1940	7.6	22.4	27.3	32.3	40.7	50.0	56.5	53.5	49.8	34.7b	16.9	15.3	33.9
1941	13.8	18.5	23.5	33.5b	45.2	50.5a	55.5	54.5	41.3	31.3	20.9	13.4	33.5
1942	3.9	12.8	21.5	34.3	38.8a	50.7	54.5	53.1	40.3	31.5	18.9	17.7	31.5
1943	13.5	18.1	12.9	35.0	36.3	47.2	56.6	54.5	38.5	28.1	19.9	13.0	31.1
1944	10.1a	13.4	18.8a	31.0	41.8	48.4	54.1	53.5	42.1	30.8	23.0	8.1	31.3
1945	16.8	17.1	22.2	26.7	39.4	46.6	56.7	53.9	40.1	33.6	23.0	10.5	32.2
1946	17.9	18.4	27.4	37.3	38.1	48.8	57.9	53.2	43.0	32.0	21.8	19.0	34.6
1947	15.7	13.5	17.9	31.6	40.4	46.6	57.1	57.1	44.9	37.4	17.8	18.4	33.2
1948	15.6b	16.2a	17.4	33.9	43.3	53.0	56.5	54.2	48.0	30.9	23.5	13.6	33.8
1949	0.1	13.0	23.5	32.7	44.9	51.8	57.4a	54.6	41.8	33.8a	26.8	15.5	33.0
1950	7.4	18.5	20.2	28.8	37.5	47.0	53.9	48.8	45.6	33.3	20.4	16.0a	31.4
1951	9.9	17.6	16.6	26.1	42.5	45.0	55.1	51.8	41.5	33.5	18.8	11.1	30.8
1952	13.1	16.8	19.9	30.2	41.6	53.0	53.1	55.3	42.8	27.7	13.5	14.4	31.8
1953	24.1a	16.0	24.2	27.5	39.7	51.8	57.4	54.1	41.9	32.3	24.1	14.5	34.0
1954	15.1	21.5a	16.4	32.1	41.0	52.1	57.9a	53.2	44.7a	33.0	24.9	20.3	34.3
1955	9.2	13.0	19.4	31.0	41.6	48.8	57.0	57.2	43.0	32.6	18.7	17.9	32.4
1956	14.1	13.3	20.9	26.5	44.0	52.4	53.8	49.9	39.1	29.3	20.9	18.4	31.9
1957	3.9	19.9	23.2	29.6	42.2	49.1a	55.6	54.8	39.9	38.4	21.9	22.6	33.4
1958	14.4	18.7	18.5	30.4	44.6	50.1	52.3	52.0	40.3	28.3	21.3	13.8	32.1
1959	14.4	15.3	22.3	28.6	41.7	52.7	52.2	53.1	39.9	28.8	16.2	16.2	31.8
1960	10.5	14.0	21.1	31.8	39.4	49.7	53.4	49.5	40.1	26.2	18.4	-999z	32.2a
1961	-999m	19.9	27.3	28.8	41.5	50.4	55.5	55.5	40.1a	29.5	19.3	13.2	34.6a
1962	6.7	13.6	18.6	31.7	42.3	50.3	54.4	50.5	42.2	33.0	26.0	14.8	32.0
1963	1.4	21.0	23.0	32.4	41.6	51.0	56.5	55.1	49.4	34.9	21.1	10.5	33.1
1964	15.4	13.9	17.6a	31.2	42.0	48.4	57.3	50.2	38.8	28.7	20.1	12.8	31.4
1965	17.9	13.8	11.7	34.7	41.5	50.8	56.6	51.0	38.5	32.9	25.3	15.6	32.5
1966	6.0	10.7	23.4	26.7	39.5	50.1	60.5	51.9	46.4	29.6	24.3	14.8	32.0
1967	19.4	20.4	26.5	33.3	39.2a	50.3	55.5	51.5	45.1	31.9	18.8a	8.5	33.4
1968	9.7	19.1	23.7	28.3	37.6	49.8	54.1	48.0	-999z	29.3	18.2	8.8	29.7a
1969	11.5	19.4	19.0	34.8	40.0	44.8a	54.7	53.7	45.9	30.9	23.6	16.9a	32.9
1970	12.6	18.6	18.5	27.8	40.8	48.6	55.6	53.4	39.2	28.6	23.6	12.1	31.6
1971	14.9	17.1	22.8	29.6	40.5	-999k	51.7	52.4	-999z	30.0	21.9	12.9	29.4b
1972	9.4	18.6	26.6	30.6	40.6	53.2	52.4	53.9	42.3	32.6	16.1	4.9	31.8

Appendix 2.1.4.B. Temperature data - minimum temperatures - Torrington Exp Farm station

ID: 488995
Latitude: 42.08 degrees
Longitude: -104.22 degrees
Elevation: 4098 feet
Station period of record: 01/01/1922-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1973	10.9	15.7	-999z	-999z	38.3	-999z	54.0	53.5	42.5	31.7	23.0	12.5	31.3c
1974	7.1	20.6	26.4	31.5	40.3	49.7	53.7	48.0	34.5	32.7a	20.3	16.1	31.7
1975	14	12.5	20.6b	29.0	39.9	47.5	56.4	51.3	38.9	29.2	18.8	19.0	31.4
1976	12.2	23.4	20.2	33.6	39.5	47.8	57.5	52.4	42.2	24.9	12.6	16.0	31.9
1977	3.3	14.0	18.3	37.4	43.4	53.1	56.0	52.2	42.6	29.3	21.0	11.0	31.8
1978	4.2	9.7	22.8	33.9	40.7	48.9	55.9	49.7	42.7	27.5	16.7	6.1a	29.9
1979	-6.8	14.2	25.3	32.3a	40.0	49.6a	55.4	52.5	43.1	31.3	13.8	14.4	30.4
1980	6.1	14.0	19.5	29.2	40.1a	48.8	55.0b	51.2	40.9a	26.9	20.6	18.8	30.9
1981	11.7a	12.5a	23.0	36.4b	41.3c	50.6a	55.7	51.2	43.4	31.3	22.9a	10.9a	32.6
1982	6.6c	8.7	23.3	25.6	40.5	48.4	54.4	54.7	42.4	28.5	15.5	12.8	30.1
1983	16.6	17.9a	-999d	26.3	35.9	49.0	-999z	55.8	38.3	27.2	18.6	0.9a	28.7b
1984	11.9	19.9	25.5	29.3	42.1	49.7	57.1	55.8	38.7	29.1	19.7	8.3	32.2
1985	6.0	12.0	22.8	32.9	42.8	46.8	54.0	47.8	38.1	27.6	9.8	8.4	29.1
1986	20.9	14.1	30.0	33.3	39.9	53.7	54.1	50.9	41.7	31.3	19.0	9.8	33.2
1987	12.7	19.4	21.0	30.9	46.6	50.0	55.4	51.4	39.6	26.5	21.0	5.5	31.7
1988	3.8	13.4	20.7	28.0	41.7	56.1	56.5	53.2	40.2	28.5	22.0	11.2	31.3
1989	10.7	4.5	19.7	30.7	41.6	47.9	57.7	53.6	41.7	28.5	23.4a	6.3a	30.5
1990	18.9	12.7	21.5	31.2	39.1	52.4	55.1	52.1	46.1	27.7	22.5	5.2	32.0
1991	7.9	18.3	22.7	31.4	44.0	52.5	56.2	55.0	43.2	27.6	19.4	13.6	32.7
1992	13.5	18.7	25.5	30.7	42.1	50.4	52.7	49.9	40.4	29.7	15.8	5.9	31.3
1993	8.8	-1.0	21.9	31.2	41.6	48.0	53.1	53.9	40.2	28.4	14.0	17.6	29.8
1994	15.3	10.3	23.3	29.7	44.5	52.7	54.3	54.6	43.0	33.4	21.8	15.7	33.2
1995	11.1	19.4	21.5	27.5	39.8	49.1	53.5	55.0	42.4	27.2	22.0	11.1	31.6
1996	4.8	12.2	17.3	29.7	42.6	52.1	57.1	53.5	43.6	28.7	16.4	14.4	31.0
1997	11.0	16.8	21.2	26.6	40.4	53.4	55.6	54.8	46.7	31.3	18.2	13.6	32.5
1998	11.2	20.9	20.1	28.9	41.1	45.6	58.5	55.3	48.1	34.1	26.4	9.7	33.3
1999	16.3	22.0	23.2	30.5	40.9	50.7	57.1	54.5a	41.0	27.7	21.9	17.6	33.6
2000	15.9	20.3	25.4	30.2	43.5	48.8	58.0	56.9	42.1	32.8	10.9	9.5	32.9
2001	12.4	11.4	23.0	31.9	42.0	50.6	59.9	55.8	44.8	29.0	18.4	13.2	32.7
2002	12.5	12.3	15.0	31.5	37.5	52.3	57.5	51.8	43.6	25.5	22.7	14.4	31.4
2003	15.4	10.8	21.9	34.2	42.2	48.9	57.6	56.7	40.3	29.6	18.8	15.2	32.6
2004	11.2	-999z	24.5	33.0	41.8	48.1	-999z	-999z	-999z	-999z	-999z	-999z	-999g

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - average temperatures - Wheatland 4N station

ID: 489615
Latitude: 42.11 degrees
Longitude: -104.95 degrees
Elevation: 4638 feet
Station period of record: 01/01/1893-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1893	33.2	29.0	36.1	40.9	52.9	67.5	73.8	70.0	63.0	49.6	37.6	32.8	48.9
1894	25.8	23.3	37.1	47.8	58.4	63.6	-999z	70.3	-999z	-999z	-999z	-999z	46.6e
1895	-999z	-999z	-999z	-999z	54.6	61.9d	70.1	71.8	67.4	55.1	38.8	29.6	56.2d
1896	35.3	36.5	31.9	45.3	59.3	-999z	71.0	69.0	59.0	50.8a	28.8	33.3	47.3a
1897	25.1	29.5	28.4a	-999z	60.0	66.1b	73.7a	71.1	67.5	52.3	42.0a	28.0c	49.4a
1898	-999i	36.3a	33.5a	48.9a	56.8	65.3	73.1	73.3	-999l	46.8d	-999t	28.2a	51.4c
1899	28.1	8.8	27.8	45.0	50.1	60.3b	69.0	69.5	61.8	-999z	-999z	-999z	46.7c
1900	-999z	-999z	-999z	-999z	-999k	73.6	73.3	74.6	64.3	56.8	46.0	40.6	61.3e
1901	38	24.7	39.4	48.4a	59.7	62.9	77.4	72.9	63.6	-999z	-999z	-999z	54.1c
1902	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999m	54.4e	-999s	35.0e	25.5b	-999i
1903	27.1c	13.9b	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
1904	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1905	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999o	-999l
1906	34.9	34.1	25.5	51.8	58.3	64.6	70.6	73.0	64.3	49.5a	37.0	38.8	50.2
1907	26.3	34.9	45.9	42.6	-999z	-999z	72.5	72.9	61.5	52.0	40.6	33.8	48.3b
1908	28.0	28.3	-999z	58.8	52.4	66.3	75.7	74.1	66.1	41.5	34.5	33.2	50.8a
1909	24.9	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999k
1910	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1911	-999z	-999z	-999z	-999z	-999z	69.5	69.7	68.1	62.1	43.4	36.7b	28.1a	53.9e
1912	26.5	26.4	21.9	44.9a	54.9	62.8	67.7	65.4	51.4	46.0	41.9	28.5	44.9
1913	-999g	16.6	29.8c	43.4	52.7	64.0	67.5	70.3e	57.7	43.4	41.8	19.6	46.1a
1914	33.7	27.1	42.3	47.2	-999z	67.3	74.2	71.0	62.4	53.4	47.6a	-999z	52.6b
1915	27	36.6	30.9	51.1	51.8a	59.2	67.1	65.7	61.1	53.0	40.3	33.2	48.1
1916	18.9	33.9	46.2	45.9	52.2	63.9	75.3	-999g	-999t	46.1a	36.5	25.1	44.4b
1917	23.5	30.1	32.4	-999z	-999z	-999z	-999z	-999z	-999z	42.1e	46.9d	32.8	-999f
1918	20.5	32.8	45.2	40.9	54.8	70.6c	71.2	69.4	57.7	-999j	35.1	32.7	48.3a
1919	35.8	29.0	-999k	46.0	55.0	66.2	73.4e	72.8	64.1	42.6	31.2	28.0	49.5a
1920	33.5	29.7	36.5	35.6	53.6d	64.9	71.0	67.2	59.0	51.4c	-999g	30.8	48.5a
1921	-999k	-999z	-999z	-999z	53.8a	66.5	-999z	-999z	-999z	-999z	-999z	-999z	-999j
1922	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	51.8	35.2	28.3	-999i
1923	33.9	26.1	32.1b	45.0	56.3	63.6	72.4	-999i	58.8e	43.0	40.9	-999f	47.2b
1924	25.4	36.9	26.9	44.6	52.5	65.4	72.0	71.4c	59.2	52.5	41.9e	-999t	49.9a
1925	-999o	40.6	42.4	51.4	58.0	64.8	74.4	70.0e	64.0	39.7	39.3	31.5	52.4a
1926	30.0	37.4	37.7	48.3	59.7	65.7	71.2	71.3	58.7	52.5	39.7	29.9	50.2
1927	29.5	-999i	34.6	45.1	55.9	64.3	70.0	66.6a	60.4	53.7	43.7	25.8	50.0a
1928	33.4	31.5	37.9c	46.1b	60.3	62.0b	67.4c	-999z	-999z	-999z	-999z	-999z	48.4e
1929	22.2c	17.4d	-999k	-999z	-999z	65.9a	74.4	-999z	56.2	-999z	33.5e	-999z	-999f
1930	-999z	-999z	-999z	-999z	-999l	-999g	74.5a	70.4a	59.3a	45.6b	39.1b	31.9a	-999f
1931	34.3a	35.7a	-999g	46.8	54.1	71.0a	74.9	69.5a	65.5	51.1	36.1a	35.5a	52.2a
1932	24.8a	36.1a	30.7	47.7	57.3	64.6	74.4	72.3	60.8	45.1	41.5	22.0	48.1
1933	37.0	23.9	41.4	43.3	53.7	71.7	75.4	69.1	66.2	55.6	43.7	41.4	51.9
1934	38.0	35.3b	42.2	50.7	66.3	69.1	77.7	73.9	58.6	57.1	43.4	32.8	53.8
1935	34.7	35.6	40.5	43.1	49.0	64.7	76.2	73.8	62.9	50.5	36.6	31.0	49.9
1936	29.3	15.2	39.3	46.4	61.2	70.7	79.0	73.6	61.8	49.9	37.1	33.1	49.7
1937	16.1	28.2	35.9	45.2	57.7	63.5	72.0	74.2	62.4	48.4	34.2	32.3	47.5
1938	31.8	33.3	41.9	47.5	53.5	66.1	71.9	72.7	62.8	53.6	34.8	31.8	50.1
1939	33.3	21.7	39.1	48.5	60.3	63.5	75.2	70.1	64.5	52.9	40.6	38.6	50.7
1940	21.4	33.9	40.9	45.3	56.9	68.5	75.3	71.3	65.7	54.8	35.2	33.9	50.2
1941	32.9	33.6a	36.3	46.0	60.0	63.6	71.9	70.1	58.1	47.7	41.8	32.9	49.6
1942	25.7	26.3	35.4	49.3	53.3	62.8	73.0	71.2	59.8	50.1	40.0	34.9	48.5
1943	31.0	38.6	32.2	54.2	52.8	64.6	74.2	74.0	60.7	50.0	38.8	32.5a	50.3

Appendix 2.1.4.B. Temperature data - average temperatures - Wheatland 4N station

ID: 489615
Latitude: 42.11 degrees
Longitude: -104.95 degrees
Elevation: 4638 feet
Station period of record: 01/01/1893-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1944	29.3	31.4	30.0	43.5	57.7	63.5	71.1	72.4	62.0	52.6	37.1	27.0	48.1
1945	30.0	31.1	39.0	39.1	54.7	58.7	71.2	71.5	57.8	52.9a	44.8	27.8	48.2
1946	32.9	34.1	42.3	54.0	51.1	66.2	73.0	70.2	62.0	47.1	37.0	36.8	50.5
1947	29.8	27.4	35.3	47.0	55.9	60.7	74.1	75.1	64.7	56.3	31.2	31.7	49.1
1948	28.2a	27.8	31.6	50.5	57.3	64.8	72.4	72.7a	66.6	50.4a	34.9	28.1a	48.8
1949	14.3a	28.4	36.9	50.1a	56.8	64.0	73.8	71.9	60.1	48.1	46.4	30.9	48.5
1950	25.8	37.0	36.6	44.4	50.9	64.8	67.9	67.1	58.4	55.1	39.6	34.4	48.5
1951	25.7	34.6	33.5	42.0	55.4	58.2	71.5	68.0	57.6	47.4	36.9	25.7a	46.4
1952	29.7	31.8	29.5	47.4	55.0	69.1	71.6	72.4	63.4a	50.0c	32.1	32.4	48.7
1953	38.1	28.9	41.0	41.3	51.9	68.2	75.0	72.0	64.8	52.7	42.3	29.8	50.5
1954	33.3	41.5	31.2	50.9	56.0	67.6	78.2	72.6	64.9	49.3	43.6	36.3	52.1
1955	26.3	26.0	31.4	48.7	58.3	61.0	73.9	75.0	64.1	54.2	32.4	32.3	48.6
1956	29.8	29.3	38.7	43.3	59.2	73.0	72.7	69.4	64.2	55.5	35.9	35.5	50.5
1957	21.6	38.3	38.2	42.1	53.2	63.9	73.4	70.7	58.2	48.6	34.2	38.2	48.4
1958	32.1	33.8	30.4	43.9	60.5	65.4	67.4	72.6	63.4	53.5	40.1	32.8	49.7
1959	31.1	29.4	36.3	46.3	54.5	68.7	70.8	71.8	58.9	47.0	36.0a	35.4	48.8
1960	27.9	24.9	36.4	49.2	56.6	67.9	74.1	70.1	63.8	51.9	36.9	29.7	49.1
1961	34.4	37.3a	38.9	44.8	55.5	66.6	72.6	73.6	56.4	50.5	34.5	28.2	49.4
1962	22.9	31.0	35.3	50.8	59.0	63.6	69.6	71.2	61.7	52.6	43.7	35.2	49.7
1963	17.9	36.1	37.9	47.2	58.8	68.1	75.2	72.3	66.0	57.4	43.4	29.3	50.8
1964	30.4	29.1	32.6	45.6b	59.4	64.3	76.8	69.6	62.8d	51.4	38.1	30.4	49.2
1965	35.7	30.2a	27.2	50.7	55.8	64.1	71.8	68.4	52.1	54.4	-999h	34.7e	49.5a
1966	29.3	28.9	43.3	44.5	61.3	65.4	76.4	68.3	63.4	50.6	42.0	33.2	50.5
1967	34.9	34.2	42.9	47.3	50.8	60.0	69.2	67.9	61.6	51.7	34.0	23.3	48.1
1968	29.2	33.1	40.7	42.2	51.0	63.6	70.0	65.7	57.0	50.5	35.3	26.2	47.0
1969	28.2	31.1	31.5	50.5	58.7	59.8	72.0	71.8	63.4	41.3	39.3	32.1	48.3
1970	28.6	35.7	31.4	40.0	56.4	64.3	72.0	71.7	57.4	43.8	37.8	32.0	47.6
1971	29.2	28.7	35.4	44.7	52.9	65.8	68.7	70.7	56.0	46.7	38.4	31.2	47.4
1972	24.3	35.2	43.4	45.7	54.6	66.4	67.8	68.6	59.4	47.5	32.9	22.6	47.4
1973	26.0	31.3	36.6	40.8	53.0	64.7	69.5	70.6	56.7	51.8	36.7	31.4	47.4
1974	23.4	33.7	40.7	46.9	56.1	66.1	72.7	65.5	55.5	51.4	38.7b	28.8	48.3
1975	28.5	28.6a	35.0	42.8	54.2	62.0	73.0	69.0	58.0	52.1	37.4	32.9	47.8
1976	29.1	35.7	36.3	47.1	55.9	63.8	73.1	68.3	59.4	45.9a	35.3	32.8	48.6
1977	22.4	35.0	36.9	49.1	58.5	70.0	73.5	68.0	63.5	52.0	38.2	30.5	49.8
1978	19.0	22.5	39.6	47.7	53.5	65.3	72.5	67.0	61.6	50.4	33.5	24.9e	46.4
1979	-999z	-999z	-999i	47.0	52.9	64.8	73.2	68.9	62.8	51.3	29.3	35.0	53.9c
1980	22.5	30.0	34.4	46.4	54.9	67.5	74.5	68.5	61.3	48.0	39.3	38.3	48.8
1981	32.3	32.7	40.3	52.7	53.6	67.4	73.4	68.5	63.0	49.7	44.0	33.0	50.9
1982	25.0	31.5	39.9	44.2	54.0	62.0	71.8	73.0	60.1	48.1	36.1	32.6	48.2
1983	36.1	-999z	38.3	40.2	50.9	63.3	72.9	75.4	63.3	53.2	37.3	16.7	49.8a
1984	28.9	35.0	37.7	40.9	57.6	65.6	73.0	71.9	57.9	46.1	39.7	29.5	48.7
1985	22.8	26.8	40.3	49.4	59.8	65.0	72.5	68.9	56.7	48.8	27.3	25.5	47.0
1986	38.8	31.7b	47.0	47.5	55.1	69.1	71.0	70.8	59.1	49.0	38.1	31.6	50.7
1987	30.7	34.9	37.1	50.9	60.2	66.6	72.5	68.8	61.6	49.4	39.3	27.4a	49.9
1988	22.9	31.4	36.6	48.9	57.9	73.5	73.1	71.6	60.4	51.2	39.4	31.3	49.8
1989	35.1	20.3	39.0	48.9a	57.2	64.6	74.9	70.8	61.1	50.7	42.8	25.1	49.2
1990	36.9	31.4	36.7	47.5	54.1	68.4	70.4	69.1	65.0	52.0	41.9	23.9	49.8
1991	26.4	40.2	40.6	46.0	56.7	66.2	70.9	70.9	61.2	49.0	35.8	31.8	49.6
1992	34.2	39.6	42.6	50.9	59.4	65.2	67.7	68.1	63.4	51.8	32.5	25.4	50.1
1993	25.4	21.9	39.3	46.8	57.2	61.4	68.7	69.4	58.3	48.8	33.0	33.7	47.0
1994	33.3	28.4	43.5	47.9	61.5	69.2	70.2	72.1	63.3	49.5	36.5	33.9	50.8

Appendix 2.1.4.B. Temperature data - average temperatures - Wheatland 4N station

ID: 489615
Latitude: 42.11 degrees
Longitude: -104.95 degrees
Elevation: 4638 feet
Station period of record: 01/01/1893-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1995	31.0	34.9	40.1	44.7	49.9	62.0	70.4	73.6	60.5	49.4	42.0	33.2	49.3
1996	25.5	33.2	35.2	48.7	54.9	67.8	72.7	70.9	60.4	49.8	36.7	31.3a	48.9
1997	28.2	31.8	43.7	41.2	56.4	67.3	72.3	70.5	64.1	50.9	37.0	30.8	49.5
1998	31.8	35.9	35.6	46.2	57.6	61.6	74.5	71.2	67.0	49.2	43.5	29.7	50.3
1999	33.8	40.1a	42.8a	43.4	54.3a	64.1c	73.8e	72.8	57.7	52.5	48.4	35.0	51.6
2000	33.3	38.3	41.0	48.1	58.7	66.0	75.0	75.0a	61.7	50.6	26.3	25.8	50.0
2001	29.1	29.1	38.7	47.8a	56.4	69.7	76.3	73.6	63.1	50.5	42.6a	31.3a	50.7
2002	30.2	32.4	28.7	49.1	55.4	69.4	76.2	70.5	61.2	42.0	38.0	34.6	49.0
2003	36.7	28.3	40.0	49.1	56.4	62.1	76.8	74.3	60.5	52.7	36.4	33.1	50.5
2004	32.4	32.2	45.2	49.7	59.4	64.3	-999z	-999z	-999z	-999z	-999z	-999z	-999f

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - maximum temperatures - Wheatland 4N station

ID: 489615
Latitude: 42.11 degrees
Longitude: -104.95 degrees
Elevation: 4638 feet
Station period of record: 01/01/1893-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1893	46.4	42.1	49.3	55.0	68.9	85.1	90.7	87.6	82.3	65.8	51.0	47.0	64.3
1894	42.1	38.5	48.8	60.4	72.4	76.0	-999z	85.3	-999z	-999z	-999z	-999z	60.5e
1895	-999z	-999z	-999z	-999z	68.9	75.0d	83.3	87.0	81.4	72.7	54.9	41.3	70.6d
1896	46.7	50.2	45.3	57.4	74.1	-999z	88.1	90.7	79.2	70.2	43.5	52.4	63.4a
1897	41.5	44.1	47.9	-999z	78.1	81.5a	90.9a	87.3	84.2	66.2	56.9a	42.8	65.6a
1898	-999f	50.8	48.3a	64.1	63.0	83.0	88.8	90.1	-999f	62.3d	-999h	41.0a	65.7c
1899	39.0	19.5	38.0	58.1	62.5	73.8b	85.9	87.0	80.9	-999z	-999z	-999z	60.5c
1900	-999z	-999z	-999z	-999z	-999k	89.6	88.1	91.9	79.1	73.1	61.0	52.9	76.5e
1901	48.3	36.8	50.6	61.0a	73.4	76.1	93.5	86.8	77.0	-999z	-999z	-999z	67.1c
1902	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999m	64.0	-999s	44.9d	31.6b	-999i
1903	33.1c	20.3	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
1904	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1905	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999o	-999l
1906	48.7	47.8	35.8	68.0	73.6	79.1	84.5	86.5	78.9	62.4a	49.9	50.9	63.8
1907	38.7	47.1	59.5	57.8	-999z	-999z	87.1	88.1	76.1	68.7	58.1	46.2	62.7b
1908	38.9	39.1	-999z	72.4	67.7	79.1	86.8	87.6	78.1	50.3	47.1	45.5	63.0a
1909	36.1	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999k
1910	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1911	-999z	-999z	-999z	-999z	-999z	85.3	85.2	83.1	77.0	55.3	48.7b	37.5a	67.4e
1912	36.5	37.0	32.6	57.0a	68.5	76.8	80.4	78.4	62.3	58.5	52.4	38.3	56.6
1913	36.5e	27.3	40.9b	63.4	75.7	87.4	92.2	97.4b	81.2	64.3	63.1	38.2	64.0
1914	52.7	44.3	59.8	62.9	-999z	85.6	93.6	91.6	83.3	71.0	67.3a	-999z	71.2b
1915	42.9	53.3	42.6	66.3	66.5a	73.5	82.6	82.5	77.9	70.4	54.8	48.0	63.4
1916	33.3	48.8	60.8	63.1	67.5	81.8	93.0	-999f	-999t	59.5a	48.9	36.4	59.3b
1917	33.3	43.3	45.0	-999z	-999z	-999z	-999z	-999z	-999z	59.8e	60.9d	46.4	-999f
1918	32.2	44.3	58.7	52.7	68.9	86.1c	86.6	86.0	71.8	-999j	48.6	41.0	61.5a
1919	46.3	40.5	-999k	58.6	71.9	83.7	88.8e	90.0	79.7	54.8	41.6	38.2	63.1a
1920	44.2	41.6	47.5	46.0	66.0d	79.3	86.9	82.0	72.5	65.0c	-999g	41.0	61.1a
1921	41.8	-999z	60.1	65.3a	65.8a	79.8	-999z	-999z	-999z	-999z	-999z	-999z	-999g
1922	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	69.3	47.1	39.1	-999i
1923	43.4	39.9	45.7b	60.1	70.9	77.5	87.7	-999i	74.4e	56.2	53.5	-999f	60.9b
1924	37.7	49.5	38.4	59.0	68.1	82.9	90.3	90.5c	75.8	66.5	55.0e	-999t	64.9a
1925	-999o	51.6	56.4	66.2	73.2	80.0	91.3	88.5e	80.4	52.2	51.5	42.1	66.7a
1926	38.6	47.4	51.3	63.7	73.7	81.4	86.1	90.2	75.4	68.0	50.3	39.0	63.8
1927	41.5	-999i	46.5	57.9	70.3	78.0	85.7	82.3a	75.8	70.0	55.8	37.7	63.8a
1928	43.4	43.2	49.3c	62.6b	75.8	77.2b	88.5c	-999z	-999z	-999z	-999z	-999z	62.9e
1929	34.9c	26.3d	-999k	-999z	-999z	83.5a	91.8	-999z	70.4	-999z	45.8e	-999z	-999f
1930	-999z	-999z	-999z	-999z	-999l	-999g	90.3a	83.2a	74.5a	58.7b	52.1b	43.0a	-999f
1931	45.1a	49.7a	-999g	60.8	68.4	86.3a	91.7	85.2a	80.9	65.8	49.7a	47.1a	66.4a
1932	36.8a	49.3a	43.5	61.3	71.4	79.5	91.4	88.7	78.2	59.7	53.9	33.5	62.3
1933	47.6	38.2	54.8	56.2	66.3	87.3	90.6	84.1	83.6	73.7	57.3	54.4	66.2
1934	49.0	47.7b	57.3	65.2	83.9	86.1	94.5	90.5	76.1	72.2	56.1	43.7	68.5
1935	46.5	49.5	53.7	55.4	59.3	79.9	92.5	90.8	80.0	67.5	47.7	42.8	63.8
1936	40.7	29.8	52.7	61.2	77.1	86.4	95.6	89.5	79.1	64.4	49.0	42.4	64.0
1937	28	39.3	47.6	58.5	72.4	78.5	86.9	90.7	79.4	60.9	43.8	42.5	60.7
1938	43.1	47.3	53.9	62.0	66.4	81.4	88.4	88.8	77.8	68.5	44.9	40.9	63.6
1939	43.3	32.8	52.5	63.6	76.5	78.5	93.2	88.4	80.7	67.7	57.8	49.9	65.4
1940	32.0	43.8	53.6	58.5	73.2	85.5	91.9	88.5	80.6	69.4	48.7	45.9	64.3
1941	45.4	46.1	48.7	60.2	75.9	78.1	87.7	85.6	74.7	61.8	54.9	45.6	63.7
1942	38.2	37.6	49.4	65.0	67.6	76.5	89.5	87.7	75.9	64.8	54.2	45.9	62.7
1943	43.9	52.0	48.0	69.3	66.7	79.5	92.5	91.8	80.3	68.6	51.8	44.3a	65.7

Appendix 2.1.4.B. Temperature data - maximum temperatures - Wheatland 4N station

ID: 489615
Latitude: 42.11 degrees
Longitude: -104.95 degrees
Elevation: 4638 feet
Station period of record: 01/01/1893-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1944	40.5	43.1	41.4	55.6	73.4	78.4	88.0	90.3	80.7	69.2	50.4	41.9	62.7
1945	39.5	42.0	50.7	50.8	69.6	71.4	87.6	87.4	78.4	71.9a	63.0	39.2	62.6
1946	43.7	46.6	55.2	69.4	63.5	82.4	88.7	85.6	78.4	57.7	47.2	46.7	63.8
1947	39.7	38.2	49.0	60.4	70.4	73.3	90.8	91.7	82.3	71.4	41.5	41.0	62.5
1948	38.5	39.4	43.2	65.9	72.3	78.6	89.4	89.4a	85.0	67.7	45.0	38.3a	62.7
1949	26.0a	40.3	50.2	66.7	69.7	78.0	91.0	90.3	79.4	62.5	63.0	43.6	63.4
1950	40.4	49.3	50.4	60.0	64.5	81.3	83.7	86.8	73.4	73.5	53.0	46.4	63.6
1951	36.5	47.7	48.5	56.2	68.7	72.2	88.0	85.4	74.4	61.5	49.0	36.9	60.4
1952	40.8	43.2	41.1	65.0	69.8	88.0	91.0	88.3	81.9a	68.6c	44.2	40.7	63.6
1953	47.9	39.7	56.0	54.8	65.4	84.8	92.5	88.8	83.3	69.6	54.3	40.7	64.8
1954	46.3	56.0	44.5	67.4	70.3	83.2	94.8	89.5	81.0	64.3	57.0	45.7	66.7
1955	35.8	37.5	44.6	64.1	73.0	73.8	90.7	90.0	81.3	70.5	44.6	43.8	62.5
1956	41.5	39.7	52.0	58.7	72.9	90.4	87.1	84.6	82.6	71.7	46.7	43.9	64.3
1957	33.2	51.4	51.7	53.2	63.8	78.5	89.5	85.7	75.1	60.7	43.4	48.5	61.2
1958	43.2	46.3	41.9	55.6	75.3	80.6	82.3	90.1	81.2	70.2	52.6	43.5	63.6
1959	42.3	40.7	47.8	59.6	66.7	85.3	88.7	89.0	74.2	61.6	50.0a	48.4	62.9
1960	38.4	34.5	49.4	65.1	72.3	84.1	92.1	89.6	80.9	67.7	48.5	40.0	63.5
1961	44.8	48.3	50.7	58.8	68.7	82.1	89.5	90.2	71.2	65.1	46.1	38.4	62.8
1962	32.6	42.3	47.5	66.5	72.8	77.4	84.5	89.2	78.5	69.5	56.7	46.1	63.6
1963	30.5	49.2	50.2	61.3	75.1	83.9	92.9	87.9	82.9	73.3	56.9	41.8	65.5
1964	41.2	39.2	44.4	59.4a	73.1	79.3	92.8	86.5	79.7d	67.1	50.0	41.0	62.8
1965	44.7	41.1	39.5	63.5	68.9	77.1	86.9	84.3	65.8	70.5	-999h	45.6e	62.5a
1966	42.7	41.0	58.1	61.0	78.5	81.1	91.8	83.9	77.9	65.4	56.0	43.4	65.1
1967	45.2	44.8	57.5	62.6	63.1	72.2	84.7	86.2	78.8	68.6	48.2	34.8	62.2
1968	43.3	46.2	55.4	55.6	64.7	79.5	87.0	83.1	76.0	68.1	49.6	40.2	62.4
1969	43.1	45.4	44.3	66.0	74.8	73.0	89.3	90.0	81.8	52.5	52.9	44.5	63.1
1970	39.5	50.4	43.4	52.8	72.7	80.0	88.9	89.6	75.2	59.4	49.3	44.6	62.2
1971	40.0	40.2	47.5	59.2	66.0	80.9	85.0	89.3	71.7	60.6	50.4	43.0	61.2
1972	36.0	48.4	58.1	58.7	69.4	82.6	84.5	83.7	76.4	63.1	43.3	33.6	61.5
1973	37.6	44.4	47.6	52.9	68.9	81.1	84.9	88.2	69.6	68.6	48.2	43.5	61.3
1974	36.2	45.6	54.8	61.3	72.7	83.4	91.1	82.8	74.4	69.1	51.2b	42.7	63.8
1975	40.8	41.1	47.5	58.2	69.2	78.1	90.1	86.9	76.0	69.9	51.4	45.0	62.9
1976	41.2	48.2	51.4	61.0	71.6	80.2	89.6	86.0	78.0	64.2a	50.1	46.3	64.0
1977	37.6	50.1	51.2	65.0	73.9	86.1	89.3	84.3	82.5	69.4	52.2	43.5	65.4
1978	30.9	33.0	53.9	61.3	66.9	82.8	90.0	84.1	80.0	68.2	45.8	35.5e	61.0
1979	-999z	-999z	-999i	63.7	67.5	81.1	90.8	84.9	83.0	67.7	42.1	48.0	69.9c
1980	36.1	41.8	47.2	61.3	69.5	87.8	93.1	85.5	80.2	65.1	52.4	51.9	64.3
1981	48.2	47.3	55.5	68.7	66.1	85.9	90.6	86.2	83.0	64.5	58.6	45.5	66.7
1982	40.0	45.1	54.8	61.5	67.7	77.0	90.5	89.8	74.7	62.5	48.5	43.9	63.0
1983	49.1	-999z	49.5	52.3	64.9	77.3	89.7	93.0	83.1	70.0	48.8	27.9	64.2a
1984	39.0	46.0	50.2	53.6	75.3	83.0	90.9	88.3	74.6	60.8	54.2	42.7	63.2
1985	35.3	39.8	56.6	66.6	76.6	82.5	90.2	88.2	72.1	65.3	39.4	36.6	62.4
1986	51.2	45.1a	62.0	61.8	72.4	85.3	88.6	88.5	72.7	63.3	50.7	45.4	65.6
1987	42.8	46.9	50.6	69.4	73.8	84.1	89.7	85.2	80.5	67.7	53.2	39.3	65.3
1988	34.5	45.0	48.8	66.3	74.8	89.5	89.5	89.8	78.2	68.6	51.5	43.6	65.0
1989	46.5	32.0	53.0	64.8a	73.4	81.1	92.8	87.8	78.1	65.7	55.8	37.9	64.1
1990	48.8	44.0	49.4	62.3	69.6	85.7	85.7	85.7	82.1	68.5	54.6	37.0	64.4
1991	38.3	54.5	55.0	59.2	69.5	80.1	87.1	86.6	78.1	65.8	46.5	45.2	63.8
1992	46.8	53.9	57.5	68.2	75.3	80.2	82.6	84.3	82.3	69.1	43.9	37.2	65.1
1993	36.5	35.8	51.8	60.6	72.1	75.8	85.2	85.8	74.2	64.1	44.1	43.7	60.8
1994	44.6	41.4	58.8	64.1	77.7	86.5	86.5	90.0	81.4	63.7	48.0	45.9	65.7

Appendix 2.1.4.B. Temperature data - maximum temperatures - Wheatland 4N station

ID: 489615
Latitude: 42.11 degrees
Longitude: -104.95 degrees
Elevation: 4638 feet
Station period of record: 01/01/1893-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1995	43.5	47.0	54.2	58.2	60.4	75.6	86.7	91.7	76.0	64.4	55.1	45.9	63.2
1996	38.8	46.8	48.6	64.6	68.7	84.8	88.8	88.7	78.2	65.3	49.8	42.8	63.8
1997	39.0	43.2	59.0	55.0	72.4	82.0	88.8	85.8	78.9	67.5	49.5	41.4	63.5
1998	43.7	47.1	48.3	61.3	72.9	75.9	90.3	87.5	84.7	62.0	53.7	42.6	64.2
1999	45.8	52.2	60.0	55.7	68.6	78.7	90.1	88.6	74.1	71.1	65.3	47.5	66.5
2000	45.5	50.9	55.1	64.0	75.0	84.2	93.6	91.9	79.2	65.1	37.7	38.8	65.1
2001	40.2	40.4	52.0	61.2	71.1	87.0	94.9	93.7	82.1	65.8	56.8	43.4	65.7
2002	43.2	46.6	42.6	64.9	71.6	88.7	94.2	88.4	77.7	55.8	48.7	45.7	64.0
2003	49.8	40.4	52.9	62.1	71.5	75.7	95.0	91.2	77.1	70.9	47.0	45.1	64.9
2004	45.8	44.7	61.4	65.0	74.5	79.6	-999z	-999z	-999z	-999z	-999z	-999z	-999f

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.B. Temperature data - minimum temperatures - Wheatland 4N station

ID: 489615
Latitude: 42.11 degrees
Longitude: -104.95 degrees
Elevation: 4638 feet
Station period of record: 01/01/1893-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1893	20.0	15.9	22.9	26.8	37.0	49.9	56.9	52.4	43.7	33.4	24.2	18.5	33.5
1894	9.4	8.0	25.4	35.2	44.3	51.2	-999z	55.4	-999z	-999z	-999z	-999z	32.7e
1895	-999z	-999z	-999z	-999z	40.4	48.5a	56.9	56.6	53.4	37.6	22.6	17.8	41.7d
1896	23.9	22.9	18.5	33.1	44.5	-999z	53.9	47.3	38.9	31.3a	14.2	14.1	31.1a
1897	8.8	14.9	8.1a	-999z	41.9	50.1a	56.3	54.9	50.9	38.5	27.8	14.5c	33.3a
1898	19.3d	21.6a	18.5	33.0a	50.5	47.7	57.3	56.5	-999h	31.1a	-999t	14.7	35.0b
1899	17.2	-1.9	17.6	31.8	37.6	47.2	52.2	51.9	42.8	-999z	-999z	-999z	32.9c
1900	-999z	-999z	-999z	-999z	-999k	57.5	58.4	57.3	49.5	40.4	31.0	28.4	46.1e
1901	27.7	12.6	28.1	35.7a	46.0	49.7	61.4	59.1	50.2	-999z	-999z	-999z	41.2c
1902	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l	43.9e	-999r	24.8c	19.2	-999i
1903	20.9	7.5b	-999h	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
1904	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1905	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999o	-999l
1906	21.1	20.4	15.1	35.7	42.9	50.1	56.7	59.4	49.8	36.3	24.1	26.8	36.5
1907	13.9	22.6	32.2	27.3	-999z	-999z	57.8	57.7	46.8	35.4	23.2	21.4	33.8b
1908	17.1	17.5	-999z	45.1	37.1	53.4	64.6	60.6	54.2	32.6	21.8	21.0	38.7a
1909	13.6	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999k
1910	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1911	-999z	-999z	-999z	-999z	-999z	53.8	54.1	53.1	47.3	31.5	23.0	18.1	40.1e
1912	16.5	15.9	11.2	33.1	41.4	48.8	54.9	52.5	40.5	33.5	31.3	18.7	33.2
1913	12.5e	5.8	19.8b	23.4	29.7	40.6	42.8	43.2c	34.3	22.5	20.6	0.9	24.7
1914	14.8	9.9	24.7	31.5	-999z	49.0	54.8	50.3	41.5	35.7	27.7	-999z	34.0b
1915	11.0	19.9	19.1	35.9	37.0a	44.8	51.6	49.0	44.4	35.5	25.9	18.3	32.7
1916	4.5	19.0	31.6	28.6	36.9	46.0	57.6	-999g	-999t	32.6a	24.1	13.8	29.5b
1917	13.6	16.9	19.9	-999z	-999z	-999z	-999z	-999z	-999z	24.3e	33.0d	19.3	-999f
1918	8.9	21.2	31.6	29.1	40.7	55.1c	55.9	52.9	43.6	-999j	21.5	24.4	35.0a
1919	25.3	17.4	-999k	33.3	38.0	48.7	58.0e	55.6	48.5	30.5	20.9	17.7	35.8a
1920	22.9	17.9	25.4	25.3	41.3d	50.5	55.1	52.4	45.5	37.7c	-999g	20.5	35.9a
1921	-999k	-999z	-999z	-999z	41.9a	53.2	-999z	-999z	-999z	-999z	-999z	-999z	-999j
1922	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	34.3	23.2	17.5	-999i
1923	24.4	12.4	18.9	29.9	41.8	49.7	57.1	-999i	43.2e	29.8	28.2	-999f	33.5b
1924	13.1	24.2	15.4	30.2	37.0	47.9	53.7	52.3c	42.6	38.6	28.9e	-999t	34.9a
1925	-999o	29.6	28.5	36.6	42.8	49.5	57.5	51.6e	47.7	27.2	27.0	21.0	38.1a
1926	21.5	27.5	24.2	32.9	45.6	50.0	56.4	52.5	41.9	37.0	29.1	20.7	36.6
1927	17.4	-999i	22.7	32.3	41.6	50.6	54.4	50.9a	44.9	37.4	31.7	14.0	36.2a
1928	23.3	19.7	26.5c	29.6b	44.8	46.8b	46.4c	-999z	-999z	-999z	-999z	-999z	33.9e
1929	9.4c	8.5d	-999h	-999z	-999z	48.4a	57.0	-999z	42.0	-999z	21.1e	-999z	-999f
1930	-999z	-999z	-999z	-999z	-999l	48.4a	58.3	57.8	44.0	32.5b	26.1a	21.2	41.2e
1931	23.4	21.6	-999f	32.9	39.8	55.6	58.2	53.9	50.0	36.4	22.4	23.6	38.0a
1932	12.4	22.0	17.8	34.1	43.3	49.8	57.4	55.9	43.4	30.5	29.0	10.5	33.9
1933	26.3	9.6	27.9	30.5	41.1	56.2	60.3	54.1	48.9	37.5	30.1	28.4	37.6
1934	27.0	22.9b	27.2	36.1	48.7	52.2	60.8	57.3	41.1	42.0	30.7	21.8	39.0
1935	23.0	21.8	27.3	30.9	38.7	49.4	59.8	56.8	45.7	33.5	25.5	19.1	36.0
1936	17.8	0.7	25.9	31.5	45.4	55.1	62.4	57.7	44.6	35.5	25.1	23.9	35.5
1937	4.3	17.2	24.2	31.9	42.9	48.6	57.0	57.7	45.3	35.9	24.6	22.1	34.3
1938	20.5	19.4	29.9	33.0	40.7	50.7	55.4	56.5	47.9	38.7	24.7	22.6	36.7
1939	23.4	10.7	25.8	33.4	44.1	48.5	57.2	51.8	48.3	38.1	23.3	27.4	36.0
1940	10.9	24.0	28.1	32.1	40.6	51.5	58.6	54.1	50.7	40.3	21.8	21.8	36.2
1941	20.4	21.1a	23.9	31.7	44.2	49.1	56.1	54.5	41.5	33.5	28.6	20.1	35.4
1942	13.3	15.0	21.4	33.6	39.0	49.1	56.4	54.8	43.7	35.4	25.9	23.9	34.3
1943	18.1	25.3	16.4	39.2	38.9	49.6	55.9	56.1	41.0	31.5	25.8	20.7	34.9

Appendix 2.1.4.B. Temperature data - minimum temperatures - Wheatland 4N station

ID: 489615
Latitude: 42.11 degrees
Longitude: -104.95 degrees
Elevation: 4638 feet
Station period of record: 01/01/1893-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1944	18.2	19.7	18.7	31.3	42.1	48.6	54.3	54.4	43.3	36.0	23.7	12.2	33.5
1945	20.4	20.3	27.3	27.4	39.9	45.9	54.8	55.6	37.1	33.9a	26.6	16.5	33.8
1946	22.1	21.5	29.5	38.6	38.7	50.0	57.2	54.8	45.6	36.5	26.7	26.8	37.3
1947	19.9	16.5	21.6	33.5	41.4	48.0	57.4	58.5	47.0	41.3	20.8	22.4	35.7
1948	17.7a	16.2	20.0	35.0	42.3	50.9	55.4	55.9a	48.2	32.8a	24.7	17.9a	34.8
1949	2.6a	16.4	23.6	34.2a	43.8	50.0	56.6	53.5	40.9	33.7	29.8	18.3	33.6
1950	11.2	24.6	22.9	28.8	37.2	48.4	52.1	47.4	43.4	36.7	26.2	22.4	33.5
1951	14.9	21.6	18.5	27.9	42.1	44.1	54.9	50.6	40.8	33.3	24.7	14.5a	32.3
1952	18.5	20.4	17.8	29.8	40.3	50.3	52.3	56.4	45.0a	31.4c	20.0	24.1	33.9
1953	28.4	18.0	25.9	27.8	38.5	51.7	57.4	55.3	46.2	35.9	30.2	18.9	36.2
1954	20.3	27.0	18.0	34.3	41.6	51.9	61.6	55.7	48.7	34.4	30.1	26.9	37.5
1955	16.8	14.5	18.1	33.3	43.5	48.2	57.0	60.1	46.9	37.9	20.1	20.8	34.8
1956	18.2	18.8	25.4	27.9	45.6	55.6	58.3	54.1	45.7	39.4	25.0	27.0	36.7
1957	10.1	25.1	24.6	30.9	42.7	49.3	57.2	55.6	41.3	36.5	25.0	27.9	35.5
1958	21.0	21.3	19.0	32.1	45.8	50.2	52.5	55.2	45.5	36.8	27.5	22.0	35.7
1959	19.9	18.1	24.8	33.0	42.2	52.1	52.9	54.6	43.5	32.5	21.0	22.4	34.7
1960	17.5	15.3	23.5	33.2	40.9	51.7	56.2	50.6	46.6	36.1	25.4	19.4	34.7
1961	24.1	26.0a	27.0	30.7	42.4	51.2	55.6	56.9	41.7	35.8	22.8	18.0	36.0
1962	13.2	19.8	23.1	35.0	45.2	49.8	54.7	53.2	44.9	35.7	30.8	24.4	35.8
1963	5.4	23.1	25.7	33.1	42.5	52.4	57.5	56.7	49.1	41.5	29.9	16.8	36.1
1964	19.6	19.0	20.8	32.3a	45.6	49.4	60.9	52.7	45.9d	35.7	26.3	19.8	35.7
1965	26.6	19.6a	14.9	37.8	42.6	51.1	56.7	52.5	38.3	38.2	30.9	23.3a	36.1
1966	15.8	16.9	28.6	27.9	44.0	49.6	61.0	52.7	48.8	35.8	28.0	23.0	36.0
1967	24.5	23.6	28.2	32.0	38.5	47.9	53.7	49.7	44.4	34.7	19.9	11.7	34.1
1968	15.1	20.0	26.1	28.8	37.4	47.8	53.0	48.2	38.0	32.9	21.0	12.3	31.7
1969	13.3	16.8	18.8	35.0	42.7	46.6	54.8	53.6	45.1	30.1	25.6	19.8	33.5
1970	17.6	21.1	19.5	27.1	40.2	48.7	55.1	53.7	39.5	28.3	26.4	19.5	33.1
1971	18.5	17.1	23.3	30.1	39.8	50.6	52.4	52.1	40.3	32.7	26.4	19.4	33.6
1972	12.6	22.1	28.6	32.6	39.8	50.2	51.1	53.5	42.3	31.9	22.4	11.7	33.2
1973	14.4	18.3	25.6	28.6	37.0	48.3	54.1	53.0	43.8	35.0	25.1	19.2	33.5
1974	10.6	21.8	26.6	32.6	39.4	48.7	54.3	48.3	36.6	33.7	26.3	15.0	32.8
1975	16.3	16.3a	22.5	27.3	39.2	46.0	56.0	51.2	39.9	34.4	23.4	20.8	32.8
1976	17.1	23.3	21.2	33.2	40.2	47.3	56.6	50.7	40.9	27.7a	20.5	19.4	33.2
1977	7.1	19.9	22.6	33.2	43.0	53.9	57.7	51.8	44.4	34.7	24.2	17.4	34.2
1978	7.0	12.0	25.3	34.2	40.0	47.7	55.1	49.9	43.1	32.6	21.1	10.8	31.6
1979	-1.6	18.5	-999i	30.4	38.2	48.4	55.6	52.9	42.6	34.9	16.5	22.0	32.6a
1980	9.0	18.2	21.5	31.5	40.4	47.1	55.9	51.4	42.3	30.9	26.1	24.6	33.2
1981	16.4	18.1	25.2	36.6	41.1	48.8	56.3	50.8	43.0	34.9	29.4	20.6	35.1
1982	10.0	17.8	25.0	27.0	40.4	47.1	53.0	56.3	45.4	33.8	23.6	21.3	33.4
1983	23.2	23.8	27.1	28.0	36.8	49.4	56.0	57.7	43.5	36.5	25.8	5.4	34.4
1984	18.7	24.0	25.2	28.2	40.0	48.2	55.1	55.6	41.2	31.3	25.1	16.4	34.1
1985	10.4	13.8	24.0	32.2	43.0	47.4	54.7	49.6	41.3	32.3	15.1	14.3	31.5
1986	26.5	19.0a	32.0	33.3	37.8	52.8	53.3	53.0	45.4	34.8	25.5	17.8	35.9
1987	18.6	22.8	23.6	32.3	46.6	49.0	55.4	52.3	42.6	31.2	25.5	15.6a	34.6
1988	11.4	17.7	24.5	31.4	41.0	57.5	56.7	53.5	42.5	33.8	27.4	19.0	34.7
1989	23.6	8.7	25.0	33.0a	41.0	48.1	57.1	53.7	44.1	35.7	29.7	12.4	34.3
1990	25.1	18.9	24.0	32.7	38.6	51.0	55.1	52.5	47.9	35.5	29.1	10.8	35.1
1991	14.5	26.0	26.1	32.7	43.9	52.3	54.8	55.3	44.3	32.1	25.1	18.5	35.5
1992	21.7	25.3	27.7	33.7	43.5	50.2	52.8	51.9	44.4	34.5	21.0	13.6	35.0
1993	14.4	8.1	26.8	33.0	42.3	46.9	52.3	52.9	42.4	33.4	21.9	23.7	33.2
1994	21.9	15.4	28.2	31.6	45.2	51.9	53.9	54.3	45.1	35.3	24.9	22.0	35.8

Appendix 2.1.4.B. Temperature data - minimum temperatures - Wheatland 4N station

ID: 489615
Latitude: 42.11 degrees
Longitude: -104.95 degrees
Elevation: 4638 feet
Station period of record: 01/01/1893-06/30/2004
Units: degrees Fahrenheit

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1995	18.5	22.8	25.9	31.1	39.4	48.3	54.0	55.5	45.0	34.5	28.9	20.4	35.3
1996	12.3	19.5	21.8	32.8	41.1	50.8	56.5	53.0	42.6	34.4	23.6	20.3a	34.1
1997	17.4	20.3	28.4	27.4	40.4	52.6	55.9	55.1	49.4	34.3	24.6	20.2	35.5
1998	19.8	24.8	22.9	31.1	42.3	47.3	58.7	54.9	49.2	36.4	33.2	16.7	36.4
1999	21.8	28.6a	25.2a	31.0	40.5a	49.3c	56.8e	57.0	41.3	33.8	31.5	22.6	36.6
2000	21.0	25.7	27.0	32.2	42.3	47.7	56.4	57.3a	44.1	36.2	14.9	12.8	34.8
2001	18.1	17.7	25.4	34.6a	41.7	52.4	57.6	53.5	44.1	35.1	27.8a	18.9a	35.6
2002	17.1	18.2	14.9	33.4	39.2	50.1	58.2	52.5	44.6	28.2	27.3	23.6	33.9
2003	23.6	16.2	27.0	36.0	41.3	48.4	58.6	57.4	43.9	34.5	25.9	21.0	36.2
2004	19.0	19.7	29.0	34.3	44.4	49.0	-999z	-999z	-999z	-999z	-999z	-999z	-999f

Flags
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

APPENDIX 2.1.4.C

TEMPERATURE DATA (FORMATTED)

Appendix 2.1.4.C. Temperature data summary - Encampment 10 ESE station

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	38.5	51.4	25.5	25.9	50.5	64.8	36.2	28.6	51.7	67.1	36.3	30.8	64.7	82.5	46.9	35.6	61.7	77.4	46.1	31.3	53.6	72.4	34.8	37.6
1952	41.0	54.3	27.7	26.6	50.0	64.5	35.5	29.0	60.7	77.7	43.7	34.0	63.6	81.0	46.2	34.8	63.4	79.3	47.5	31.8	57.1	75.6	38.5	37.1
1953	36.5	50.0	23.1	26.9	45.3	58.7	31.9	26.8	59.3	76.7	42.0	34.7	66.7	83.7	49.6	34.1	62.9	79.2	46.6	32.6	56.8	75.9	37.8	38.1
1954	43.8	58.7	28.9	29.8	51.8	67.7	35.8	31.9	57.3	74.6	40.1	34.5	68.2	85.4	51.1	34.3	63.5	81.4	45.6	35.8	57.5	74.1	40.9	33.2
1955	39.5	53.2	25.9	27.3	50.0	65.2	34.8	30.4	55.5	70.9	40.2	30.7	66.7	85.4	48.0	37.4	65.4	80.5	50.2	30.3	56.8	74.7	38.8	35.9
1956	39.6	53.2	25.9	27.3	52.5	67.3	37.7	29.6	60.5	77.8	43.1	34.7	62.6	79.8	45.5	34.3	60.6	77.4	43.8	33.6	57.2	77.8	36.6	41.2
1957	38.1	50.2	26.1	24.1	48.1	60.5	35.6	24.9	56.5	70.8	42.3	28.5	64.6	80.4	48.8	31.6	64.3	80.7	47.8	32.9	54.3	72.6	36.1	36.5
1958	37.6	50.9	24.3	26.6	54.4	70.1	38.7	31.4	58.8	76.9	40.7	36.2	61.6	79.0	44.2	34.8	65.1	82.2	48.0	34.2	55.7	73.0	38.4	34.6
1959	40.4	54.5	26.2	28.3	49.1	64.6	33.5	31.1	62.1	78.7	45.4	33.3	63.8	81.8	45.9	35.9	63.1	78.9	47.3	31.6	53.1	68.3	37.8	30.5
1960	41.4	56.6	26.1	30.5	47.8	63.6	32.0	31.6	57.0	75.5	38.4	37.1	63.2	82.9	43.5	39.4	62.5	80.3	44.7	35.6	58.0	75.0	41.0	34.0
1961	36.8	49.9	23.7	26.2	50.1	64.9	35.4	29.5	59.7	76.5	42.9	33.6	63.4	79.8	46.9	32.9	63.6	78.9	48.4	30.5	48.4	62.9	34.0	28.9
1962	42.7	57.7	27.8	29.9	50.1	65.1	35.1	30.0	56.0	71.7	40.3	31.4	62.1	78.9	45.3	33.6	61.3	78.8	43.8	35.0	54.1	71.7	36.4	35.3
1963	39.6	53.3	25.9	27.4	51.0	67.6	34.4	33.2	57.2	73.9	40.6	33.3	65.1	82.1	48.1	34.0	63.2	76.4	50.1	26.3	59.3	75.3	43.2	32.1
1964	37.6	49.9	25.3	24.6	49.4	64.4	34.4	30.0	55.0	69.5	40.5	29.0	67.1	84.2	50.0	34.2	61.7	77.5	46.0	31.5	53.3	70.2	36.3	33.9
1965	41.2	52.9	29.4	23.5	47.0	60.3	33.7	26.6	56.3	69.7	42.9	26.8	63.3	78.3	48.3	30.0	61.0	77.7	44.4	33.3	46.8	60.2	33.5	26.7
1966	38.3	53.6	23.0	30.6	51.6	67.7	35.5	32.2	56.9	72.0	41.8	30.2	66.8	83.8	49.9	33.9	60.7	77.8	43.6	34.2	56.4	72.8	39.9	32.9
1967	40.0	53.5	26.5	27.0	46.2	59.4	33.0	26.4	54.3	67.6	41.0	26.6	64.0	80.0	48.1	31.9	63.2	80.5	45.9	34.6	54.9	70.3	39.4	30.9
1968	34.5	46.6	22.3	24.3	46.6	59.6	33.7	25.9	58.6	74.4	42.7	31.7	64.5	80.4	48.6	31.8	60.5	75.5	45.5	30.0	53.0	68.6	37.4	31.2
1969	43.0	55.9	30.0	25.9	53.5	69.0	37.9	31.1	53.0	66.0	40.1	25.9	64.3	81.8	46.7	35.1	65.6	83.7	47.4	36.3	56.9	73.4	40.4	33.0
1970	32.8	44.3	21.2	23.1	50.3	65.3	35.2	30.1	56.8	71.7	41.8	29.9	64.9	81.0	48.9	32.1	65.5	81.4	49.7	31.7	52.9	68.1	37.7	30.4
1971	38.6	52.5	24.6	27.9	46.5	59.7	33.2	26.5	57.5	73.9	41.0	32.9	62.4	79.3	45.5	33.8	64.4	80.9	47.9	33.0	50.1	66.3	33.8	32.5
1972	40.6	53.8	27.4	26.4	48.5	63.5	33.5	30.0	58.6	73.1	44.1	29.0	61.7	79.1	44.2	34.9					53.0	68.6	37.5	31.1
1973	32.8	44.2	21.5	22.7	46.8	60.8	32.7	28.1	55.3	70.5	40.1	30.4	61.1	75.6	46.5	29.1	63.0	79.0	47.1	31.9	52.4	67.9	36.8	31.1
1974	38.5	51.6	25.5	26.1	49.8	66.5	33.1	33.4	58.5	74.5	42.5	32.0	63.4	78.5	48.3	30.2	58.1	76.7	39.5	37.2	50.9	68.3	33.4	34.9
1975	35.0	47.8	22.3	25.5	45.7	59.6	31.8	27.8	53.4	68.4	38.3	30.1	63.0	77.7	48.2	29.5	58.9	75.3	42.4	32.9	50.5	68.4	32.5	35.9
1976	39.2	54.2	24.1	30.1	48.3	63.9	32.6	31.3	54.9	71.0	38.9	32.1	64.5	80.2	48.9	31.3	59.0	75.5	42.6	32.9	52.1	68.2	36.4	31.8
1977	41.6	56.2	27.1	29.1	48.2	64.5	31.8	32.7	59.9	78.8	41.1	37.7	63.0	80.7	45.6	35.1	59.3	75.5	42.8	32.7	53.3	73.3	33.2	40.1
1978	39.4	56.3	22.3	34.0		59.9			53.9	73.7	34.1	39.6		80.1			60.2	78.2	42.2	36.0	54.9	73.7	35.7	38.0
1979	38.4	52.7	24.1	28.6	46.3	60.0	32.6	27.4	55.0	72.0	38.0	34.0	61.7	78.3	45.1	33.2	59.5	73.9	45.0	28.9	54.6	72.8	36.5	36.3
1980	36.4	50.0	22.9	27.1	47.8	61.4	34.2	27.2	56.5	75.1	37.9	37.2	62.8	79.0	46.6	32.4	60.1	76.6	43.7	32.9	53.4	70.6	36.2	34.4
1981	44.8	59.9	29.6	30.3	45.7	57.5	34.0	23.5	57.7	73.8	41.6	32.2	62.6	78.1	47.1	31.0	61.4	77.5	45.2	32.3	56.4	72.1	40.8	31.3
1982		50.1	21.2	28.9	46.0	59.5	32.5	27.0	53.6	68.6	38.5	30.1	60.6	75.8	45.3	30.5	63.2	77.2	49.3	27.9	52.2	65.5	38.9	26.6
1983	31.9	44.2	19.5	24.7	43.1	56.1	30.2	25.9	53.0	67.2	38.9	28.3	60.5	76.0	45.1	30.9	63.6	78.1	49.1	29.0	54.4	70.7	38.0	32.7
1984	30.6	43.0	18.3	24.7	48.3	64.5	32.0	32.5	53.7	69.0	38.3	30.7	61.7	76.4	46.9	29.5	61.4	75.5	47.3	28.2	51.4	66.1	36.6	29.5
1985	40.4	55.8	24.9	30.9	48.8	64.5	33.1	31.4	55.3	71.6	38.9	32.7	61.9	76.2	47.5	28.7	58.3	77.2	39.5	37.7	47.2	62.8	31.6	31.2
1986	39.7	53.6	25.8	27.8	46.3	62.2	30.4	31.8	56.8	74.4	39.1	35.3	58.3	73.9	42.9	31.0	59.9	76.1	43.8	32.3	49.1	63.6	34.7	28.9
1987	42.6	58.6	26.5	32.1	49.3	62.9	35.7	27.2	56.1	72.6	40.0	32.6	62.0	77.3	46.7	30.6	57.3	73.5	41.1	32.4	50.1	69.1	31.2	37.9
1988	41.0	57.2	24.9	32.3	47.9	63.8	31.9	31.9	59.5	76.4	42.5	33.9	62.1	78.8	45.4	33.4	62.7	78.8	46.7	32.1	51.8	67.1	36.5	30.6
1989	42.0	55.4	28.6	26.8	49.0	64.9	33.1	31.8	55.1	71.0	39.2	31.8	64.8	81.7	47.8	33.9	59.3	75.1	43.5	31.6	52.4	69.0	35.7	33.3
1990	39.4	53.9	24.9	29.0	43.9	61.5	26.2	35.3	59.1	76.0	42.2	33.8	62.6	77.1	48.1	29.0	62.0	77.8	46.2	31.6	57.8	73.0	42.5	30.5
1991	35.6	49.6	21.5	28.1	47.4	63.2	31.5	31.7	56.7	72.6	40.8	31.8	62.4	78.5	46.2	32.3	62.9	78.6	47.2	31.4	53.6	69.4	37.7	31.7
1992	42.8	57.5	28.0	29.5	49.6	64.6	34.6	30.0	55.0	70.3	39.6	30.7	58.4	74.0	42.7	31.3	59.9	76.5	43.3	33.2	53.7	69.7	37.8	31.9
1993	35.0	46.4	23.6	22.8	48.2	62.0	34.4	27.6	54.2	68.9	39.6	29.3	59.5	76.1	43.0	33.1	60.0	75.4	44.6	30.8	51.8	67.5	36.0	31.5
1994	40.2	54.1	26.3	27.8	51.5	69.1	33.9	35.2	58.3	77.6	39.0	38.6	61.0	81.2	40.7	40.5	61.9	80.6	43.1	37.5	55.1	72.9	37.3	35.6
1995	37.1	51.6	22.7	28.9	43.2	55.7	30.6	25.1	53.7	69.5	37.8	31.7	59.9	78.3	41.5	36.8	63.4	83.0	43.8	39.2	52.7	70.1	35.4	34.7
1996	40.0	54.6	25.4	29.2	48.8	64.8	32.8	32.0	57.2	75.0	39.3	35.7	62.6	81.6	43.5	38.1	60.9	80.7	41.1	39.6	50.8	69.1	32.4	36.7
1997	34.2	49.5	18.9	30.6	47.5	63.9	31.1	32.8	56.6	74.5	38.8	35.7	60.7	81.4	40.1	41.3	59.7	77.5	41.9	35.6	53.4	71.6	35.1	36.5
1998	35.7	54.3	17.2	37.1	46.7	67.0	26.3	40.7	47.5	67.3	27.8	39.5	61.6	82.4	40.8	41.6	57.4	78.4	36.4	42.0	53.4	76.4	30.5	45.9
1999																								
2000																								
2001																								
Maximum:	44.8	59.9	29.6	37.1	51.5	69.1	35.7	40.7	59.9	78.8	44.1	39.6	64.8	82.4	48.9	41.6	63.6	83.0	49.3	42.0	57.8	76.4	42.5	45.9
Minimum:	30.6	43.0	17.2	22.7	43.1	55.7	26.2	23.5	47.5	67.2	27.8	28.3	58.3	73.9	40.1	28.7	57.3	73.5	36.4	27.9	47.2	62.8	30.5	26.6
Average:	**38.3**	**52.4**	**23.9**	**28.6**	**47.4**	**62.5**	**32.2**	**30.4**	**55.7**	**72.3**	**39.1**	**33.2**	**61.7**	**78.3**	**45.2**	**33.0**	**60.5**	**77.2**	**43.8**	**33.5**	**52.7**	**69.5**	**35.8**	**33.7**
Median:	39.3	53.8	24.1	28.9	47.9	63.2	32.6	31.4	55.3	72.6	39.1	32.2	61.8	78.3	45.5	31.8	60.1	77.2	43.6	32.6	52.7	69.1	36.2	32.7

Note: Maximum, minimum, average, and median values apply to the period 1972 through 2001.

Appendix 2.1.4.C. Temperature data summary - Saratoga 1 SSE station

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	38.9	51.7	26.1	25.6		64.8			53.6	68.8	38.7	30.1	65.8	84.3	47.4	36.9	62.9	78.6	47.1	31.5				
1952	41.2	54.6	27.6	27.0	50.1	64.7	35.5	29.2	61.0	78.2	43.7	34.5	64.6	82.7	46.4	36.3	63.2	81.0	45.5	35.5	56.6	76.2	37.0	39.2
1953	36.6	50.4	22.9	27.5	44.4	58.4	30.4	28.0		77.1			65.6	87.1	44.4	42.7	63.7	80.7	46.7	34.0	57.1	77.5	36.7	40.8
1954	41.7	57.6	26.4	31.2	51.8	69.2	34.5	34.7	59.0	75.7	41.7	34.0	69.9	88.5	51.4	37.1			45.4			72.7	39.4	
1955	38.0	51.8	24.3	27.5	50.3	66.5	34.2	32.3									66.8	83.5	50.2	33.3	57.2	76.6	37.8	38.8
1956	40.1	54.7	25.5	29.2	52.8	68.3	37.2	31.1	62.6	81.6	43.6	38.0					60.5	77.6	43.5	34.1	56.1	76.5	35.7	40.8
1957	37.5	50.5	24.5	26.0	47.8	60.8	34.8	26.0	57.3	72.4	41.6	30.8	65.8	82.1	49.4	32.7	65.4	81.8	48.9	32.9	52.2	68.9	35.6	33.3
1958	37.2	50.4	24.1	26.3	54.9	71.1	38.0	33.1	60.7	79.0	42.4	36.6	63.3	81.2	45.5	35.7	65.6	83.0	48.3	34.7	56.3	73.4	39.2	34.2
1959	41.1	55.1	27.1	28.0	49.7	64.5	34.8	29.7	63.1	79.6	46.5	33.1	66.1	84.2	48.0	36.2	64.5	81.6	47.5	34.1	53.3	68.0	38.5	29.5
1960	42.2	58.8	25.6	33.2	50.8	66.2	35.4	30.8	60.6	77.8	43.4	34.4	67.1	85.1	49.2	35.9	63.6	81.5	45.7	35.8	57.7	74.3	41.2	33.1
1961	38.6	53.0	24.2	28.8	52.1	67.2	37.0	30.2	62.3	79.0	45.5	33.5	65.8	82.4	49.3	33.1	65.6	81.9	49.2	32.7	50.0	63.6	36.3	27.3
1962	44.1	58.5	29.6	28.9	52.0	66.4	37.7	28.7	59.4	74.6	44.1	30.5	64.5	81.8	47.3	34.5	62.3	81.2	43.5	37.7	54.9	73.1	36.7	36.4
1963	40.2	53.2	27.2	26.0	53.3	69.8	36.8	33.0	60.6	76.4	44.7	31.7	67.7	85.4	50.1	35.3	65.1	79.9	50.4	29.5	59.1	75.5	42.7	32.8
1964	38.5	50.2	26.9	23.3	50.8	66.2	35.5	30.7	57.3	72.2	42.3	29.9	68.7	86.5	50.9	35.6	62.4	79.2	45.6	33.6	53.4	71.1	35.6	35.5
1965	42.0	54.1	29.9	24.2	48.6	61.7	35.5	26.2	58.0	73.0	43.0	30.0	65.3	80.5	50.1	30.4	61.2	77.3	45.1	32.2	47.7	60.6	34.8	25.8
1966	38.6	55.9	21.2	34.7	51.6	71.3	32.0	39.3			41.3				49.5		62.2	80.6	43.9	36.7	56.1	73.1	39.1	34.0
1967	40.1	53.4	26.8	26.6	46.9	60.4	33.5	26.9	55.1	69.5	40.7	28.8												
1968													66.2	84.5	48.0	36.5	61.2	77.4	44.9	32.5	53.0	71.4	34.5	36.9
1969	44.0	58.1	29.9	28.2	54.3	71.6	37.0	34.6	54.6	69.6	39.6	30.0	66.7	85.7	47.6	38.1	66.7	85.5	47.9	37.6	58.4	76.2	40.6	35.6
1970	35.2	46.7	23.7	23.0	51.4	67.3	35.4	31.9	58.6	75.0	42.2	32.8	66.4	84.0	48.7	35.3	66.2	84.3	48.1	36.2	52.3	69.2	35.3	33.9
1971	40.8	55.4	26.2	29.2	48.7	63.8	33.7	30.1	60.9	79.0	42.8	36.2	65.6	84.3	47.0	37.3	66.5	85.9	47.0	38.9	52.1	69.0	35.2	33.8
1972	42.8	57.6	28.0	29.6	50.7	67.2	34.3	32.9	62.0	77.3	46.6	30.7	65.3	83.4	47.1	36.3	63.8	81.7	45.9	35.8	55.2	71.3	39.1	32.2
1973	34.5	45.4	23.6	21.8	48.7	64.0	33.4	30.6	59.5	76.0	42.9	33.1	64.8	81.0	48.5	32.5	65.7	82.7	48.6	34.1	53.9	69.9	37.9	32.0
1974	40.3	53.0	27.7	25.3	52.3	69.9	34.7	35.2	61.8	79.7	43.9	35.8	67.0	83.7	50.2	33.5	61.2	80.6	41.8	38.8	52.7	72.3	33.0	39.3
1975	36.5	49.7	23.2	26.5	47.8	62.3	33.3	29.0	56.3	72.6	40.0	32.6	67.1	83.8	50.4	33.4	62.5	81.0	44.1	36.9	53.0	72.0	33.9	38.1
1976	42.3	56.5	28.1	28.4	51.6	67.8	35.4	32.4	58.2	74.3	42.2	32.1	68.7	85.7	51.7	34.0	63.4	80.6	46.1	34.5	56.2	73.8	38.6	35.2
1977	44.4	58.8	29.9	28.9	51.3	68.1	34.5	33.6	64.9	84.1	45.7	38.4	66.8	83.8	49.9	33.9	63.7	80.4	47.1	33.3	57.0	76.0	38.0	38.0
1978	43.6	57.2	30.0	27.2	49.2	61.7	36.6	25.1	61.0	76.7	45.2	31.5	67.4	85.0	49.7	35.3	61.8	78.8	44.8	34.0	55.3	72.3	38.2	34.1
1979	42.0	55.3	28.7	26.6	49.2	63.4	35.0	28.4	60.2	77.5	42.9	34.6	67.1	84.5	49.7	34.8	63.2	78.4	48.1	30.3	58.3	77.6	39.1	38.5
1980	40.4	53.7	27.1	26.6	50.2	63.6	36.7	26.9	61.4	79.2	43.6	35.6	67.7	84.1	51.3	32.8	64.6	80.2	49.0	31.2	56.4	72.8	40.0	32.8
1981	46.7	61.4	32.0	29.4	49.0	61.1	36.9	24.2	62.3	78.4	46.2	32.2	66.6	82.6	50.5	32.1	64.5	81.4	47.5	33.9	60.0	76.2	43.8	32.4
1982	38.5	54.0	23.1	30.9	49.0	63.2	34.8	28.4	56.8	73.0	40.5	32.5	65.3	81.8	48.8	33.0	67.2	82.6	51.7	30.9	55.3	69.7	40.8	28.9
1983	34.7	46.9	22.6	24.3	46.0	60.2	31.8	28.4	57.5	71.9	43.1	28.8	66.6	82.0	51.3	30.7	67.7	83.7	51.6	32.1	57.2	74.6	39.9	34.7
1984	34.7	47.1	22.3	24.8	52.0	67.7	36.3	31.4	57.8	73.2	42.5	30.7	66.6	82.6	50.6	32.0	65.9	81.5	50.3	31.2	54.6	70.6	38.7	31.9
1985	43.2	58.8	27.6	31.2	51.5	68.2	34.8	33.4	60.1	77.2	42.9	34.3	67.0	82.8	51.3	31.5	63.8	82.4	45.3	37.1	51.9	67.3	36.4	30.9
1986	41.6	54.4	28.8	25.6	49.4	65.9	32.9	33.0	63.8	80.5	47.0	33.5	64.2	79.4	49.1	30.3	64.5	81.5	47.5	34.0	53.3	67.1	39.4	27.7
1987	44.8	60.9	28.8	32.1	52.8	65.7	39.8	25.9	59.4	75.5	43.3	32.2	65.1	80.1	50.1	30.0	61.4	76.8	46.0	30.8	54.5	72.0	37.1	34.9
1988	44.3	59.6	29.1	30.5	51.3	65.6	37.1	28.5	65.4	80.4	50.3	30.1	67.7	84.3	51.2	33.1	64.4	81.6	47.1	34.5	53.9	69.7	38.1	31.6
1989	44.9	59.2	30.6	28.6	52.0	68.5	35.6	32.9	59.0	74.7	43.3	31.4	67.2	83.3	51.1	32.2	63.1	78.4	47.9	30.5	55.5	72.2	38.7	33.5
1990	43.7	57.6	29.8	27.8	48.7	64.3	33.1	31.2	61.6	78.2	44.9	33.3	64.9	79.5	50.3	29.2	63.9	79.5	48.4	31.1	59.8	75.4	44.3	31.1
1991	39.6	52.8	26.5	26.3	51.9	66.3	37.5	28.8	61.3	75.8	46.7	29.1	64.7	79.8	49.6	30.2	64.8	80.2	49.5	30.7	55.1	70.5	39.7	30.8
1992	47.2	61.3	33.0	28.3	54.0	67.7	40.2	27.5	58.6	72.8	44.4	28.4	62.2	76.3	48.1	28.2	63.5	78.9	48.1	30.8	56.4	72.5	40.2	32.3
1993	39.3	50.6	27.9	22.7	51.3	64.6	38.1	26.5	57.3	71.2	43.5	27.7	61.5	78.4	44.5	33.9	61.5	76.8	46.1	30.7	53.3	69.2	37.3	31.9
1994	43.0	56.6	29.3	27.3	54.5	70.4	38.6	31.8	62.5	79.8	45.1	34.7	65.4	82.3	48.4	33.9	65.6	82.3	48.9	33.4	56.3	73.0	39.6	33.4
1995	39.5	51.6	27.3	24.3	45.5	56.6	34.5	22.1	57.1	71.2	42.9	28.3	63.8	78.7	48.8	29.9	67.1	82.8	51.5	31.3	55.6	70.2	40.9	29.3
1996	41.8	54.8	28.7	26.1	51.2	65.1	37.2	27.9	61.3	77.6	45.0	32.6	66.8	83.8	49.9	33.9	64.2	82.6	45.9	36.7	53.7	69.1	38.2	30.9
1997	36.8	49.6	24.0	25.6	51.1	65.7	36.5	29.2	61.3	75.8	46.8	29.0	65.8	81.7	49.9	31.8	64.2	78.6	49.8	28.8	58.0	71.7	44.2	27.5
1998	40.4	54.2	26.6	27.6	51.8	67.1	36.5	30.6	54.8	69.7	39.9	29.8	68.1	83.0	53.2	29.8	65.1	80.7	49.5	31.2	60.0	75.7	44.3	31.4
1999	39.6	52.0	27.2	24.8	49.1	63.7	34.5	29.2	59.8	74.8	44.7	30.1	68.4	83.8	52.8	31.0	64.8	80.2	49.5	30.7	53.1	69.1	37.2	31.9
2000	45.1	61.4	29.0	32.4	55.2	71.4	39.1	32.3	60.6	79.3	41.9	37.4	68.1	86.3	49.7	36.6	68.6	85.0	52.3	32.7	55.3	71.7	38.5	33.2
2001	44.0	56.9	30.8	26.1	52.4	68.6	36.3	32.3	52.4	81.2	43.5	37.7	69.8	86.4	53.1	33.3	65.4	81.4	49.4	32.0	57.5	76.0	39.5	36.5
Maximum:	47.2	61.4	33.0	32.4	55.2	71.4	40.2	35.2	65.4	84.1	50.3	38.4	69.8	86.4	53.2	36.6	68.6	85.0	52.3	38.8	60.0	77.6	44.3	39.3
Minimum:	34.5	45.4	22.3	21.8	45.5	56.6	31.8	22.1	52.4	69.7	39.9	27.7	61.5	76.3	44.5	28.2	61.2	76.8	41.8	28.8	51.9	67.1	33.0	27.5
Average:	**41.3**	**55.0**	**27.7**	**27.3**	**50.7**	**65.5**	**35.9**	**29.7**	**59.9**	**76.3**	**44.0**	**32.3**	**66.3**	**82.5**	**50.0**	**32.4**	**64.4**	**80.8**	**48.0**	**32.8**	**55.6**	**72.1**	**39.2**	**32.9**
Median:	41.9	55.1	28.1	26.9	51.3	65.7	36.0	29.2	60.2	76.4	43.6	32.2	66.7	82.9	50.0	32.7	64.3	80.9	48.1	32.1	55.3	72.0	38.9	32.3

Note: Maximum, minimum, average, and median values apply to the period 1972 through 2001.

Appendix 2.1.4.C. Temperature data summary - Medicine Bow station

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	37.8	51.3	24.2	27.1	50.2	64.6	35.7	28.9	52.4	67.8	37.0	30.8	64.6	82.4	46.8	35.6	61.7	78.5	44.9	33.6	53.1	70.5	35.6	34.9
1952	41.7	56.5	26.9	29.6	49.9	64.6	35.2	29.4	61.8	79.4	44.1	35.3	64.6	82.9	46.3	36.6	63.6	80.5	46.6	33.9	55.1	75.7	34.6	41.1
1953	36.5	50.1	22.9	27.2	47.1	59.0	33.5	25.5	61.0	78.5	43.6	34.9	67.4	85.1	49.5	35.6	63.7	80.6	46.8	33.8	55.5	75.2	35.8	39.4
1954	44.4	60.4	28.3	32.1	49.6	66.7	32.5	34.2	58.9	77.0	40.7	36.3	68.8	87.4	50.2	37.2	62.2	82.2	42.2	40.0	55.5	73.5	37.6	35.9
1955	38.8	55.8	21.9	33.9	50.8	68.5	33.1	35.4	56.2	71.9	40.4	31.5	66.3	86.3	46.3	40.0	65.1	82.2	48.0	34.2	54.9	72.8	36.9	35.9
1956	39.2	54.6	23.8	30.8	53.2	69.0	37.3	31.7	62.8	82.5	43.1	39.4	63.3	80.4	46.2	34.2	60.4	77.9	42.9	35.0	54.4	75.6	33.1	42.5
1957	37.3	50.2	24.4	25.8	47.9	60.0	35.8	24.2	57.3	72.9	41.8	31.1	64.4	81.2	47.7	33.5	63.6	80.0	47.2	32.8	50.8	68.7	32.9	35.8
1958	37.4	50.5	24.3	26.2	54.0	70.7	37.2	33.5	59.9	77.0	42.7	34.3	61.9	78.6	45.2	33.4	63.6	80.8	46.3	34.5	54.8	71.8	37.8	34.0
1959	40.0	54.0	26.0	28.0	48.2	61.4	35.1	26.3	61.2	79.3	43.1	36.2	64.2	82.6	45.9	36.7	63.3	80.4	46.1	34.3	50.9	65.5	36.2	29.3
1960	42.8	58.3	27.3	31.0	49.9	65.9	33.8	32.1	59.4	76.0	42.8	33.2	64.1	83.7	44.5	39.2	61.3	80.6	42.0	38.6	54.2	72.6	35.8	36.8
1961	37.1	51.1	24.4	26.7	50.7	65.3	36.1	29.2	59.4	78.5	40.4	38.1	63.6	81.5	45.7	35.8	64.0	81.0	46.9	34.1	49.2	64.1	34.4	29.7
1962	43.9	59.1	28.7	30.4	50.5	65.5	35.5	30.0	57.9	73.9	41.8	32.1	62.7	80.8	44.5	36.3	61.0	80.8	41.1	39.7	53.8	72.7	34.9	37.8
1963	39.0	51.8	26.2	25.6	51.4	68.1	34.6	33.5	58.8	75.8	41.8	34.0	66.0	84.5	47.5	37.0	63.2	80.6	45.8	34.8	57.9	75.3	40.4	34.9
1964	37.2	49.0	25.4	23.6	49.8	65.5	34.0	31.5	56.3	72.4	40.3	32.1			47.4		60.7	77.9	43.4	34.5	52.8	72.7	32.9	39.8
1965	41.5	54.8	28.1	26.7	46.7	60.6	32.7	27.9	56.5	71.2	41.8	29.4	63.9	80.1	47.7	32.4	60.3	77.6	43.1	34.5	46.8	60.8	33.3	27.5
1966	37.7	53.5	21.9	31.6	51.5	69.1	34.0	35.1	57.7	74.3	41.0	33.3	67.7	85.4	50.0	35.4	61.1	79.2	43.0	36.2	54.8	71.2	38.3	32.9
1967	39.9	54.7	25.0	29.7	45.8	58.6	33.0	25.6	55.2	69.1	41.2	27.9									54.1	70.5	37.7	32.8
1968	33.2	46.3	20.5	25.8	45.6	61.2	30.1	31.1	58.2	74.8	41.7	33.1	64.3	81.6	46.9	34.7	60.3	76.9	43.8	33.1	50.8	68.8	32.8	36.0
1969	45.2	62.1	28.3	33.8	53.2	71.0	35.4	35.6	55.1	69.6	40.5	29.1	67.0	86.2	47.8	38.4	65.7	85.5	45.9	39.6	58.6	76.8	40.3	36.5
1970	35.1	47.7	22.5	25.2	50.5	67.4	33.7	33.7	57.7	74.7	40.8	33.9	65.9	84.3	47.5	36.8	66.0	85.5	46.5	39.0	51.6	70.8	32.4	38.4
1971	40.2	55.2	25.2	30.0	47.8	62.7	32.8	29.9	60.8	78.2	43.4	34.8	64.4	82.1	46.7	35.4	64.8	84.1	45.5	38.6	51.2	67.9	34.4	33.5
1972	41.1	56.1	26.2	29.9	49.5	66.0	33.1	32.9	60.7	76.5	44.9	31.6	63.2	80.8	45.7	35.1	63.1	79.9	46.4	33.5	53.4	70.3	36.4	33.9
1973	33.4	44.2	22.7	21.5	47.8	63.4	32.1	31.3	59.2	75.6	42.8	32.8	63.2	78.8	47.6	31.2	64.3	80.9	47.8	33.1	52.6	68.9	36.2	32.7
1974									61.0	79.6	42.3	37.3	65.3	84.0	46.6	37.4	60.0	80.1	40.0	40.1	51.3	71.6	30.9	40.7
1975	36.6	50.1	23.1	27.0	46.9	62.5	31.2	31.3	55.5	73.2	37.9	35.3	65.3	83.8	46.8	37.0	61.3	82.6	40.1	42.5	51.4	73.4	29.3	44.1
1976	40.9	46.8	25.2	21.6	49.6	68.1	31.2	36.9	56.3	74.8	37.8	37.0	65.9	85.6	46.3	39.3					52.6	74.6	32.0	42.6
1977	43.2	60.1	25.7	34.4	50.8	68.7	32.8	35.9	63.7	83.2	44.2	39.0	65.2	84.0	46.4	37.6	63.0	80.7	45.4	35.3	54.5	73.2	35.8	37.4
1978	41.3	56.3	26.3	30.0	48.5	63.9	33.2	30.7	59.7	76.9	42.4	34.5					61.8	80.6	42.9	37.7	54.5	73.2	35.7	37.5
1979					48.3	64.6	31.9	32.7	59.6	78.1	41.1	37.0	66.2	86.2	46.2	40.0	61.8	79.0	44.5	34.5	57.0	79.3	34.7	44.6
1980					49.8	65.3	34.3	31.0	61.9	81.7	42.0	39.7	66.7	85.7	47.7	38.0	62.9	82.0	43.8	38.2	55.7	74.5	36.9	37.6
1981	48.4	63.5	33.2	30.3	47.7	59.9	35.6	24.3	63.4	79.6	47.1	32.5	66.8	84.4	49.1	35.3	64.4	81.7	47.1	34.6				
1982																								
1983																								
1984																								
1985																								
1986																	64.2	82.2	46.3	35.9	51.6	67.0	36.2	30.8
1987	44.3	61.5	27.1	34.4	52.7	66.7	38.7	28.0	60.0	77.6	42.4	35.2	64.6	81.6	47.5	34.1	61.2	77.9	44.6	33.3	54.0	73.3	34.7	38.6
1988	43.3	60.2	26.3	33.9	51.8	67.5	36.0	31.5	65.9	83.5	48.3	35.2	67.5	86.7	48.3	38.4	64.2	83.8	44.6	39.2	53.7	71.8	35.6	36.2
1989	43.3	59.1	27.4	31.7	50.9	67.8	34.1	33.7	58.4	75.5	41.3	34.2	67.5	86.2	48.9	37.3	62.1	80.4	43.9	36.5	54.8	72.6	37.1	35.5
1990	42.4	57.2	27.5	29.7	48.1	64.5	31.6	32.9	61.8	80.1	43.5	36.6	65.0	81.1	48.8	32.3	63.2	81.6	44.7	36.9	58.9	76.1	41.6	34.5
1991	39.0	53.1	24.9	28.2	51.0	64.8	37.3	27.5	60.9	76.8	45.0	31.8	64.8	81.9	47.8	34.1	64.7	82.2	47.2	35.0	54.7	71.9	37.6	34.3
1992	46.4	62.2	30.5	31.7	53.4	69.8	37.1	32.7	59.4	74.8	43.9	30.9	63.0	78.9	47.1	31.8	63.2	80.1	46.2	33.9	55.6	73.5	37.7	35.8
1993	39.8	51.7	27.9	23.8	51.3	65.5	37.0	28.5	56.4	71.0	41.9	29.1	61.8	80.2	43.3	36.9	61.5	78.9	44.2	34.7				
1994	41.8	56.8	26.7	30.1	54.6	71.5	37.6	33.9	63.1	81.7	44.4	37.3	65.6	83.9	47.3	36.6	66.0	84.0	48.1	35.9	55.3	74.5	36.1	38.4
1995	39.7	53.0	26.5	26.5	45.5	56.4	34.6	21.8	56.4	71.5	41.2	30.3	64.2	80.9	47.5	33.4	66.0	84.7	47.2	37.5	54.7	71.0	38.4	32.6
1996	41.4	55.9	27.0	28.9	50.2	64.9	35.6	29.3	61.2	79.8	42.6	37.2	66.8	85.2	48.4	36.8	64.1	84.0	44.3	39.7	52.7	69.8	35.5	34.3
1997	35.9	48.6	23.2	25.4	51.1	66.8	35.4	31.4	61.2	77.3	45.1	32.2	64.8	82.6	47.0	35.6	64.1	79.8	48.4	31.4	57.6	73.1	42.1	31.0
1998	39.6	53.9	25.4	28.5	52.0	67.9	36.0	31.9	54.5	68.5	40.4	28.1	68.5	84.5	52.5	32.0	64.9	82.4	47.5	34.9	60.1	78.6	41.7	36.9
1999	37.7	49.0	26.3	22.7	47.2	62.5	32.6	29.9	59.5	75.9	42.8	33.1		85.4			64.8	82.1	47.5	34.6	51.7	69.5	33.8	35.7
2000	44.9	61.0	29.0	32.0	54.0	69.8	38.2	31.6	60.2	78.0	42.4	35.6	67.6	86.4	48.7	37.7	67.3	85.4	49.3	36.1	54.3	70.6	36.9	33.7
2001	42.6	55.7	29.5	26.2	52.1	66.9	37.4	29.5	60.7	79.8	41.9	37.9	69.9	87.4	52.5	34.9	67.8	85.2	50.7	34.5	57.1	76.4	37.8	38.6
Maximum:	48.4	63.5	33.2	34.4	54.6	71.5	38.7	36.9	65.9	83.5	48.3	39.7	69.9	87.4	52.5	40.0	67.8	85.4	50.7	42.5	60.1	79.3	42.1	44.6
Minimum:	33.4	44.2	22.7	21.5	45.5	56.4	31.2	21.8	54.5	68.5	37.8	28.1	61.8	78.8	43.3	31.2	60.0	77.9	40.0	31.4	51.3	67.0	29.3	30.8
Average:	**41.2**	**55.3**	**26.7**	**28.6**	**50.2**	**65.7**	**34.8**	**30.9**	**60.0**	**77.2**	**42.8**	**34.5**	**65.6**	**83.6**	**47.7**	**35.8**	**63.7**	**81.7**	**45.7**	**36.0**	**54.6**	**72.9**	**36.3**	**36.6**
Median:	41.4	56.0	26.4	29.3	50.5	65.8	35.0	31.4	60.2	77.3	42.4	35.2	65.3	84.0	47.5	36.6	64.1	81.7	46.2	35.3	54.5	73.2	36.2	36.0

Appendix 2.1.4.C. Temperature data summary - Muddy Gap station

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	38.7	51.4	26.1	25.3	50.1	62.5	37.7	24.8	52.8	65.6	39.9	25.7	68.9	83.8	54.0	29.8	64.5	79.5	49.5	30.0	52.5	67.1	37.9	29.2
1952	43.1	54.7	31.5	23.2	52.5	66.5	38.5	28.0	62.8	76.4	49.1	27.3	67.3	82.7	51.9	30.8	69.2	83.0	55.4	27.6	59.1	76.3	41.9	34.4
1953	37.9	50.2	25.6	24.6	46.5	57.9	35.1	22.8	64.5	78.0	50.9	27.1	72.1	87.7	56.5	31.2	68.9	81.5	56.4	25.1	61.7	75.5	47.9	27.6
1954	46.8	60.2	33.3	26.9	52.7	67.9	37.5	30.4	61.2	75.7	46.8	28.9	72.8	86.9	58.7	28.2	67.6	82.9	52.3	30.6	60.6	75.4	45.7	29.7
1955	40.4	51.6	29.1	22.5	52.5	66.7	38.3	28.4	59.0	74.0	44.1	29.9	67.7	84.5	50.8	33.7	70.3	84.5	56.1	28.4	58.8	72.9	44.7	28.2
1956	41.3	56.1	26.4	29.7	54.8	68.5	41.1	27.4					67.3	83.5	51.1	32.4	64.2	78.5	49.9	28.6	60.3	78.5	42.1	36.4
1957	38.3	50.0	26.5	23.5	50.1	60.6	39.6	21.0	59.6	73.3	45.9	27.4	69.0	83.9	54.2	29.7	67.9	81.8	54.0	27.8	55.1	71.8	38.5	33.3
1958	39.7	51.9	27.4	24.5	56.4	71.1	41.7	29.4	61.3	77.1	45.4	31.7	65.4	81.9	48.9	33.0	68.4	84.1	52.6	31.5	59.4	75.4	43.4	32.0
1959	42.5	55.3	29.7	25.6	49.2	63.0	35.4	27.6	64.6	80.6	48.6	32.0	68.3	85.1	51.5	33.6	67.8	83.0	52.5	30.5	55.2	69.3	41.2	28.1
1960	46.2	59.7	32.7	27.0	52.5	67.6	37.4	30.2	63.8	79.1	48.5	30.6	69.7	86.7	52.6	34.1	66.1	83.2	49.0	34.2	59.7	76.7	42.6	34.1
1961	41.2	54.3	28.0	26.3	52.7	66.8	38.6	28.2	64.5	79.3	49.7	29.6	68.0	84.3	51.8	32.5	68.1	83.1	53.2	29.9	51.0	63.8	38.3	25.5
1962	47.0	61.7	32.4	29.3	52.4	66.0	38.8	27.2	60.3	75.3	45.3	30.0	66.2	81.9	50.4	31.5	67.1	82.7	51.5	31.2	57.4	75.8	39.0	36.8
1963	41.5	54.5	28.6	25.9	54.3	68.0	40.6	27.4	61.7	77.0	46.3	30.7	69.2	85.5	52.9	32.6	67.2	80.6	53.8	26.8	61.4	76.5	46.2	30.3
1964	39.9	51.3	28.5	22.8	51.7	65.2	38.3	26.9	57.5	70.6	44.4	26.2	71.8	87.2	56.4	30.8	65.3	80.2	50.4	29.8	56.5	72.9	40.0	32.9
1965	43.5	54.4	32.6	21.8	48.5	60.8	36.1	24.7	59.2	72.0	46.5	25.5	67.2	81.5	52.9	28.6	64.2	78.6	49.8	28.8	47.5	60.1	34.9	25.2
1966	40.5	55.2	25.6	29.6	54.6	70.4	38.8	31.6	60.6	74.9	46.4	28.5	71.8	87.1	56.6	30.5	65.1	80.9	49.3	31.6	59.7	74.7	44.8	29.9
1967	42.5	55.6	29.3	26.3	48.3	61.0	35.6	25.4	58.0	70.8	45.3	25.5	67.7	82.6	52.8	29.8	67.4	82.7	52.0	30.7	59.7	73.3	46.2	27.1
1968	38.3	51.1	25.6	25.5	48.7	62.0	35.5	26.5	61.6	76.0	47.2	28.8	68.3	83.0	53.5	29.5	63.5	77.3	49.7	27.6	55.3	71.9	38.8	33.1
1969	46.8	59.4	34.2	25.2	56.0	72.0	40.0	32.0	56.8	71.1	42.5	28.6	70.1	86.1	54.1	32.0	71.0	86.3	55.7	30.6	61.8	76.8	46.8	30.0
1970	34.8	45.1	24.4	20.7	53.6	68.3	38.9	29.4	60.0	75.3	44.7	30.6	69.0	83.9	54.2	29.7	69.2	85.3	53.0	32.3	53.9	70.1	37.7	32.4
1971	40.5	52.6	28.3	24.3	49.3	63.2	35.3	27.9	62.1	77.4	46.7	30.7	66.1	82.3	49.9	32.4	69.1	84.2	54.0	30.2	53.1	65.6	40.5	25.1
1972	42.0	55.1	28.8	26.3	51.6	66.1	37.1	29.0	62.4	76.9	47.8	29.1	66.1	83.4	48.8	34.6	64.0	80.3	47.7	32.6	53.2	70.3	36.1	34.2
1973	31.9	41.6	22.1	19.5					60.9	76.1	45.7	30.4	65.7	78.9	52.5	26.4	68.6	83.9	53.3	30.6				
1974	42.4	54.7	30.1	24.6	50.7	65.9	35.5	30.4					70.0	85.0	55.0	30.0	62.2	77.7	46.7	31.0	55.0	71.6	38.4	33.2
1975	36.1	47.5	24.7	22.8	46.3	60.6	32.0	28.6	58.0	72.3	43.6	28.7	71.6	86.2	57.0	29.2	65.8	81.7	49.9	31.8	54.1	70.4	37.8	32.6
1976	43.5	55.8	31.1	24.7	53.3	68.7	38.5	30.2	58.8	71.2	46.4	24.8												
1977																								
1978																								
1979			28.8		50.0	63.4	36.6	26.8									63.9	77.7	50.1	27.6	61.5	77.4	45.3	32.1
1980	41.8	53.8	29.7	24.1		60.4			61.9	77.9	45.9	32.0		86.7							58.2	73.9	42.5	31.4
1981	47.0	62.1	31.9	30.2	50.4	62.3	38.5	23.8	63.7	80.2	47.2	33.0	69.5	86.0	53.1	32.9	67.2	83.6	50.7	32.9	61.9	76.3	47.5	28.8
1982	39.4	53.5	25.3	28.2	50.3	63.8	36.7	27.1	58.9	73.9	43.9	30.0	69.0	84.9	53.1	31.8	71.5	87.8	55.2	32.6	55.9	68.8	43.0	25.8
1983	35.2	46.4	24.0	22.4	47.0	60.2	33.8	26.4	59.8	73.5	46.0	27.5	68.9	85.1	52.7	32.4	72.5	88.2	56.8	31.4	60.0	76.8	43.2	33.6
1984	38.3	49.1	27.5	21.6	53.5	69.2	37.8	31.4	60.6	77.0	44.1	32.9	69.8	86.7	52.9	33.8	70.6	85.7	55.5	30.2	54.6	71.2	37.9	33.3
1985	44.8	60.4	29.2	31.2	55.1	71.1	39.2	31.9	62.5	80.1	44.9	35.2	70.3	86.5	54.0	32.5	67.2	85.3	49.1	36.2	53.9	68.4	39.5	28.9
1986					51.4	66.0	36.8	29.2	68.0	84.3	51.6	32.7	66.7	81.7	51.7	30.0	67.5	85.0	49.9	35.1	54.5	68.6	40.4	28.2
1987	48.1	63.9	32.4	31.5	55.4	69.3	41.5	27.8	64.2	80.6	47.8	32.8	68.4	83.9	53.0	30.9	65.5	82.1	49.0	33.1	58.3	75.8	40.8	35.0
1988	46.5	61.6	31.3	30.3	54.6	69.8	39.5	30.3	70.2	86.6	53.7	32.9	72.7	90.3	54.9	35.4					56.1	72.8	39.4	33.4
1989	45.8	61.4	30.1	31.3	53.9	69.4	38.5	30.9	60.7	76.2	45.3	30.9	72.0	88.3	55.6	32.7	65.9	81.0	50.8	30.2	58.0	73.3	42.7	30.6
1990	45.4	59.6	31.1	28.5	49.3	64.4	34.3	28.5	63.8	80.5	47.1	33.4	68.5	83.8	53.1	30.7	67.7	84.1	51.3	32.8	62.0	77.6	46.4	31.2
1991	41.0	52.7	29.4	23.3	51.6	64.1	39.2	24.9	62.2	77.3	47.1	30.2	69.0	84.8	53.1	31.7	68.9	85.1	52.7	32.4	57.4	72.9	41.8	31.1
1992	48.6	64.3	33.0	31.3	56.2	70.8	41.6	29.2	61.7	76.4	47.0	29.4	65.1	80.8	49.4	31.4	66.4	83.2	49.6	33.6	59.9	74.9	44.9	30.0
1993	41.7	53.5	29.8	23.7	54.1	67.6	40.5	27.1	57.8	71.9	43.6	28.3	62.9	78.9	46.9	32.0	64.5	80.5	48.5	32.0	56.5	72.1	41.0	31.1
1994	44.4	58.6	30.2	28.4	57.0	73.5	40.5	33.0	64.6	82.4	46.8	35.6					70.3	87.7	52.9	34.8	59.8	75.8	43.8	32.0
1995	41.1	53.0	29.2	23.8	46.5	58.9	34.1	24.8	58.5	73.3	43.6	29.7					70.5	86.6	54.4	32.2				
1996					51.1	64.5	37.8	26.7	64.2	80.7	47.7	33.0					69.5	87.2	51.7	35.5	57.3	72.3	42.2	30.1
1997	38.3	51.0	25.6	25.4	53.5	68.5	38.6	29.9	63.9	78.5	49.2	29.3	68.5	84.7	52.3	32.4	67.5	82.5	52.6	29.9	61.1	73.5	48.7	24.8
1998	42.2	55.0	29.4	25.6					55.4	68.1	42.6	25.5	71.3	86.7	55.8	30.9	68.7	84.4	52.9	31.5	62.8	77.1	48.3	28.8
1999	38.9	50.0	27.7	22.3	51.4	64.0	38.6	25.4	61.7	75.5	47.9	27.6	72.1	87.8	56.4	31.4	70.1	84.6	55.4	29.2				
2000	46.1	60.2	32.1	28.1	56.8	70.8	42.6	28.2	62.0	78.5	45.6	32.9	72.3	89.8	54.9	34.9	73.3	88.5	57.7	30.8	57.8	71.3	44.4	26.9
2001	44.2	56.2	32.2	24.0	54.8	69.2	40.6	28.6	64.4	80.6	48.2	32.4	74.7	90.1	59.1	31.0	72.0	87.0	56.9	30.1	62.3	76.5	48.1	28.4
Maximum:	48.6	64.3	33.0	31.5	57.0	73.5	42.6	33.0	70.2	86.6	53.7	35.6	74.7	90.3	59.1	35.4	73.3	88.5	57.7	36.2	62.8	77.6	48.7	35.0
Minimum:	31.9	41.6	22.1	19.5	46.3	58.9	32.0	23.8	55.4	68.1	42.6	24.8	62.9	78.9	46.9	26.4	62.2	77.7	46.7	27.6	53.2	68.4	36.1	24.8
Average:	**42.2**	**55.2**	**29.1**	**26.1**	**52.2**	**66.3**	**38.0**	**28.4**	**62.0**	**77.3**	**46.6**	**30.8**	**69.3**	**85.3**	**53.4**	**31.8**	**68.1**	**84.1**	**52.1**	**32.0**	**58.0**	**73.3**	**42.7**	**30.6**
Median:	42.2	55.0	29.6	25.4	51.6	66.1	38.5	28.6	62.0	77.2	46.6	30.7	69.3	85.1	53.1	31.8	67.7	84.4	51.7	32.0	57.9	73.1	42.6	31.1

Note: Maximum, minimum, average, and median values apply to the period 1972 through 2001.

Appendix 2.1.4.C. Temperature data summary - Casper WSO AP station

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	53.7	50.4	25.4	25.0	66.2	65.3	40.6	24.7	70.0	68.9	43.6	25.3	70.2	85.0	54.7	30.3	63.2	83.0	53.0	30.0	49.6	70.2	40.4	29.8
1952	48.6	60.6	33.6	27.0	65.5	66.2	41.2	25.0	73.4	81.4	51.0	30.4	70.8	86.2	53.9	32.3	62.1	85.5	54.9	30.6	50.7	79.7	46.7	33.0
1953	53.	50.1	26.7	23.4	63.1	61.1	36.1	25.0	76.1	81.1	49.9	31.2	71.1	89.1	57.8	31.3	62.5	85.8	55.7	30.1	46.1	78.7	45.6	33.1
1954	54.8	61.1	32.6	28.5	53.7	66.9	39.7	27.2	73.2	78.6	47.5	31.1	73.2	92.8	59.3	33.5	60.6	87.5	54.7	32.8	50.4	78.3	46.7	31.6
1955	55.9	56.5	30.0	26.5	68.3	69.1	40.5	28.6	70.8	73.0	47.8	25.2	66.8	89.9	56.5	33.4	61.0	87.8	58.5	29.3	49.8	75.0	46.1	28.9
1956	51.5	52.9	28.5	24.4	61.5	68.8	43.0	25.8	71.8	85.3	51.3	34.0	71.0	85.6	55.9	29.7	66.8	81.8	51.9	29.9	46.4	78.0	44.0	34.0
1957	59.0	49.7	27.7	22.0	63.6	62.2	40.9	21.3	66.3	75.2	47.8	27.4	71.2	87.5	56.1	31.4	60.0	85.2	56.9	28.3	49.7	70.6	41.7	28.9
1958	50.6	51.7	28.8	22.9	66.8	73.5	44.5	29.0	70.0	78.9	48.4	30.5	70.3	81.2	51.4	29.8	56.2	87.5	55.0	32.5	43.7	75.9	44.2	31.7
1959	53.5	55.9	28.1	27.8	63.7	63.4	37.7	25.7	71.4	83.1	50.4	32.7	67.2	86.8	53.2	33.6	60.7	86.1	54.5	31.6	47.5	69.3	43.1	26.2
1960	54.4	58.8	29.6	29.2	66.1	68.7	38.4	30.3	70.3	79.6	47.8	31.8	72.1	87.4	55.3	32.1	51.4	83.4	51.1	32.3	44.7	74.8	46.6	28.2
1961	54.4	53.4	28.6	24.8	61.5	67.3	41.4	25.9	67.7	80.8	51.3	29.5	67.7	85.0	55.6	29.4	58.4	86.7	57.5	29.2	51.3	64.3	38.5	25.8
1962	55.1	61.3	32.0	29.3	64.9	67.5	41.4	26.1	72.0	75.2	47.8	27.4	70.4	82.1	53.4	28.7	64.1	83.6	51.8	31.8	54.6	74.1	42.7	31.4
1963	54.1	54.8	29.9	24.9	61.1	69.3	41.0	28.3	74.0	79.6	50.1	29.5	66.0	88.2	55.8	32.4	56.1	84.7	56.1	28.6	47.1	79.2	49.0	30.2
1964	49.8	50.8	28.6	22.2	60.1	67.6	40.6	27.0	69.2	74.5	47.6	26.9	66.3	90.0	58.1	31.9	47.6	81.2	50.9	30.3	51.7	72.8	39.4	33.4
1965	55.8	57.4	34.1	23.3	61.8	61.7	38.0	23.7	74.9	73.3	46.8	26.5	66.5	84.6	53.9	30.7	62.2	82.9	49.7	33.2	45.1	61.2	34.1	27.1
1966	49.1	52.3	25.5	26.8	58.5	74.1	37.4	36.7	69.8	78.7	44.9	33.8	68.9	92.6	57.1	35.5	61.0	83.4	49.7	33.7	48.1	78.3	46.0	32.3
1967	48.0	57.6	27.7	29.9	60.5	61.1	37.1	24.0	69.1	71.8	45.2	26.6	64.9	85.5	54.1	31.4	56.5	86.4	51.5	34.9	47.9	76.3	45.6	30.7
1968	55.3	50.7	26.0	24.7	57.0	61.7	34.4	27.3	71.5	75.2	45.7	29.5	71.8	86.1	52.0	34.1	63.2	80.3	49.4	30.9	37.8	73.6	39.3	34.3
1969	53.3	60.5	32.9	27.6	62.6	71.8	38.9	32.9	71.2	70.4	43.6	26.8	72.2	89.7	53.4	36.3	54.7	90.0	53.6	36.4	41.1	81.4	45.1	36.3
1970	50.1	48.8	27.5	21.3	64.3	67.5	39.1	28.4	67.2	78.0	47.2	30.8	71.2	88.4	53.9	34.5	53.9	90.1	54.4	35.7	42.8	70.5	38.9	31.6
1971	52.1	53.8	28.0	25.8	65.0	63.5	36.6	26.9	65.9	81.0	47.6	33.4	68.0	85.2	49.2	36.0	56.7	89.4	53.1	36.3	44.1	69.2	38.5	30.7
1972	51.1	56.4	29.6	26.8	63.0	66.1	38.1	28.0	68.4	81.4	48.6	32.8	70.6	83.4	48.4	35.0	55.0	83.6	52.4	31.2	48.7	73.8	39.6	34.2
1973	51.4	46.5	25.6	20.9	64.9	65.9	36.3	29.6	72.5	79.4	46.6	32.8	64.4	83.9	52.9	31.0	54.3	88.0	53.3	34.7	48.5	67.8	42.2	25.6
1974	48.8	54.5	31.6	22.9	58.8	66.3	36.5	29.8	72.9	81.4	48.4	33.0	68.0	88.2	56.9	31.3	56.7	80.8	48.0	32.8	47.6	70.0	38.7	31.3
1975	53.6	48.7	26.7	22.0	60.7	61.4	36.3	25.1	72.8	73.5	44.1	29.4	68.4	88.5	57.2	31.3	59.2	85.0	51.0	34.0	43.8	74.4	38.9	35.5
1976	55.1	56.7	31.3	25.4	69.3	68.3	38.9	29.4	71.7	76.6	44.8	31.8	66.1	87.5	58.0	29.5	60.3	84.4	52.3	32.1	48.8	74.2	44.2	30.0
1977	49.6	59.8	33.2	26.6	63.6	69.8	40.4	29.4	69.6	85.5	53.2	32.3	66.8	87.6	55.8	31.8	60.1	81.9	50.3	31.6	47.9	78.5	42.1	36.4
1978	49.3	57.8	31.4	26.4	61.8	61.1	38.0	23.1	70.8	79.4	47.8	31.6	67.6	86.2	53.0	33.2	62.1	82.1	51.5	30.6	47.8	76.9	43.4	33.5
1979	51.6	57.9	29.4	28.5	64.4	62.7	35.8	26.9	72.2	78.9	44.6	34.3	66.4	88.8	52.8	36.0	59.6	82.4	52.9	29.5	46.5	81.3	42.9	38.4
1980	51.3	58.7	29.7	29.0	64.3	65.6	37.5	28.1	71.8	83.1	45.7	37.4	69.2	89.9	54.5	35.4	62.0	83.5	49.3	34.2	44.4	77.2	42.1	35.1
1981	51.1	62.7	33.9	28.8	60.3	63.4	39.3	24.1	70.7	80.7	47.9	32.8	73.7	88.5	55.1	33.4	56.9	86.8	51.6	35.2	45.2	79.8	44.2	35.6
1982	48.4	55.4	26.8	28.6	60.4	64.4	37.8	26.6	71.2	74.3	46.3	28.0	74.7	87.9	53.5	34.4	60.3	90.7	56.6	34.1	49.6	70.7	43.1	27.6
1983	54.5	49.3	26.7	22.6	61.5	62.0	34.7	27.3	70.4	74.0	46.8	27.2	71.1	88.5	53.8	34.7	52.5	91.7	57.8	33.9	40.1	78.3	42.3	36.0
1984	55.3	51.8	26.4	25.4	61.3	70.3	38.7	31.6	71.6	78.0	45.0	33.0	66.7	86.9	53.9	33.0	53.4	88.4	53.9	34.5	45.2	69.3	35.7	33.6
1985	50.9	60.6	30.4	30.2	67.4	71.0	39.6	31.4	69.0	78.0	44.5	33.5	69.3	88.2	55.0	33.2	55.4	84.7	48.6	36.1	45.9	67.2	39.6	27.6
1986	57.4	58.0	30.7	27.3	64.8	66.7	35.0	31.7	70.7	83.1	51.7	31.4	66.1	85.0	53.0	32.0	58.6	86.6	52.0	34.6	46.7	68.4	42.5	25.9
1987	54.1	65.3	34.1	31.2	72.5	71.4	43.5	27.9	73.5	82.1	47.5	34.6	69.8	87.6	53.7	33.9	58.0	82.7	49.6	33.1	49.8	75.8	41.5	34.3
1988	53.9	62.7	29.2	33.5	61.2	69.6	38.7	30.9	73.4	89.8	55.3	34.5	69.0	91.6	55.4	36.2	58.2	87.9	51.6	36.3	46.3	73.6	42.3	31.3
1989	50.5	60.8	29.0	31.8	64.6	69.3	38.6	30.7	69.8	76.6	45.8	30.8	68.5	91.4	55.4	36.0	63.2	86.1	51.9	34.2	46.2	73.4	42.9	30.5
1990	51.8	57.9	30.6	27.3	64.9	66.0	35.0	31.0	71.5	82.4	46.7	35.7	72.0	85.4	54.2	31.2	59.4	85.4	51.6	33.8	46.0	80.1	46.3	33.8
1991	56.2	53.8	30.2	23.6	63.7	64.1	39.5	24.6	67.2	80.5	49.4	31.1	68.4	88.3	54.7	33.6	61.1	88.9	55.1	33.8	50.6	75.5	43.4	32.1
1992	56.1	65.2	32.7	32.5	60.3	71.7	40.6	31.1	66.7	78.7	48.7	30.0	68.0	82.0	52.5	29.5	58.1	84.5	52.3	32.2	47.3	78.9	43.3	35.6
1993	61.0	55.8	32.0	23.8	68.4	69.3	43.0	26.3	71.4	74.1	46.4	27.7	73.4	82.9	50.5	32.4	62.8	84.0	52.0	32.0	45.6	73.0	43.3	29.7
1994	48.3	61.4	32.1	29.3	59.4	78.0	44.0	34.0	69.0	86.7	50.1	36.6	72.6	88.4	54.4	34.0	58.0	90.3	56.4	33.9	44.0	79.8	45.8	34.0
1995	50.3	52.8	28.0	24.8	64.3	59.1	37.6	21.5	69.9	73.3	45.5	27.8	67.9	86.5	51.5	35.0	55.8	91.2	54.0	37.2	44.0	72.7	43.3	29.4
1996	51.6	56.8	29.7	27.1	63.2	64.0	36.6	27.4	69.0	83.0	45.5	37.5	68.4	88.9	50.9	38.0	59.9	87.6	48.1	39.5	46.8	72.4	39.2	33.2
1997	54.4	47.7	22.1	25.6	56.0	67.2	35.9	31.3	72.7	79.8	46.6	33.2	69.9	85.5	52.4	33.1	64.7	83.9	52.9	31.0	44.8	74.2	45.7	28.5
1998	49.9	56.3	29.0	27.3	60.9	70.7	38.1	32.6	71.8	69.5	42.5	27.0	69.9	89.5	55.8	33.7	54.4	87.1	52.7	34.4	47.1	80.9	48.5	32.4
1999	54.9	50.1	28.1	22.0	61.2	63.8	36.0	27.8	72.6	76.3	45.5	30.8	72.4	89.8	53.8	36.0	57.1	87.5	52.4	35.1	45.9	70.2	38.5	31.7
2000	54.9	60.0	28.7	31.3	64.9	69.7	40.1	29.6	73.8	79.8	42.5	37.3	72.0	92.9	52.4	40.5	61.3	90.6	54.1	36.5	45.7	73.3	41.0	32.3
2001	50.2	58.4	31.5	26.9	65.4	71.3	38.4	32.9	73.5	83.0	46.9	36.1	66.6	91.2	56.4	34.8	58.6	89.3	54.8	34.5	38.2	78.1	44.4	33.7
Maximum:	61.0	65.3	34.1	33.5	72.5	78.0	44.0	34.0	73.8	89.8	55.3	37.5	74.7	92.9	58.0	40.5	64.7	91.7	57.8	39.5	50.6	81.3	48.5	38.4
Minimum:	48.3	46.5	22.1	20.9	56.0	59.1	34.7	21.5	66.7	69.5	42.5	27.0	64.4	82.0	48.4	29.5	52.5	80.8	48.0	29.5	38.2	67.2	35.7	25.6
Average:	**52.6**	**56.7**	**29.7**	**27.0**	**63.2**	**67.0**	**38.3**	**28.7**	**71.1**	**79.4**	**47.0**	**32.4**	**69.3**	**87.7**	**53.9**	**33.8**	**58.6**	**86.3**	**52.4**	**33.9**	**46.2**	**74.7**	**42.4**	**32.3**
Median:	51.6	57.3	29.7	27.0	63.4	66.5	38.1	29.4	71.5	79.6	46.6	32.8	68.8	88.2	53.9	33.7	58.6	86.4	52.3	34.1	46.3	74.2	42.7	32.8

Note: Maximum, minimum, average, and median values apply to the period 1972 through 2001.

Appendix 2.1.4.C. Temperature data summary - Glenrock 5 ESE station

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	40.7	54.9	26.5	28.4	54.0	68.0	40.2	27.8		72.6	42.5	30.1		88.2				88.1	51.0			72.3		
1952	49.1	65.1	32.9	32.2	56.2	69.5	42.9	26.6	67.0	83.8	50.1	33.7	70.1	88.4	51.7	36.7						84.3		
1953	41.2	55.5	27.1	28.4	50.4	64.7	36.3	28.4	67.1	84.7	49.9	34.8	75.0	91.8	58.1	33.7	72.5	89.5	55.5	34.0	64.2	83.8	44.6	39.2
1954	48.5	64.7	32.4	32.3	55.9	70.2	41.6	28.6	66.1	81.4	50.8	30.6	77.7	95.2	60.2	35.0	70.9	88.9	52.8	36.1	62.5	80.1	44.9	35.2
1955	45.6	60.6	30.6	30.0	56.4	71.8	41.0	30.8	60.8	73.8	47.8	26.0	74.3	91.1	57.3	33.8	73.1	89.5	56.6	32.9	60.8	77.0	44.5	32.5
1956	41.4	55.6	27.2	28.4	57.6	72.3	42.9	29.4		88.5	49.9	38.6	71.7	89.3	54.2	35.1	67.4	84.0	50.9	33.1	60.7	81.3	40.0	41.3
1957	41.7	55.8	27.5	28.3	51.9	64.5	39.3	25.2	62.2	77.2	47.2	30.0	72.6	90.4	54.9	35.5	72.0	88.6	55.5	33.1	57.1	74.3	40.0	34.3
1958	42.4	54.3	30.4	23.9	60.0	76.0	44.0	32.0	65.5	80.7	50.2	30.5	68.0	84.0	52.0	32.0	72.3	90.2	54.5	35.7				
1959		58.4			52.9	66.7	39.2	27.5	67.7	85.2	50.1	35.1	70.0	89.2	50.8	38.4	69.1	88.3	49.9	38.4	56.9	72.7	41.7	31.0
1960	47.7	62.2	33.2	29.0	54.8	70.8	38.9	31.9	66.1	82.4	49.8	32.6					69.6	87.5	51.7	35.8	61.6	78.0	45.1	32.9
1961	44.8	57.3	32.3	25.0	56.1	68.9	43.2	25.7	66.9	83.2	50.7	32.5	70.9	88.2	53.6	34.6	73.5	89.2	57.7	31.5	54.2	67.7	41.2	26.5
1962	48.3	63.0	33.6	29.4	56.3	69.8	42.7	27.1	62.2	75.6	48.7	26.9	69.7	83.9	55.4	28.5	69.4	87.0	51.8	35.2	60.4	77.6	43.2	34.4
1963					57.4	72.5	42.2	30.3	65.9	80.9	50.9	30.0	74.3	91.3	57.3	34.0	72.4	87.9	57.0	30.9	65.3	81.7	49.0	32.7
1964	43.8	55.6	32.0	23.6					63.3	77.6	49.0	28.6	76.2	93.6	58.8	34.8	69.0	85.6	52.5	33.1	59.3	77.4	41.2	36.2
1965		60.4			53.5	65.2	41.8	23.4	63.5	75.6	51.3	24.3	71.3	86.2	56.5	29.7	68.5	85.1	52.0	33.1	50.9	63.4	38.4	25.0
1966	42.8	56.6	28.9	27.7	58.9	77.3	40.6	36.7	65.0	80.4	49.5	30.9	77.1	94.0	60.2	33.8	69.6	86.0	53.2	32.8	63.5	77.8	49.3	28.5
1967	46.9	61.4	32.4	29.0	52.3	63.5	41.0	22.5	60.8	73.3	48.3	25.0	71.8	87.8	55.9	31.9	71.5	88.5	54.5	34.0	62.6	77.3	47.8	29.5
1968	42.5	55.5	29.4	26.1	51.9	66.0	37.9	28.1	65.2	80.8	49.6	31.2	72.4	88.9	55.8	33.1	67.8	82.8	52.7	30.1	60.2	77.0	43.3	33.7
1969	51.0	64.7	37.2	27.5	59.2	75.3	43.2	32.1	61.3	74.3	48.2	26.1	75.0	92.2	57.7	34.5	75.1	92.5	57.7	34.8	66.6	83.0	50.1	32.9
1970	40.9	52.8	29.1	23.7	56.4	72.9	39.9	33.0	66.2	82.3	50.0	32.3	73.9	91.6	56.2	35.4	75.1	93.5	56.7	36.8	58.8	75.3	42.3	33.0
1971	45.0	57.5	32.4	25.1	52.7	67.3	38.1	29.2	66.9	84.7	49.0	35.7	70.5	89.4	51.7	37.7	71.3	89.0	53.6	35.4	55.8	72.9	38.8	34.1
1972	45.5	60.1	30.9	29.2	55.3	70.2	40.3	29.9	66.0	83.1	48.8	34.3	68.9	89.1	48.7	40.4	69.5	87.2	51.8	35.4	57.8	77.6	38.1	39.5
1973	37.9	49.6	26.3	23.3	52.1	68.0	36.2	31.8	66.1	83.7	48.5	35.2	70.7	88.4	53.1	35.3	72.3	90.5	54.1	36.4	56.6	72.3	40.9	31.4
1974	45.6	58.2	33.0	25.2	55.9	71.1	40.6	30.5	66.7	83.6	49.7	33.9	73.7	90.8	56.7	34.1	67.9	86.1	49.6	36.5	57.1	75.6	38.6	37.0
1975	40.8	52.8	28.9	23.9	54.0	67.6	40.4	27.2	63.5	78.3	48.6	29.7	76.2	91.2	61.2	30.0					58.5	76.4	40.6	35.8
1976	46.9	59.2	34.6	24.6	56.8	71.9	41.7	30.2	62.8	77.8	47.7	30.1					70.5	86.9	54.0	32.9	61.9	78.5	11.3	67.3
1977	48.0	61.5	34.5	27.0	56.9	70.0	43.9	26.1	70.0	85.8	54.2	31.6	73.9	88.6	59.2	29.4	73.9	84.9	53.6	31.3	63.6	80.7	46.4	34.3
1978	47.2	59.2	35.2	24.0	51.9	64.4	39.5	24.9	65.3	80.8	49.9	30.9	71.4	88.2	54.6	33.6	67.4	83.4	51.4	32.0	61.3	78.7	43.8	34.9
1979	46.8	60.7	33.0	27.7	53.3	66.8	39.9	26.9	65.7	81.5	49.8	31.7	73.6	90.3	56.9	33.4	69.3	83.1	55.5	27.6	64.1	82.3	46.0	36.3
1980	45.6	58.9	32.3	26.6	51.5	64.3	38.7	25.6	65.6	83.1	48.2	34.9	74.4	92.1	56.6	35.5	70.2	86.8	53.5	33.3	61.9	79.3	44.4	34.9
1981	51.3	65.8	36.7	29.1	53.2	64.3	42.0	22.3	67.1	82.9	51.3	31.6	73.9	90.2	57.8	32.4	70.6	86.7	54.5	32.2	63.0	80.2	45.8	34.4
1982	43.1	56.8	29.3	27.5	53.3	65.6	41.0	24.6	61.0	72.5	49.4	23.1	72.4	88.5	56.3	32.2	75.5	91.2	59.7	31.5	58.6	72.5	44.7	27.8
1983	39.7	50.7	28.8	21.9	51.4	64.9	38.0	26.9	63.2	77.6	48.8	28.8		90.5							61.2	78.4	43.9	34.5
1984	39.5	51.6	27.5	24.1	54.9	70.5	39.2	31.3									72.8	87.7	57.8	29.9				
1985	47.5	62.4	32.5	29.9	56.4	71.4	41.4	30.0	62.0	79.1	45.6	33.5	74.5	90.9	58.0	32.9	69.6	88.2	51.1	37.1	54.7	67.4	42.0	25.4
1986	47.0	59.4	34.6	24.8	54.8	70.0	39.8	30.2	70.3	87.2	53.3	33.9	70.1	86.8	53.5	33.3	71.4	88.2	54.5	33.7	58.3	70.0	46.7	23.3
1987	52.8	69.5	36.0	33.5	60.3	74.4	46.2	28.2	67.1	84.2	50.0	34.2	73.1	90.0	56.3	33.7								
1988	49.3	66.7	31.8	34.9	58.2	74.9	41.5	33.4	75.3	92.2	58.3	33.9	76.0	95.8	56.1	39.7	72.7	92.0	53.5	38.5	61.4	79.8	42.9	36.9
1989	47.7	62.4	33.0	29.4	54.3	67.9	40.8	27.1	62.3	77.7	46.8	30.9	72.4	89.4	55.4	34.0	68.2	83.3	53.1	30.2	58.7	74.6	42.7	31.9
1990	45.6	58.5	32.6	25.9	52.6	66.2	39.1	27.1	66.3	83.4	49.2	34.2	70.2	85.0	55.4	29.6	68.1	83.9	52.4	31.5	61.3	76.8	45.7	31.1
1991	39.8	51.2	28.4	22.8	50.6	61.8	39.3	22.5	62.0	75.2	48.7	26.5	68.2	83.8	52.6	31.2	66.7	81.5	51.8	29.7	55.4	70.1	40.7	29.4
1992	50.8	66.0	35.6	30.4	58.5	74.2	42.8	31.4	64.1	78.5	49.6	28.9	68.0	82.1	53.9	28.2	67.9	83.0	52.8	30.2	61.1	79.0	43.1	35.9
1993	44.1	57.4	30.8	26.6	56.2	70.3	42.2	28.1	60.5	74.6	46.3	28.3	65.9	80.3	51.5	28.8	66.4	81.8	50.9	30.9	56.9	71.7	42.2	29.5
1994	47.2	60.6	33.8	26.8	62.1	77.0	47.2	29.8	69.6	86.0	53.1	32.9	71.9	88.5	55.4	33.1	72.4	87.5	57.3	30.2	63.4	79.7	47.1	32.6
1995	44.1	55.5	32.6	22.9	51.4	62.1	40.6	21.5	62.9	76.9	48.8	28.1	71.8	88.0	55.5	32.5	75.3	91.5	59.2	32.3	60.6	75.2	45.9	29.3
1996	48.2	61.8	34.5	27.3	54.2	66.0	42.5	23.5	68.2	84.6	51.8	32.8	73.3	89.7	57.0	32.7	71.6	89.0	54.2	34.8	60.3	75.9	44.7	31.2
1997	40.3	53.3	27.2	26.1	56.3	71.0	41.6	29.4	67.3	79.9	54.7	25.2	71.8	87.1	56.5	30.6	69.9	83.8	56.0	27.8	62.9	76.8	49.0	27.8
1998	45.2	57.7	32.7	25.0	57.5	71.8	43.3	28.5	59.4	72.3	46.5	25.8	73.6	88.6	58.6	30.0	70.9	86.9	54.8	32.1	66.4	81.8	50.9	30.9
1999	41.4	51.4	31.0	20.4	53.2	66.3	40.1	26.2	62.2	76.1	48.8	27.3	73.1	89.3	57.1	32.2	71.5	86.1	57.1	29.0	55.7	71.0	40.6	30.4
2000	47.2	61.3	33.2	28.1	56.8	71.6	42.2	29.4	63.5	79.9	47.5	32.4		90.4				88.2			58.1	74.4	42.4	32.0
2001																		86.7			60.5	77.1	44.4	32.7
Maximum:	52.8	69.5	36.7	34.9	62.1	77.0	47.2	33.4	75.3	92.2	58.3	35.2	76.2	95.8	61.2	40.4	75.5	92.0	59.7	38.5	66.4	82.3	50.9	67.3
Minimum:	37.9	49.6	26.3	20.4	50.6	61.8	36.2	21.5	59.4	72.3	45.6	23.1	65.9	80.3	48.7	28.2	66.4	81.5	49.6	27.6	54.7	67.4	11.3	23.3
Average:	**45.4**	**58.6**	**32.1**	**26.5**	**55.0**	**68.8**	**41.1**	**27.7**	**65.2**	**80.7**	**49.8**	**30.9**	**72.1**	**88.7**	**55.8**	**32.8**	**70.5**	**86.5**	**54.2**	**32.3**	**60.0**	**76.2**	**42.7**	**33.5**
Median:	45.6	59.2	32.6	26.6	54.8	70.0	40.8	28.1	65.5	80.4	49.0	31.6	72.4	89.1	56.3	32.7	70.5	86.8	54.0	32.0	60.6	76.8	43.9	32.3

Note: Maximum, minimum, average, and median values apply to the period 1972 through 2001.

Appendix 2.1.4.C. Temperature data summary - Douglas 1 ESE and Douglas stations

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	40.0	53.9	26.0	27.9	54.1	67.3	40.8	26.5	56.9	70.5	43.2	27.3	69.3	85.9	52.6	33.3	68.3	84.6	52.1	32.5	55.6	72.3	38.8	33.5
1952	48.0	64.6	31.3	33.3	55.6	69.8	41.4	28.4	67.3	84.3	50.8	33.5	69.8	86.8	52.8	34.0	68.5	85.3	51.6	33.7	61.3	81.1	41.5	39.6
1953	40.0	53.8	26.2	27.6	50.3	64.2	36.4	27.8	66.2	83.0	49.4	33.6	73.4	90.0	56.7	33.3	69.9	86.2	53.7	32.5	60.7	80.5	40.9	39.6
1954	48.8	64.1	33.5	30.6	54.5	69.2	39.9	29.3	65.3	80.5	50.0	30.5	75.9	93.2	58.6	34.6	70.0	88.1	51.8	36.3	62.4	79.9	45.0	34.9
1955	*43.5*	*57.3*	*29.6*	*27.7*	*54.2*	*68.5*	*39.9*	*28.6*	*58.4*	*69.7*	*47.0*	*22.7*	*71.7*	*88.4*	*55.1*	*33.3*	*71.2*	*87.1*	*55.4*	*31.7*	*59.0*	*75.9*	*42.1*	*33.8*
1956	*39.5*	*52.5*	*26.6*	*25.9*	*55.3*	*68.3*	*42.3*	*26.0*	*67.1*	*86.1*	*48.0*	*38.1*	*69.0*	*85.5*	*52.5*	*33.0*	*65.0*	*81.8*	*48.1*	*33.7*	*60.1*	*79.7*	*40.1*	*39.6*
1957	*39.6*	*50.3*	*28.8*	*21.5*	*50.6*	*60.7*	*40.5*	*20.2*	*60.3*	*74.0*	*46.6*	*27.4*	*70.7*	*87.6*	*53.8*	*33.8*	*70.1*	*85.4*	*54.7*	*30.7*	*54.9*	*71.1*	*38.7*	*32.4*
1958	*40.3*	*51.3*	*29.4*	*21.9*	*58.0*	*73.6*	*42.5*	*31.1*	*62.9*	*78.1*	*47.8*	*30.3*	*65.4*	*79.8*	*50.9*	*28.9*	*69.9*	*87.0*	*52.8*	*34.2*	*59.1*	*76.8*	*41.4*	*35.4*
1959	*42.2*	*56.9*	*27.5*	*29.4*	*51.5*	*64.0*	*38.9*	*25.1*	*66.8*	*83.8*	*49.8*	*34.0*	*69.0*	*87.6*	*50.5*	*37.1*	*69.4*	*87.4*	*51.4*	*36.0*	*56.4*	*70.2*	*42.7*	*27.5*
1960	47.3	61.4	33.2	28.2	54.3	70.8	38.3	32.5	65.4	80.0	50.4	29.6	73.1	90.2	56.0	34.2					60.4	79.6	41.2	38.4
1961	41.8	54.9	28.6	26.3	52.9	66.0	39.9	26.1	64.2	80.9	47.6	33.3	69.1	85.8	52.2	33.6	69.9	86.2	53.5	32.7	51.5	66.1	36.9	29.2
1962	48.8	65.4	32.2	33.2	55.1	69.2	41.0	28.2	62.5	76.8	48.3	28.5	68.7	84.3	53.1	31.2	*66.7*	*85.1*	*48.3*	*36.8*	*58.4*	*75.4*	*41.3*	*34.1*
1963	*43.5*	*56.7*	*30.2*	*26.5*	*55.0*	*70.8*	*39.2*	*31.6*	*65.0*	*80.8*	*49.1*	*31.7*	*72.8*	*89.4*	*56.2*	*33.2*	*70.1*	*85.6*	*54.5*	*31.1*	*63.4*	*80.3*	*46.5*	*33.8*
1964	*41.2*	*52.7*	*29.6*	*23.1*	*53.4*	*67.4*	*39.4*	*28.0*	*61.1*	*76.2*	*45.9*	*30.3*	*74.3*	*91.6*	*57.0*	*34.6*	*66.3*	*83.3*	*49.4*	*33.9*	*57.7*	*76.8*	*38.6*	*38.2*
1965	*47.6*	*59.7*	*35.5*	*24.2*	*51.4*	*63.2*	*39.5*	*23.7*	*61.0*	*73.6*	*48.4*	*25.2*	*69.6*	*84.7*	*54.5*	*30.2*	*66.2*	*83.5*	*48.9*	*34.6*	*49.2*	*62.0*	*36.4*	*25.6*
1966	*39.3*	*53.0*	*25.6*	*27.4*	*55.7*	*74.5*	*36.9*	*37.6*	*62.7*	*79.0*	*46.3*	*32.7*	*75.3*	*92.7*	*58.0*	*34.7*	*66.8*	*84.1*	*49.5*	*34.6*	*61.9*	*78.5*	*45.3*	*33.2*
1967	*43.4*	*57.7*	*29.1*	*28.6*	*48.2*	*59.9*	*36.5*	*23.4*	*58.2*	*70.4*	*46.0*	*24.4*	*68.9*	*84.4*	*53.4*	*31.0*	*68.0*	*86.1*	*49.8*	*36.3*	*59.8*	*75.6*	*44.0*	*31.6*
1968	*38.8*	*52.6*	*24.9*	*27.7*	*48.7*	*61.9*	*35.5*	*26.4*	*61.2*	*76.1*	*46.2*	*29.9*	*69.4*	*86.6*	*52.1*	*34.5*	*64.9*	*81.3*	*48.5*	*32.8*	*55.9*	*74.5*	*37.1*	*37.4*
1969	*47.3*	*62.2*	*32.4*	*29.8*	*55.9*	*72.5*	*39.2*	*33.3*	*57.6*	*71.0*	*44.3*	*26.7*	*70.6*	*88.4*	*52.7*	*35.7*	*71.5*	*90.3*	*52.6*	*37.7*	*62.9*	*81.2*	*44.6*	*36.6*
1970	*38.3*	*50.7*	*25.8*	*24.9*	*54.0*	*69.2*	*38.7*	*30.5*	*62.7*	*78.6*	*46.7*	*31.9*	*70.9*	*87.9*	*53.9*	*34.0*	*71.6*	*89.4*	*53.9*	*35.5*	*54.4*	*71.6*	*37.3*	*34.3*
1971	*42.1*	*55.6*	*28.7*	*26.9*	*50.6*	*63.1*	*38.1*	*25.0*	*64.4*	*80.1*	*48.6*	*31.5*	*67.3*	*84.2*	*50.2*	*34.0*	*70.1*	*88.5*	*51.7*	*36.8*	*54.7*	*69.4*	*40.0*	*29.4*
1972	*42.8*	*56.2*	*29.5*	*26.7*	*53.0*	*66.5*	*39.5*	*27.0*	*64.2*	*79.6*	*48.9*	*30.7*	*65.9*	*81.8*	*50.0*	*31.8*	*68.2*	*83.5*	*52.9*	*30.6*	*56.8*	*73.5*	*40.0*	*33.5*
1973	*36.4*	*48.4*	*24.4*	24.0	*50.6*	*66.9*	*34.3*	*32.6*	*61.9*	*78.7*	*45.1*	*33.6*	*68.0*	*83.1*	*52.8*	*30.3*	*69.2*	*86.5*	*51.8*	*34.7*				
1974	*43.9*	*56.8*	*31.1*	*25.7*	*52.4*	*68.7*	*36.1*	*32.6*					*72.1*	*89.3*	*55.0*	*34.3*	*65.0*	*82.3*	*47.8*	*34.5*	*53.5*	*71.9*	*35.2*	*36.7*
1975	*39.7*	*52.6*	*26.7*	*25.9*	*50.8*	*64.7*	*36.8*	*27.9*					*72.5*	*89.0*	*56.0*	*33.0*	*68.2*	*85.0*	*51.4*	*33.6*				
1976	*44.6*	*56.9*	*32.2*	*24.7*	*54.2*	*68.9*	*39.5*	*29.4*	*60.8*	*75.5*	*46.0*	*29.5*	*72.3*	*87.9*	*56.7*	*31.2*	*68.5*	*85.4*	*51.5*	*33.9*	*58.2*	*75.5*	*40.8*	*34.7*
1977	*46.3*	*61.1*	*31.6*	*29.5*	*55.3*	*69.5*	*41.0*	*28.5*	*68.4*	*84.8*	*52.0*	*32.8*	*71.0*	*85.7*	*56.2*	*29.5*	*66.2*	*80.7*	*51.8*	*28.9*	*61.1*	*79.0*	*43.2*	*35.8*
1978	*45.7*	*57.8*	*33.6*	*24.2*	*49.8*	*62.0*	*37.6*	*24.4*	*62.5*	*78.8*	*46.2*	*32.6*	*69.4*	*84.6*	*54.2*	*30.4*	*64.9*	*81.3*	*48.4*	*32.9*	*59.6*	*78.0*	*41.3*	*36.7*
1979	*44.4*	*59.2*	*29.5*	*29.7*	*50.4*	*64.1*	*36.7*	*27.4*	*62.4*	*78.0*	*46.7*	*31.3*			*55.7*		*67.0*	*81.1*	*52.9*	*28.2*				
1980	*43.9*	*59.3*	*28.5*	*30.8*	*51.8*	*65.2*	*38.3*	*26.9*	*65.4*	*82.5*	*48.2*	*34.3*					*66.8*	*82.2*	*51.3*	*30.9*	*59.7*	*77.3*	*42.0*	*35.3*
1981	*50.1*	*64.5*	*35.6*	*28.9*	*51.7*	*62.7*	*40.7*	*22.0*	*65.2*	*80.2*	*50.2*	*30.0*	*71.8*	*86.9*	*56.6*	*30.3*	*68.2*	*83.9*	*52.6*	*31.3*	*61.4*	*78.5*	*44.3*	*34.2*
1982	*41.7*	*56.6*	*26.8*	*29.8*	*50.9*	*63.6*	*38.2*	*25.4*	*59.2*	*71.5*	*46.9*	*24.6*	*69.3*	*84.9*	*53.7*	*31.2*								
1983	*37.5*	*48.9*	*26.1*	*22.8*					*60.1*	*72.7*	*47.5*	*25.2*	*70.1*	*85.3*	*54.9*	*30.4*	*73.6*	*88.4*	*58.9*	*29.5*	*59.6*	*76.5*	*42.6*	*33.9*
1984	*38.6*	*50.1*	*27.1*	*23.0*	*53.6*	*69.1*	*38.0*	*31.1*	*61.6*	*76.9*	*46.3*	*30.6*	*71.4*	*87.6*	*55.2*	*32.4*	*70.5*	*87.2*	*53.7*	*33.5*	*53.8*	*70.8*	*36.9*	*33.9*
1985	*46.6*	*63.3*	*29.9*	*33.4*	*56.8*	*73.4*	*40.1*	*33.3*					*71.9*	*89.0*	*54.7*	*34.3*	*66.8*	*85.7*	*47.8*	*37.9*	*54.8*	*68.5*	*41.1*	*27.4*
1986	*44.3*	*57.2*	*31.3*	*25.9*	*51.3*	*66.7*	*35.8*	*30.9*	*65.6*	*80.7*	*50.5*	*30.2*	*68.4*	*85.3*	*51.6*	*33.7*	*68.8*	*85.9*	*51.6*	*34.3*	*55.5*	*68.9*	*42.1*	*26.8*
1987	*48.3*	*65.2*	*31.4*	*33.8*	*58.2*	*72.8*	*43.6*	*29.2*	*64.1*	*81.1*	*47.1*	*34.0*	*70.7*	*88.1*	*53.3*	*34.8*	*65.9*	*82.3*	*49.5*	*32.8*	*57.8*	*76.7*	*38.9*	*37.8*
1988	*46.1*	*64.5*	*27.6*	*36.9*	*55.6*	*71.6*	*39.6*	*32.0*	*70.9*	*88.4*	*53.3*	*35.1*	*72.2*	*89.7*	*54.6*	*35.1*	*69.2*	*87.7*	*50.7*	*37.0*	*57.4*	*75.1*	*39.6*	*35.5*
1989	*45.7*	*60.8*	*30.7*	*30.1*	*54.4*	*69.8*	*38.9*	*30.9*	*61.4*	*77.5*	*45.3*	*32.2*	*72.8*	*90.2*	*55.4*	*34.8*	*69.2*	*86.0*	*52.5*	*33.5*	*57.3*	*74.0*	*40.6*	*33.4*
1990					*51.7*	*66.2*	*37.3*	*28.9*					*69.7*	*84.7*	*54.7*	*30.0*	*68.3*	*85.6*	*51.1*	*34.5*	*62.9*	*80.8*	*45.0*	*35.8*
1991	*43.1*	*55.8*	*30.4*	*25.4*	*54.2*	*65.8*	*42.6*	*23.2*	*65.0*	*79.2*	*50.9*	*28.3*	*71.0*	*88.0*	*54.0*	*34.0*	*70.7*	*87.9*	*53.6*	*34.3*	*59.8*	*75.9*	*43.7*	*32.2*
1992	*48.7*	*65.7*	*31.6*	*34.1*	*56.5*	*72.9*	*40.0*	*32.9*	*63.9*	*79.0*	*48.9*	*30.1*	*66.5*	*81.4*	*51.5*	*29.9*	*65.9*	*82.2*	*49.7*	*32.5*	*59.4*	*78.9*	*39.9*	*39.0*
1993	*42.9*	*55.9*	*29.9*	*26.0*	*55.4*	*69.5*	*41.2*	*28.3*	*59.5*	*73.5*	*45.4*	*28.1*	*65.8*	*81.5*	*50.1*	*31.4*	*66.9*	*83.0*	*50.8*	*32.2*	*55.0*	*71.1*	*38.9*	*32.2*
1994	*44.9*	*60.9*	*28.8*	*32.1*	*60.0*	*76.2*	*43.9*	*32.3*	*66.8*	*84.3*	*49.3*	*35.0*	*69.0*	*85.6*	*52.4*	*33.2*	*70.8*	*87.9*	*53.6*	*34.3*	*60.5*	*79.8*	*41.1*	*38.7*
1995																	71.5	90.3	52.7	37.6	58.1	73.6	42.6	31.0
1996	45.5	61.4	29.6	31.8	52.2	65.4	39.1	26.3	65.7	83.1	48.2	34.9	70.8	87.5	54.1	33.4	68.9	86.7	51.0	35.7	57.7	74.1	41.3	32.8
1997	39.2	52.9	25.5	27.4	53.7	70.6	36.9	33.7	65.8	79.7	51.9	27.8	70.2	86.3	54.0	32.3	68.0	83.4	52.6	30.8	60.5	76.2	44.8	31.4
1998	44.8	59.5	30.1	29.4	56.2	72.8	39.6	33.2	57.7	72.1	43.2	28.9					70.1	87.1	53.0	34.1	64.3	80.7	48.0	32.7
1999	40.5	52.4	28.7	23.7	53.4	67.1	39.1	28.0	62.1	76.7	47.6	29.1	72.4	88.7	56.0	32.7	70.3	86.9	53.8	33.1	54.3	71.0	38.3	32.7
2000	45.7	60.9	30.4	30.5	56.8	73.0	40.2	32.8	63.0	79.9	46.1	33.8	73.1	90.8	55.5	35.3	71.6	88.9	54.0	34.9	57.3	74.5	40.0	34.5
2001		60.3			54.6	70.9	38.7	32.2	65.1	82.6	47.8	34.8	73.3	90.5	56.2	34.3	72.7	89.5	55.8	33.7	61.7	78.6	44.9	33.7
Maximum:	50.1	65.7	35.6	36.9	60.0	76.2	43.9	33.7	70.9	88.4	53.3	35.1	73.3	90.8	56.7	35.3	73.6	90.3	58.9	37.9	64.3	80.8	48.0	39.0
Minimum:	36.4	48.4	24.4	22.8	49.8	62.0	34.3	22.0	57.7	71.5	43.2	24.6	65.8	81.4	50.0	29.5	64.9	80.7	47.8	28.2	53.5	68.5	35.2	26.8
Average:	**43.8**	**58.0**	**29.6**	**28.4**	**53.8**	**68.5**	**39.0**	**29.4**	**63.5**	**79.1**	**48.0**	**31.1**	**70.4**	**86.7**	**54.3**	**32.5**	**68.7**	**85.3**	**52.0**	**33.3**	**58.4**	**75.4**	**41.4**	**33.9**
Median:	44.4	58.5	29.9	28.9	53.7	68.8	39.1	29.3	63.9	79.2	47.6	30.7	70.9	87.2	54.7	32.6	68.5	85.7	51.8	33.6	58.2	75.7	41.2	33.9

Notes:
Maximum, minimum, average, and median values apply to the period 1972 through 2001.
Italicized values are from Douglas weather station.

Appendix 2.1.4.C. Temperature data summary - Torrington Experimental Farm station

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	42.2	58.3	26.1	32.2	56.6	70.6	42.5	28.1	59.8	74.6	45.0	29.6	69.7	84.4	55.1	29.3	68.4	85.1	51.8	33.3	58.0	74.5	41.5	33.0
1952	47.5	64.7	30.2	34.5	56.2	70.8	41.6	29.2	70.2	87.4	53.0	34.4	70.9	88.7	53.1	35.6	71.3	87.3	55.3	32.0	62.2	81.7	42.8	38.9
1953	42.1	56.7	27.5	29.2	53.3	66.8	39.7	27.1	67.6	83.4	51.8	31.6	72.7	88.0	57.4	30.6	70.1	86.1	54.1	32.0	62.1	82.6	41.9	40.7
1954	50.6	69.0	32.1	36.9	55.4	69.9	41.0	28.9	67.2	82.4	52.1	30.3	75.0	92.1	57.9	34.2	70.0	86.9	53.2	33.7	63.1	81.6	44.7	36.9
1955	47.9	64.9	31.0	33.9	58.1	74.6	41.6	33.0	62.2	75.5	48.8	26.7	73.2	89.4	57.0	32.4	72.5	87.8	57.2	30.6	60.9	78.9	43.0	35.9
1956	42.8	59.2	26.5	32.7	59.0	74.1	44.0	30.1	71.5	90.6	52.4	38.2	70.1	86.4	53.8	32.6	67.4	84.9	49.9	35.0	60.9	82.7	39.1	43.6
1957	41.8	54.0	29.6	24.4	53.9	65.5	42.2	23.3	64.0	79.1	49.1	30.0	72.5	89.4	55.6	33.8	69.7	84.6	54.8	29.8	57.7	75.4	39.9	35.5
1958	43.6	56.9	30.4	26.5	61.1	77.7	44.6	33.1	65.3	80.5	50.1	30.4	67.7	83.2	52.3	30.9	70.8	89.6	52.0	37.6	60.9	81.5	40.3	41.2
1959	46.0	63.3	28.6	34.7	55.4	69.0	41.7	27.3	70.3	87.9	52.7	35.2	71.0	89.9	52.2	37.7	72.2	91.4	53.1	38.3	56.9	73.9	39.9	34.0
1960	49.1	66.5	31.8	34.7	57.2	75.1	39.4	35.7	66.8	83.9	49.7	34.2	73.2	93.1	53.4	39.7	69.8	90.1	49.5	40.6	61.6	83.1	40.1	43.0
1961	44.9	61.0	28.8	32.2	55.5	69.5	41.5	28.0	68.1	85.7	50.4	35.3	72.7	89.9	55.5	34.4	72.8	90.1	55.5	34.6	56.3	72.4	40.1	32.3
1962	50.7	69.6	31.7	37.9	58.7	75.1	42.3	32.8	64.5	78.6	50.3	28.3	70.5	86.6	54.4	32.2	70.0	89.4	50.5	38.9	60.9	79.6	42.2	37.4
1963	48.6	64.7	32.4	32.3	58.8	76.1	41.6	34.5	67.7	84.4	51.0	33.4	74.7	92.9	56.5	36.4	72.0	88.8	55.1	33.7	66.3	83.3	49.4	33.9
1964	46.4	61.6	31.2	30.4	58.2	74.4	42.0	32.4	65.3	82.2	48.4	33.8	76.2	95.2	57.3	37.9	68.4	86.6	50.2	36.4	59.0	79.2	38.8	40.4
1965	50.5	66.2	34.7	31.5	56.8	72.1	41.5	30.6	64.7	78.6	50.8	27.8	72.2	87.7	56.6	31.1	68.3	85.5	51.0	34.5	52.9	67.3	38.5	28.8
1966	43.8	60.8	26.7	34.1	59.5	79.5	39.5	40.0	66.3	82.6	50.1	32.5	77.6	94.7	60.5	34.2	68.2	84.5	51.9	32.6	62.5	78.6	46.4	32.2
1967	49.9	66.5	33.3	33.2	52.6	66.0	39.2	26.8	63.4	76.4	50.3	26.1	72.2	88.8	55.5	33.3	69.6	87.6	51.5	36.1	62.5	79.8	45.1	34.7
1968	44.1	59.8	28.3	31.5	52.9	68.1	37.6	30.5	67.0	84.2	49.8	34.4	71.8	89.5	54.1	35.4	67.1	86.3	48.0	38.3				
1969	52.4	70.0	34.8	35.2	59.6	79.2	40.0	39.2	60.9	77.2	44.8	32.4	73.9	93.1	54.7	38.4	73.7	93.6	53.7	39.9	65.6	85.4	45.9	39.5
1970	42.5	57.1	27.8	29.3	59.0	77.2	40.8	36.4	67.3	86.1	48.6	37.5	74.0	92.5	55.6	36.9	73.6	93.8	53.4	40.4	60.7	82.2	39.2	43.0
1971	47.6	65.6	29.6	36.0	54.6	68.7	40.5	28.2		86.4			71.1	90.5	51.7	38.8	72.8	93.3	52.4	40.9				
1972	46.7	62.7	30.6	32.1	57.0	73.4	40.6	32.8	69.3	85.4	53.2	32.2	69.9	87.5	52.4	35.1	70.7	87.6	53.9	33.7	61.4	80.5	42.3	38.2
1973	46.7	63.0	30.2	32.8	56.9	75.5	38.3	37.2	66.1	83.9	49.1	34.1	71.8	89.7	54.0	35.7	72.4	91.3	53.5	37.8	58.8	75.1	42.5	32.6
1974	48.5	65.5	31.5	34.0	58.5	76.8	40.3	36.5	68.9	88.0	49.7	38.3	74.4	95.1	53.7	41.4	67.2	86.4	48.0	38.4	56.4	78.4	34.5	43.9
1975	44.3	59.6	29.0	30.6	55.8	71.7	39.9	31.8	65.2	83.0	47.5	35.5	75.1	93.8	56.4	37.4	70.9	90.4	51.3	39.1	58.4	77.8	38.9	38.9
1976	48.1	62.5	33.6	28.9	57.2	74.8	39.5	35.3	65.3	82.8	47.8	35.0	74.8	92.1	57.5	34.6	70.5	88.7	52.4	36.3	62.0	81.7	42.2	39.5
1977	52.4	67.2	37.4	29.8	59.7	75.6	43.4	32.2	70.2	87.3	53.1	34.2	73.0	89.9	56.0	33.9	66.9	81.5	52.2	29.3	62.3	81.9	42.6	39.3
1978	47.7	61.4	33.9	27.5	53.5	66.3	40.7	25.6	65.0	81.1	48.9	32.2	71.3	86.7	55.9	30.8	66.5	83.3	49.7	33.6	61.4	80.0	42.7	37.3
1979	47.0	61.7	32.3	29.4	52.9	65.8	40.0	25.8	64.8	80.1	49.6	30.5	71.7	88.1	55.4	32.7	68.3	84.2	52.5	31.7	62.8	82.4	43.1	39.3
1980	44.9	60.5	29.2	31.3	53.5	66.5	40.1	26.4	64.7	80.5	48.8	31.7	73.2	90.1	55.0	33.9	68.7	86.2	51.2	35.0	59.9	78.5	40.9	37.6
1981	51.2	65.3	36.4	28.9	53.5	65.4	41.3	24.1	66.8	82.9	50.6	32.3	71.3	86.8	55.7	31.1	67.5	83.9	51.2	32.7	61.4	79.3	43.4	35.9
1982	43.1	60.5	25.6	34.9	54.0	67.6	40.5	27.1	61.5	74.6	48.4	26.2	70.9	87.4	54.4	33.0	70.6	86.5	54.7	31.8	57.4	72.5	42.4	30.1
1983	39.4	52.5	26.3	26.2	49.8	63.7	35.9	27.8	62.9	76.7	49.0	27.7	71.7	87.8	55.3	32.3	73.8	91.8	55.8	36.0	59.3	80.2	38.3	41.9
1984	40.5	51.7	29.3	22.4	57.9	73.6	42.1	31.5	65.2	80.6	49.7	30.9	72.7	88.3	57.1	31.2	72.5	89.2	55.8	33.4	55.8	72.8	38.7	34.1
1985	49.2	65.5	32.9	32.6	59.5	76.2	42.8	33.4	64.2	81.5	46.8	34.7	71.9	89.7	54.0	35.7	67.3	86.7	47.8	38.9	54.9	71.6	38.1	33.5
1986	46.4	59.5	33.3	26.2	54.6	69.3	39.9	29.4	69.0	84.2	53.7	30.5	70.9	87.7	54.1	33.6	68.9	87.0	50.9	36.1	56.3	70.9	41.7	29.2
1987	50.2	69.4	30.9	38.5	60.3	73.9	46.6	27.3	67.2	84.3	50.0	34.3	73.0	90.5	55.4	35.1	67.4	83.4	51.4	32.0	59.4	79.3	39.6	39.7
1988	46.1	64.3	28.0	36.3	57.7	73.7	41.7	32.0	72.7	89.3	56.1	33.2	73.4	90.2	56.5	33.7	72.1	91.0	53.2	37.8	58.7	77.2	40.2	37.0
1989	47.5	64.4	30.7	33.7	57.2	72.8	41.6	31.2	66.0	84.1	47.9	36.2	75.2	92.7	57.7	35.0	70.5	87.5	53.6	33.9	58.5	75.4	41.7	33.7
1990	45.8	60.3	31.2	29.1	53.5	67.9	39.1	28.8	68.6	84.8	52.4	32.4	70.5	86.0	55.1	30.9	69.5	86.9	52.1	34.8	64.5	82.8	46.1	36.7
1991	45.2	59.0	31.4	27.6	57.0	69.9	44.0	25.9	66.8	81.1	52.5	28.6	72.3	88.5	56.2	32.3	72.5	90.0	55.0	35.0	61.5	79.7	43.2	36.5
1992	49.1	67.6	30.7	36.9	65.9	77.5	42.1	35.4	65.5	80.6	50.4	30.2	67.6	82.6	52.7	29.9	65.9	81.8	49.9	31.9	60.6	80.8	40.4	40.4
1993	45.2	59.2	31.2	28.0	57.7	73.8	41.6	32.2	62.2	76.4	48.0	28.4	68.3	83.5	53.1	30.4	68.4	82.8	53.9	28.9	55.9	71.6	40.2	31.4
1994	46.1	62.5	29.7	32.8	61.6	78.6	44.5	34.1	69.5	86.3	52.7	33.6	70.4	86.6	54.3	32.3	72.6	90.5	54.6	35.9	62.1	81.1	43.0	38.1
1995	42.2	56.8	27.5	29.3	50.0	60.1	39.8	20.3	63.4	77.7	49.1	28.6	71.2	88.9	53.5	35.4	73.2	91.5	55.0	36.5	59.2	76.0	42.4	33.6
1996	46.2	62.7	29.7	33.0	55.4	68.1	42.6	25.5	67.9	83.8	52.1	31.7	73.2	89.3	57.1	32.2	70.6	87.7	53.5	34.2	59.8	76.0	43.6	32.4
1997	39.9	53.5	26.6	26.9	55.2	70.0	40.4	29.6	67.9	82.3	53.4	28.9	72.0	88.4	55.6	32.8	69.8	84.8	54.8	30.0	62.7	78.7	46.7	32.0
1998	44.6	60.3	28.9	31.4	57.6	74.1	41.1	33.0	60.7	75.9	45.6	30.3	74.6	90.7	58.5	32.2	72.0	88.6	55.3	33.3	66.4	84.7	48.1	36.6
1999	43.3	56.1	30.5	25.6	55.6	70.3	40.9	29.4	65.6	80.4	50.7	29.7	73.4	89.6	57.1	32.5	70.7	87.1	54.5	32.6	58.1	75.2	41.0	34.2
2000	47.4	64.6	30.2	34.4	59.0	74.5	43.5	31.0	65.8	82.8	48.8	34.0	74.6	91.2	58.0	33.2	74.4	91.9	56.9	35.0	60.1	78.1	42.1	36.0
2001	47.1	62.3	31.9	30.4	56.8	71.6	42.0	29.6	66.8	83.0	50.6	32.4	76.3	92.7	59.9	32.8	73.2	90.6	55.8	34.8	63.1	81.3	44.8	36.5
Maximum:	52.4	69.4	37.4	38.5	65.9	78.6	46.6	37.2	72.7	89.3	56.1	38.3	76.3	95.1	59.9	41.4	74.4	91.9	56.9	39.1	66.4	84.7	48.1	43.9
Minimum:	39.4	51.7	25.6	22.4	49.8	60.1	35.9	20.3	60.7	74.6	45.6	26.2	67.6	82.6	52.4	29.9	65.9	81.5	47.8	28.9	54.9	70.9	34.5	29.2
Average:	**46.1**	**61.4**	**30.7**	**30.7**	**56.5**	**71.3**	**41.2**	**30.1**	**66.2**	**82.2**	**50.2**	**32.0**	**72.4**	**89.1**	**55.6**	**33.4**	**70.2**	**87.4**	**53.0**	**34.3**	**60.0**	**78.1**	**41.8**	**36.2**
Median:	46.3	62.0	30.7	30.5	57.0	72.3	41.0	30.3	65.9	82.8	49.7	32.2	72.2	89.1	55.5	32.9	70.6	87.3	53.5	34.5	59.9	78.6	42.3	36.6

Note: Maximum, minimum, average, and median values apply to the period 1972 through 2001.

Appendix 2.1.4.C. Temperature data summary - Centennial 1N station

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	34.9	45.5	24.2	21.3	46.4	58.5	34.2	24.3	48.8	62.1	35.5	26.6	62.0	77.5	46.5	31.0	59.0	73.4	44.5	28.9	50.5	66.8	34.2	32.6
1952	37.6	50.5	24.7	25.8	45.5	58.1	32.8	25.3	57.3	73.3	41.2	32.1	60.5	76.3	44.7	31.6	60.0	75.3	44.7	30.6	54.9	71.2	38.5	32.7
1953	32.0	43.9	20.2	23.7	41.4	53.6	29.3	24.3	56.8	72.2	41.5	30.7	63.5	78.1	48.8	29.3	59.5	74.1	44.8	29.3	54.8	70.6	38.9	31.7
1954		52.9			47.0	60.5	33.5	27.0	55.6	70.6	40.6	30.0	66.0	81.3	50.6	30.7	61.2	76.5	45.9	30.6	55.1	69.1	40.8	28.3
1955	36.9	50.4	34.5	15.9	46.7	60.7	33.0	27.7	52.8	66.3	39.4	26.9	64.0	80.2	47.8	32.4	63.6	76.6	50.6	26.0	54.5	70.0	39.3	30.7
1956	37.8	50.3	36.0	14.3	49.0	62.1	36.0	26.1					60.9	76.3	45.5	30.8			43.9		56.1	72.8	39.5	33.3
1957	33.7	45.2	22.2	23.0	43.5	54.5	32.6	21.9	53.9	67.2	40.7	26.5	62.3	76.8	47.7	29.1	61.6	76.3	46.9	29.4	51.0	66.8	35.2	31.6
1958	33.9	45.4	33.5	11.9	50.1	64.1	36.2	27.9	56.8	72.9	40.8	32.1	60.6	75.7	45.5	30.2	63.7	78.3	49.2	29.1	54.0	68.8	39.2	29.6
1959	35.6	47.4	23.7	23.7	44.8	57.5	32.0	25.5	59.3	73.6	44.9	28.7	62.6	78.5	46.7	31.8	61.3	76.6	46.0	30.6	50.4	63.4	37.4	26.0
1960	38.9	52.4	36.6	15.8	46.0	59.9	32.2	27.7	56.4	71.1	41.7	29.4	62.4	77.9	47.0	30.9	60.6	76.8	44.3	32.5	55.4	70.4	40.3	30.1
1961	33.7	45.3	22.2	23.1	46.9	59.5	34.3	25.2	57.8	72.8	42.8	30.0	61.6	76.1	47.2	28.9	62.1	77.0	47.3	29.7	46.6	58.3	34.9	23.4
1962	40.1	53.2	27.0	26.2	47.7	60.4	35.1	25.3	54.5	69.0	40.0	29.0	60.6	75.3	45.9	29.4	60.4	75.8	45.0	30.8	52.9	68.0	37.8	30.2
1963	37.6	49.4	25.8	23.6	49.8	63.8	35.8	28.0	56.5	71.4	41.6	29.8	64.2	79.7	48.7	31.0	61.1	73.9	48.4	25.5	57.8	72.0	43.7	28.3
1964	35.1	46.0	24.2	21.8	47.9	60.7	35.2	25.5	53.3	67.2	39.3	27.9	66.3	82.2	50.3	31.9	59.2	73.3	45.1	28.2	52.5	67.2	37.9	29.3
1965	39.1	52.1	26.2	25.9	43.9	57.7	30.1	27.6	52.7	66.6	38.7	27.9	59.8	76.6	43.1	33.5	57.3	73.0	41.7	31.3	44.4	58.0	30.8	27.2
1966	34.6	44.9	24.3	20.6	49.2	62.4	35.9	26.5	52.4	69.6	35.2	34.4	63.0	80.9	45.1	35.8	58.6	77.0	40.1	36.9	52.7	71.0	34.4	36.6
1967	41.4	53.3	29.5	23.8	43.7	54.9	32.5	22.4	49.7	61.8	37.6	24.2	59.8	77.2	42.4	34.8	59.1	77.6	40.6	37.0	50.8	63.7	37.8	25.9
1968	35.1	42.8	27.3	15.5	43.9	57.2	30.6	26.6	58.6	74.5	42.6	31.9	64.9	79.7	50.0	29.7	58.6	76.6	40.6	36.0	53.7	71.3	36.2	35.1
1969																								
1970	31.1	45.5	16.7	28.8	47.6	62.5	32.8	29.7	54.6	69.7	39.5	30.2												
1971																								
1972																								
1973																								
1974																								
1975																								
1976																								
1977									60.2	75.1	45.3	29.8	61.4	75.9	46.9	29.0	58.4	72.2	44.6	27.6	54.1	69.4	38.7	30.7
1978	39.0	50.8	27.1	23.7	43.8	56.0	31.5	24.5	54.5	69.6	39.3	30.3	61.7	77.4	46.0	31.4	57.5	73.3	41.7	31.6	52.1	67.8	36.3	31.5
1979	37.1	48.7	25.5	23.2	43.9	56.2	31.5	24.7	55.2	68.9	41.5	27.4	61.9	76.8	46.9	29.9	58.4	71.8	45.0	26.8	54.3	70.6	38.1	32.5
1980	33.9	45.7	22.1	23.6	45.0	57.6	32.3	25.3	56.8	73.0	40.7	32.3	62.8	77.5	48.1	29.4	58.3	73.8	42.7	31.1	53.2	67.4	38.9	28.5
1981	43.2	56.4	29.9	26.5	44.3	55.6	33.1	22.5	57.4	72.2	42.6	29.6	61.6	76.0	47.2	28.8	59.1	73.4	44.7	28.7	54.1	69.1	39.0	30.1
1982	34.2	46.2	22.3	23.9	44.5	56.6	32.5	24.1	51.9	65.6	38.2	27.4	60.2	73.7	46.7	27.0	61.5	75.1	48.0	27.1	50.2	62.8	37.6	25.2
1983	28.8	40.2	17.4	22.8	41.7	53.9	29.5	24.4	51.9	66.0	37.8	28.2	61.0	75.1	47.0	28.1	61.1	73.1	49.0	24.1	54.1	70.6	37.7	32.9
1984	31.4	43.9	18.9	25.0	48.8	63.3	34.3	29.0	54.6	69.0	40.2	28.8	61.6	76.9	46.3	30.6	60.3	74.0	46.7	27.3	50.9	66.2	35.5	30.7
1985	41.0	54.2	27.7	26.5	47.8	62.9	32.7	30.2	52.8	67.3	38.6	28.7	60.6	74.0	47.3	26.7	59.5	76.8	42.1	34.7	46.9	61.8	32.1	29.7
1986	39.2	51.7	26.7	25.0	45.1	59.2	31.0	28.2	58.3	73.6	42.9	30.7	59.0	73.8	44.2	29.6	60.0	75.4	44.5	30.9	48.9	62.4	35.4	27.0
1987	41.8	56.7	26.9	29.8	48.7	62.2	35.3	26.9	56.4	71.3	41.4	29.9	61.1	76.9	45.3	31.6	57.7	73.0	42.4	30.6	53.6	69.5	37.7	31.8
1988	39.7	54.3	25.1	29.2	47.7	61.6	33.7	27.9	60.5	75.8	45.3	30.5	63.2	79.9	46.4	33.5	61.4	78.8	43.9	34.9	50.9	66.7	35.0	31.7
1989	40.4	54.3	26.5	27.8	48.3	63.6	33.0	30.6	54.0	70.0	37.9	32.1	63.7	79.9	47.5	32.4	58.6	74.9	42.3	32.6	52.1	69.0	35.2	33.8
1990	39.9	53.0	26.7	26.3	45.2	60.3	30.2	30.1	58.1	74.5	41.6	32.9	59.0	73.9	44.1	29.8	59.6	75.8	43.4	32.4	55.4	70.4	40.4	30.0
1991	36.0	48.9	23.1	25.8	47.5	62.5	32.4	30.1	55.9	71.2	40.5	30.7	60.5	75.7	45.4	30.3	60.2	74.8	45.5	29.3	52.7	67.8	37.5	30.3
1992																								
1993	35.0	47.9	22.1	25.8	47.5	61.8	33.2	28.6	52.2	65.7	38.7	27.0	57.2	72.8	41.5	31.3	57.1	71.7	42.5	29.2	49.8	64.3	35.3	29.0
1994	38.1	50.5	25.7	24.8	50.9	65.4	36.4	29.0	58.8	73.9	43.6	30.3	61.8	76.7	46.9	29.8	62.3	77.0	47.7	29.3	54.1	69.4	38.7	30.7
1995	34.8	46.9	22.7	24.2	41.2	52.0	30.4	21.6	52.3	66.4	38.1	28.3	58.6	72.4	44.8	27.6					50.7	63.6	37.7	25.9
1996	37.0	49.5	24.5	25.0	46.8	60.0	33.6	26.4	56.8	72.1	41.6	30.5	62.0	76.1	47.8	28.3	60.0	74.3	45.7	28.6	48.2	63.3	33.1	30.2
1997	31.5	44.5	18.6	25.9	46.4	61.0	31.7	29.3	56.9	71.1	42.8	28.3									54.0	66.7	41.3	25.4
1998									49.3	63.3	35.3	28.0	63.0	76.0	50.1	25.9					56.5	70.1	42.9	27.2
1999			21.2		43.3	56.5	30.1	26.4	53.6	68.4	38.8	29.6	61.6	74.8	48.4	26.4	59.0	71.8	46.2	25.6	48.3	63.1	33.6	29.5
2000	39.7	53.3	25.7	27.6					54.7	70.3	39.1	31.2	64.2	78.7	49.6	29.1	63.9	78.5	49.4	29.1	52.9	68.9	36.9	32.0
2001	37.9	50.2	25.6	24.6	48.3	62.5	33.6	28.9	56.7	72.2	41.2	31.0	64.4	78.3	50.6	27.7	63.6	77.7	49.4	28.3	56.0	70.4	41.6	28.8
Maximum:	43.2	56.7	29.9	29.8	50.9	65.4	36.4	30.6	60.5	75.8	45.3	32.9	64.4	79.9	50.6	33.5	63.9	78.8	49.4	34.9	56.5	70.6	42.9	33.8
Minimum:	28.8	40.2	17.4	22.8	41.2	52.0	29.5	21.6	49.3	63.3	35.3	27.0	57.2	72.4	41.5	25.9	57.1	71.7	41.7	24.1	46.9	61.8	32.1	25.2
Average:	**37.1**	**49.9**	**24.2**	**25.6**	**46.0**	**59.6**	**32.5**	**27.1**	**55.4**	**70.3**	**40.5**	**29.7**	**61.4**	**76.1**	**46.7**	**29.3**	**59.9**	**74.6**	**45.1**	**29.5**	**52.3**	**67.1**	**37.3**	**29.8**
Median:	37.9	50.2	25.3	25.0	46.4	60.3	32.5	27.9	55.6	70.7	40.6	29.9	61.6	76.0	46.9	29.4	59.6	74.3	44.7	29.2	52.8	67.8	37.7	30.2

Note: Maximum, minimum, average, and median values apply to the period 1972 through 2001.

Appendix 2.1.4.C. Temperature data summary - Laramie FAA Airport station

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	35.6	48.1	23.1	25.0	48.7	62.5	34.8	27.7	52.2	66.3	38.0	28.3	64.7	81.6	47.8	33.8	62.1	77.5	46.6	30.9	52.7	69.8	35.5	34.3
1952	39.3	53.0	25.6	27.4	48.9	62.8	34.9	27.9	61.8	78.8	44.8	34.0	63.6	80.3	46.9	33.4	62.9	78.8	46.9	31.9	56.1	74.4	37.7	36.7
1953	34.1	47.0	21.2	25.8	43.5	56.4	30.6	25.8	59.3	75.1	43.4	31.7	66.2	81.8	50.6	31.2	62.1	77.9	46.4	31.5	56.5	74.0	39.1	34.9
1954	42.5	56.5	28.5	28.0	48.1	63.0	33.2	29.8	57.9	74.2	41.6	32.6	67.8	83.9	51.8	32.1	62.4	79.0	45.7	33.3	56.5	72.5	40.6	31.9
1955	37.6	52.3	23.0	29.3	47.7	61.9	33.1	28.8	54.4	67.8	40.9	26.9					64.3	78.5	50.2	28.3	55.3	71.6	38.9	32.7
1956	37.4	50.4	24.0	26.4	50.7	64.0	37.4	26.6	61.8	78.5	45.1	33.4	62.2	77.8	46.6	31.2	59.4	74.9	43.9	31.0	56.0	74.2	37.9	36.3
1957	34.1	45.4	22.8	22.6	45.1	56.1	34.1	22.0	55.5	69.5	41.6	27.9	63.6	78.6	48.5	30.1	63.1	78.5	47.7	30.8	51.5	68.0	35.0	33.0
1958	35.0	46.4	23.5	22.9	52.0	67.0	36.9	30.1	58.2	75.0	41.3	33.7	61.4	77.4	45.5	31.9	64.2	80.9	47.5	33.4	54.8	71.8	37.8	34.0
1959	37.3	50.8	23.8	27.0	46.5	59.2	33.7	25.5	60.6	77.0	44.1	32.9	63.5	80.4	46.5	33.9	63.0	78.9	47.2	31.7	50.9	65.9	35.9	30.0
1960	40.8	54.6	27.0	27.6	48.3	63.0	33.6	29.4	59.3	74.8	43.8	31.0	64.4	80.6	48.2	32.4	62.7	79.5	45.9	33.6	57.0	72.9	41.1	31.8
1961	35.7	47.4	24.0	23.4	49.1	62.5	35.7	26.8	58.6	74.6	42.6	32.0	62.8	78.9	46.7	32.2	63.0	77.5	48.5	29.0	47.9	60.3	35.5	24.8
1962	41.0	55.7	26.3	29.4	49.6	63.7	35.5	28.2	55.6	71.0	40.2	30.8	61.7	78.6	44.7	33.9	62.1	80.4	43.8	36.6	54.3	71.0	37.5	33.5
1963	38.4	51.2	25.5	25.7	50.2	67.1	33.3	33.8	58.3	74.9	41.7	33.2	66.0	83.6	48.5	35.1	62.5	77.3	47.8	29.5	58.0	74.8	41.2	33.6
1964	35.3	47.0	23.5	23.5	48.6	63.1	34.1	29.0	55.3	70.3	40.2	30.1					60.5	76.9	44.0	32.9	53.1	70.1	36.1	34.0
1965	40.4	52.9	27.8	25.1	45.4	58.8	31.9	26.9	55.6	69.0	42.1	26.9	63.3	79.0	47.6	31.4	59.7	75.7	43.7	32.0	45.7	58.7	32.7	26.0
1966	35.9	51.2	20.5	30.7	49.8	67.5	32.1	35.4	57.0	72.8	41.2	31.6	67.7	84.7	50.8	33.9	60.9	77.5	44.4	33.1	54.5	70.4	38.5	31.9
1967	38.0	53.0	23.0	30.0	45.0	57.6	32.3	25.3	53.7	66.9	40.5	26.4	63.3	78.8	47.8	31.0	60.7	78.0	43.4	34.6	53.2	68.1	38.2	29.9
1968	31.1	43.4	18.8	24.6	44.5	58.4	30.5	27.9	56.9	73.7	40.1	33.6	63.0	78.8	47.2	31.6	59.1	74.5	43.7	30.8	50.8	67.9	33.6	34.3
1969	41.9	55.9	27.8	28.1	51.4	67.0	35.7	31.3	52.4	65.4	39.5	25.9	65.9	82.1	49.6	32.5	65.8	82.6	49.0	33.6	57.1	72.7	41.5	31.2
1970	32.9	43.9	21.8	22.1	49.1	64.4	33.7	30.7	57.1	71.7	42.4	29.3	65.1	80.3	49.8	30.5	65.7	81.9	49.6	32.3	50.3	65.0	35.5	29.5
1971	37.6	51.0	24.2	26.8	45.7	58.5	32.9	25.6	58.8	75.3	42.2	33.1	62.6	79.4	45.8	33.6	63.3	80.5	46.2	34.3	49.4	65.0	33.7	31.3
1972	38.8	52.6	25.0	27.6	47.5	62.0	32.9	29.1	59.2	73.4	45.0	28.4	61.8	77.6	46.0	31.6	61.3	76.9	45.7	31.2	53.5	67.9	39.1	28.8
1973	30.8	41.6	20.0	21.6	46.1	60.2	32.0	28.2	57.2	72.3	42.1	30.2	61.5	75.8	47.2	28.6	63.6	78.8	48.5	30.3	51.5	64.9	38.0	26.9
1974	36.4	48.6	24.2	24.4	49.3	65.2	33.5	31.7	58.2	74.8	41.6	33.2	63.6	79.8	47.5	32.3	59.2	76.8	41.6	35.2	49.1	66.1	32.1	34.0
1975	33.5	46.4	20.5	25.9	44.2	57.2	31.3	25.9	53.9	69.3	38.4	30.9	64.3	79.8	48.8	31.0	61.2	78.4	44.1	34.3	51.1	68.3	33.9	34.4
1976	39.1	52.1	26.0	26.1	47.4	62.6	32.1	30.5	56.2	72.8	39.7	33.1	66.0	82.6	49.5	33.1	61.4	78.1	44.6	33.5	53.1	70.1	36.2	33.9
1977	39.9	53.5	26.3	27.2	48.7	63.9	33.5	30.4	62.4	78.9	45.9	33.0	65.1	81.5	48.8	32.7	61.0	75.9	46.1	29.8	55.9	72.4	39.3	33.1
1978	40.1	53.1	27.1	26.0	45.4	58.5	32.3	26.2	57.7	74.6	40.8	33.8	65.3	83.1	47.4	35.7	60.8	78.2	43.3	34.9	54.3	72.1	36.5	35.6
1979	39.3	53.5	25.2	28.3	45.5	59.9	31.0	28.9	57.1	74.0	40.2	33.8	64.8	82.2	47.4	34.8	61.1	75.9	46.2	29.7	56.6	74.3	39.0	35.3
1980	36.3	50.2	22.3	27.9	47.0	60.4	33.7	26.7	60.1	78.3	41.8	36.5	66.4	83.0	49.8	33.2	61.7	78.6	44.8	33.8	55.5	71.9	39.1	32.8
1981	44.1	57.9	30.3	27.6	44.6	55.3	33.9	21.4	59.6	74.6	44.5	30.1	63.5	78.9	48.1	30.8	60.5	75.5	45.4	30.1	56.0	71.8	40.2	31.6
1982	36.1	51.8	20.4	31.4	46.1	58.9	33.3	25.6	54.4	69.6	39.2	30.4	62.3	79.9	44.6	35.3	64.9	80.1	49.7	30.4	52.1	64.8	39.3	25.5
1983	28.0	38.4	17.7	20.7	41.7	53.8	29.5	24.3	53.6	66.9	40.3	26.6	63.4	78.4	48.3	30.1	64.6	79.6	49.6	30.0	55.8	71.8	39.7	32.1
1984	31.0	41.9	20.1	21.8	50.3	65.5	35.0	30.5	56.0	72.2	39.8	32.4	64.7	81.1	48.4	32.7	62.9	77.5	48.4	29.1	50.6	65.5	35.7	29.8
1985	39.9	54.3	25.5	28.8	49.7	64.5	34.9	29.6	58.2	74.3	42.1	32.2	64.0	80.2	47.8	32.4	61.6	80.0	43.2	36.8	49.3	63.7	34.8	28.9
1986	39.2	51.6	26.8	24.8	45.8	60.0	31.7	28.3	60.1	75.4	44.9	30.5	61.9	77.3	46.5	30.8	61.7	77.5	45.9	31.6	50.7	64.1	37.2	26.9
1987	40.5	56.0	24.9	31.1	49.4	62.3	36.5	25.8	57.9	73.5	42.3	31.2	62.0	78.3	45.7	32.6	59.7	74.5	44.9	29.6	52.4	69.5	35.2	34.3
1988	40.4	55.3	25.5	29.8	48.0	63.0	33.1	29.9	63.4	79.3	47.5	31.8	65.1	81.6	48.6	33.0	62.0	78.9	45.2	33.7	52.5	68.4	36.6	31.8
1989	40.3	54.2	26.3	27.9	47.9	62.6	33.2	29.4	55.1	70.5	39.6	30.9	64.7	82.0	47.4	34.6	61.0	76.8	45.1	31.7	52.6	68.2	36.9	31.3
1990	39.0	52.5	25.4	27.1	45.0	60.1	30.0	30.1	59.2	76.5	41.9	34.6	61.2	75.0	47.4	27.6	60.7	76.6	44.8	31.8	56.2	70.5	41.8	28.7
1991	35.5	48.4	22.5	25.9	48.2	61.7	34.6	27.1	57.2	71.6	42.8	28.8	61.9	76.2	47.5	28.7	61.7	76.2	47.2	29.0	52.4	68.0	36.8	31.2
1992	44.0	58.0	29.9	28.1	50.0	63.8	36.3	27.5	55.4	69.2	41.6	27.6	59.8	73.8	45.8	28.0	59.7	74.2	45.2	29.0	54.8	70.6	39.0	31.6
1993	36.9	48.7	25.0	23.7	48.4	62.3	34.5	27.8	53.9	68.2	39.6	28.6	60.2	76.3	44.2	32.1	59.9	74.7	45.0	29.7	50.7	65.3	36.2	29.1
1994	38.3	51.6	25.2	26.4	51.1	65.9	36.3	29.6	60.7	78.4	43.0	35.4	63.2	79.7	46.6	33.1	63.6	79.8	47.3	32.5	54.3	71.3	37.3	34.0
1995	35.8	48.3	23.3	25.0	42.8	53.0	32.5	20.5	53.9	67.1	40.7	26.4	61.3	76.5	46.1	30.4	65.1	81.5	48.7	32.8	52.3	66.1	38.5	27.6
1996	37.8	50.6	25.0	25.6	48.4	62.1	34.7	27.4	58.6	74.8	42.3	32.5	64.6	80.6	48.6	32.0	61.6	78.8	44.4	34.4	51.2	66.0	36.3	29.7
1997	31.7	43.4	20.0	23.4	48.0	61.9	34.1	27.8	58.9	72.6	45.1	27.5	63.2	79.2	47.1	32.1	62.4	76.4	48.2	28.2	55.9	69.3	42.5	26.8
1998	37.0	50.5	23.4	27.1	49.3	64.5	34.1	30.4	52.7	66.4	39.0	27.4	65.5	80.2	50.9	29.3	62.8	78.0	47.7	30.3	59.2	75.0	43.4	31.6
1999	34.2	45.0	23.4	21.6	45.8	59.2	32.3	26.9	55.8	70.2	41.4	28.8	65.0	80.6	49.5	31.1	62.7	77.6	47.7	29.9	49.9	65.3	34.5	30.8
2000	41.8	56.4	27.2	29.2	50.9	65.2	36.5	28.7	57.6	73.8	41.3	32.5	66.1	83.3	49.0	34.3	65.5	81.5	49.5	32.0	53.1	69.2	37.0	32.2
2001	39.4	52.5	26.3	26.2	48.4	62.9	33.9	29.0	59.3	77.1	41.5	35.6	67.5	84.2	50.7	33.5	64.0	79.6	48.3	31.3	56.4	73.1	39.6	33.5
Maximum:	44.1	58.0	30.3	31.4	51.1	65.9	36.5	31.7	63.4	79.3	47.5	36.5	67.5	84.2	50.9	35.7	65.5	81.5	49.7	36.8	59.2	75.0	43.4	35.6
Minimum:	28.0	38.4	17.7	20.7	41.7	53.0	29.5	20.5	52.7	66.4	38.4	26.4	59.8	73.8	44.2	27.6	59.2	74.2	41.6	28.2	49.1	63.7	32.1	25.5
Average:	**37.5**	**50.6**	**24.4**	**26.3**	**47.4**	**61.3**	**33.4**	**27.8**	**57.5**	**73.0**	**41.9**	**31.2**	**63.7**	**79.6**	**47.7**	**31.9**	**62.0**	**77.8**	**46.2**	**31.6**	**53.3**	**68.9**	**37.7**	**31.1**
Median:	38.6	51.7	25.0	26.3	48.0	62.1	33.5	28.3	57.7	73.5	41.6	31.1	63.8	79.9	47.5	32.2	61.7	77.8	45.8	31.3	52.9	68.8	37.3	31.6

Note: Maximum, minimum, average, and median values apply to the period 1972 through 2001.

Appendix 2.1.4.C. Temperature data summary - Wheatland 4N station

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	42.0	56.2	27.9	28.3	55.4	68.7	42.1	26.6	58.2	72.2	44.1	28.1	71.5	88.0	54.9	33.1	68.0	85.4	50.6	34.8	57.6	74.4	40.8	33.6
1952	47.4	65.0	29.8	35.2	55.0	69.8	40.3	29.5	69.1	88.0	50.3	37.7	71.6	91.0	52.3	38.7	72.4	88.3	56.4	31.9	63.4	81.9	45.0	36.9
1953	41.3	54.8	27.8	27.0	51.9	65.4	38.5	26.9	68.2	84.8	51.7	33.1	75.0	92.5	57.4	35.1	72.0	88.8	55.3	33.5	64.8	83.3	46.2	37.1
1954	50.9	67.4	34.3	33.1	56.0	70.3	41.6	28.7	67.6	83.2	51.9	31.3	78.2	94.8	61.6	33.2	72.6	89.5	55.7	33.8	64.9	81.0	48.7	32.3
1955	48.7	64.1	33.3	30.8	58.3	73.0	43.5	29.5	61.0	73.8	48.2	25.6	73.9	90.7	57.0	33.7	75.0	90.0	60.1	29.9	64.1	81.3	46.9	34.4
1956	43.3	58.7	27.9	30.8	59.2	72.9	45.6	27.3	73.0	90.4	55.6	34.8	72.7	87.1	58.3	28.8	69.4	84.6	54.1	30.5	64.2	82.6	45.7	36.9
1957	42.1	53.2	30.9	22.3	53.2	63.8	42.7	21.1	63.9	78.5	49.3	29.2	73.4	89.5	57.2	32.3	70.7	85.7	55.6	30.1	58.2	75.1	41.3	33.8
1958	43.9	55.6	32.1	23.5	60.5	75.3	45.8	29.5	65.4	80.6	50.2	30.4	67.4	82.3	52.5	29.8	72.6	90.1	55.2	34.9	63.4	81.2	45.5	35.7
1959	46.3	59.6	33.0	26.6	54.5	66.7	42.2	24.5	68.7	85.3	52.1	33.2	70.8	88.7	52.9	35.8	71.8	89.0	54.6	34.4	58.9	74.2	43.5	30.7
1960	49.2	65.1	33.2	31.9	56.6	72.3	40.9	31.4	67.9	84.1	51.7	32.4	74.1	92.1	56.2	35.9	70.1	89.6	50.6	39.0	63.8	80.9	46.6	34.3
1961	44.8	58.8	30.7	28.1	55.5	68.7	42.4	26.3	66.6	82.1	51.2	30.9	72.6	89.5	55.6	33.9	73.6	90.2	56.9	33.3	56.4	71.2	41.7	29.5
1962	50.8	66.5	35.0	31.5	59.0	72.8	45.2	27.6	63.6	77.4	49.8	27.6	69.6	84.5	54.7	29.8	71.2	89.2	53.2	36.0	61.7	78.5	44.9	33.6
1963	47.2	61.3	33.1	28.2	58.8	75.1	42.5	32.6	68.1	83.9	52.4	31.5	75.2	92.9	57.5	35.4	72.3	87.9	56.7	31.2	66.0	82.9	49.1	33.8
1964	45.6	59.4	32.3	27.1	59.4	73.1	45.6	27.5	64.3	79.3	49.4	29.9	76.8	92.8	60.9	31.9	69.6	86.5	52.7	33.8	62.8	79.7	45.9	33.8
1965	50.7	63.5	37.8	25.7	55.8	68.9	42.6	26.3	64.1	77.1	51.1	26.0	71.8	86.9	56.7	30.2	68.4	84.3	52.5	31.8	52.1	65.8	38.3	27.5
1966	44.5	61.0	27.9	33.1	61.3	78.5	44.0	34.5	65.4	81.1	49.6	31.5	76.4	91.8	61.0	30.8	68.3	83.9	52.7	31.2	63.4	77.9	48.8	29.1
1967	47.3	62.6	32.0	30.6	50.8	63.1	38.5	24.6	60.0	72.2	47.9	24.3	69.2	84.7	53.7	31.0	67.9	86.2	49.7	36.5	61.6	78.8	44.4	34.4
1968	42.2	55.6	28.8	26.8	51.0	64.7	37.4	27.3	63.6	79.5	47.8	31.7	70.0	87.0	53.0	34.0	65.7	83.1	48.2	34.9	57.0	76.0	38.0	38.0
1969	50.5	66.0	35.0	31.0	58.7	74.8	42.7	32.1	59.8	73.0	46.6	26.4	72.0	89.3	54.8	34.5	71.8	90.0	53.6	36.4	63.4	81.8	45.1	36.7
1970	40.0	52.8	27.1	25.7	56.4	72.7	40.2	32.5	64.3	80.0	48.7	31.3	72.0	88.9	55.1	33.8	71.7	89.6	53.7	35.9	57.4	75.2	39.5	35.7
1971	44.7	59.2	30.1	29.1	52.9	66.0	39.8	26.2	65.8	80.9	50.6	30.3	68.7	85.0	52.4	32.6	70.7	89.3	52.1	37.2	56.0	71.7	40.3	31.4
1972	45.7	58.7	32.6	26.1	54.6	69.4	39.8	29.6	66.4	82.6	50.2	32.4	67.8	84.5	51.1	33.4	68.6	83.7	53.5	30.2	59.4	76.4	42.3	34.1
1973	40.8	52.9	28.6	24.3	53.0	68.9	37.0	31.9	64.7	81.1	48.3	32.8	69.5	84.9	54.1	30.8	70.6	88.2	53.0	35.2	56.7	69.6	43.8	25.8
1974	46.9	61.3	32.6	28.7	56.1	72.7	39.4	33.3	66.1	83.4	48.7	34.7	72.7	91.1	54.3	36.8	65.5	82.8	48.3	34.5	55.5	74.4	36.6	37.8
1975	42.8	58.2	27.3	30.9	54.2	69.2	39.2	30.0	62.0	78.1	46.0	32.1	73.0	90.1	56.0	34.1	69.0	86.9	51.2	35.7	58.0	76.0	39.9	36.1
1976	47.1	61.0	33.2	27.8	55.9	71.6	40.2	31.4	63.8	80.2	47.3	32.9	73.1	89.6	56.6	33.0	68.3	86.0	50.7	35.3	59.4	78.0	40.9	37.1
1977	49.1	65.0	33.2	31.8	58.5	73.9	43.0	30.9	70.0	86.1	53.9	32.2	73.5	89.3	57.7	31.6	68.0	84.3	51.8	32.5	63.5	82.5	44.4	38.1
1978	47.7	61.3	34.2	27.1	53.5	66.9	40.0	26.9	65.3	82.8	47.7	35.1	72.5	90.0	55.1	34.9	67.0	84.1	49.9	34.2	61.6	80.0	43.1	36.9
1979	47.0	63.7	30.4	33.3	52.9	67.5	38.2	29.3	64.8	81.1	48.4	32.7	73.2	90.8	55.6	35.2	68.9	84.9	52.9	32.0	62.8	83.0	42.6	40.4
1980	46.4	61.3	31.5	29.8	54.9	69.5	40.4	29.1	67.5	87.8	47.1	40.7	74.5	93.1	55.9	37.2	68.5	85.5	51.4	34.1	61.3	80.2	42.3	37.9
1981	52.7	68.7	36.6	32.1	53.6	66.1	41.1	25.0	67.4	85.9	48.8	37.1	73.4	90.6	56.3	34.3	68.5	86.2	50.8	35.4	63.0	83.0	43.0	40.0
1982	44.2	61.5	27.0	34.5	54.0	67.7	40.4	27.3	62.0	77.0	47.1	29.9	71.8	90.5	53.0	37.5	73.0	89.8	56.3	33.5	60.1	74.7	45.4	29.3
1983	40.2	52.3	28.0	24.3	50.9	64.9	36.8	28.1	63.3	77.3	49.4	27.9	72.9	89.7	56.0	33.7	75.4	93.0	57.7	35.3	63.3	83.1	43.5	39.6
1984	40.9	53.6	28.2	25.4	57.6	75.3	40.0	35.3	65.6	83.0	48.2	34.8	73.0	90.9	55.1	35.8	71.9	88.3	55.6	32.7	57.9	74.6	41.2	33.4
1985	49.4	66.6	32.2	34.4	59.8	76.6	43.0	33.6	65.0	82.5	47.4	35.1	72.5	90.2	54.7	35.5	68.9	88.2	49.6	38.6	56.7	72.1	41.3	30.8
1986	47.5	61.8	33.3	28.5	55.1	72.4	37.8	34.6	69.1	85.3	52.8	32.5	71.0	88.6	53.3	35.3	70.8	88.5	53.0	35.5	59.1	72.7	45.4	27.3
1987	50.9	69.4	32.3	37.1	60.2	73.8	46.6	27.2	66.6	84.1	49.0	35.1	72.5	89.7	55.4	34.3	68.8	85.2	52.3	32.9	61.6	80.5	42.6	37.9
1988	48.9	66.3	31.4	34.9	57.9	74.8	41.0	33.8	73.5	89.5	57.5	32.0	73.1	89.5	56.7	32.8	71.6	89.8	53.5	36.3	60.4	78.2	42.5	35.7
1989	48.9	64.8	33.0	31.8	57.2	73.4	41.0	32.4	64.6	81.1	48.1	33.0	74.9	92.8	57.1	35.7	70.8	87.8	53.7	34.1	61.1	78.1	44.1	34.0
1990	47.5	62.3	32.7	29.6	54.1	69.6	38.6	31.0	68.4	85.7	51.0	34.7	70.4	85.7	55.1	30.6	69.1	85.7	52.5	33.2	65.0	82.1	47.9	34.2
1991	46.0	59.2	32.7	26.5	56.7	69.5	43.9	25.6	66.2	80.1	52.3	27.8	70.9	87.1	54.8	32.3	70.9	86.6	55.3	31.3	61.2	78.1	44.3	33.8
1992	50.9	68.2	33.7	34.5	59.4	75.3	43.5	31.8	65.2	80.2	50.2	30.0	67.7	82.6	52.8	29.8	68.1	84.3	51.9	32.4	63.4	82.3	44.4	37.9
1993	46.8	60.6	33.0	27.6	57.2	72.1	42.3	29.8	61.4	75.8	46.9	28.9	68.7	85.2	52.3	32.9	69.4	85.8	52.9	32.9	58.3	74.2	42.4	31.8
1994	47.9	64.1	31.6	32.5	61.5	77.7	45.2	32.5	69.2	86.5	51.9	34.6	70.2	86.5	53.9	32.6	72.1	90.0	54.3	35.7	63.3	81.4	45.1	36.3
1995	44.7	58.2	31.1	27.1	49.9	60.4	39.4	21.0	62.0	75.6	48.3	27.3	70.4	86.7	54.0	32.7	73.6	91.7	55.5	36.2	60.5	76.0	45.0	31.0
1996	48.7	64.6	32.8	31.8	54.9	68.7	41.1	27.6	67.8	84.8	50.8	34.0	72.7	88.8	56.5	32.3	70.9	88.7	53.0	35.7	60.4	78.2	42.6	35.6
1997	41.2	55.0	27.4	27.6	56.4	72.4	40.4	32.0	67.3	82.0	52.6	29.4	72.3	88.8	55.9	32.9	70.5	85.8	55.1	30.7	64.1	78.9	49.4	29.5
1998	46.2	61.3	31.1	30.2	57.6	72.9	42.3	30.6	61.6	75.9	47.3	28.6	74.5	90.3	58.7	31.6	71.2	87.5	54.9	32.6	67.0	84.7	49.2	35.5
1999	43.4	55.7	31.0	24.7	54.3	68.6	40.5	28.1	64.1	78.7	49.3	29.4	73.8	90.1	56.8	33.3	72.8	88.6	57.0	31.6	57.7	74.1	41.3	32.8
2000	48.1	64.0	32.2	31.8	58.7	75.0	42.3	32.7	66.0	84.2	47.7	36.5	75.0	93.6	56.4	37.2	75.0	91.9	57.3	34.6	61.7	79.2	44.1	35.1
2001	47.8	61.2	34.6	26.6	56.4	71.1	41.7	29.4	69.7	87.0	52.4	34.6	76.3	94.9	57.6	37.3	73.6	93.7	53.5	40.2	63.1	82.1	44.1	38.0
Maximum:	52.7	69.4	36.6	37.1	61.5	77.7	46.6	35.3	73.5	89.5	57.5	40.7	76.3	94.9	58.7	37.5	75.4	93.7	57.7	40.2	67.0	84.7	49.4	40.4
Minimum:	40.2	52.3	27.0	24.3	49.9	60.4	36.8	21.0	61.4	75.6	46.0	27.3	67.7	82.6	51.1	29.8	65.5	82.8	48.3	30.2	55.5	69.6	36.6	25.8
Average:	**46.5**	**61.4**	**31.7**	**29.8**	**55.9**	**70.9**	**40.9**	**30.1**	**65.9**	**82.2**	**49.6**	**32.6**	**72.3**	**89.2**	**55.3**	**33.9**	**70.4**	**87.5**	**53.3**	**34.2**	**60.9**	**78.3**	**43.5**	**34.8**
Median:	47.1	61.3	32.3	29.7	56.0	71.4	40.5	30.3	65.8	82.6	48.8	32.8	72.7	89.7	55.5	33.6	70.6	87.2	53.0	34.2	61.2	78.2	43.3	35.6

Note: Maximum, minimum, average, and median values apply to the period 1972 through 2001.

Appendix 2.1.4.C. Temperature data summary - LaGrange station

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	40.7	56.3	25.1	31.2	54.7	69.1	40.3	28.8	57.6	70.9	44.2	26.7	70.4	85.8	55.0	30.8	68.4	85.0	51.8	33.2	56.8	72.0	41.5	30.5
1952	46.2	63.1	29.3	33.8	54.7	69.1	40.3	28.8	69.1	86.8	51.5	35.3	70.5	88.7	52.3	36.4	71.2	88.1	54.3	33.8	63.0	83.3	42.8	40.5
1953	39.2	54.5	23.9	30.6	51.1	65.9	36.3	29.6	66.7	83.6	49.7	33.9	72.5	89.0	56.0	33.0	69.9	86.5	53.3	33.2	62.2	81.9	42.5	39.4
1954	49.5	67.0	32.0	35.0	54.2	68.7	39.6	29.1	65.5	81.9	49.0	32.9	75.7	93.3	58.1	35.2	70.4	87.2	53.7	33.5	63.2	80.7	45.7	35.0
1955	45.2	62.4	28.0	34.4	56.9	72.4	41.5	30.9	61.1	74.0	48.2	25.8	72.8	90.1	55.5	34.6	72.8	88.1	57.5	30.6	61.4	78.4	44.4	34.0
1956	41.9	58.2	25.6	32.6	58.0	73.0	43.1	29.9	70.6	88.3	52.8	35.5	70.9	86.6	55.1	31.5	67.5	83.4	51.6	31.8	62.2	82.0	42.4	39.6
1957	41.6	53.2	30.0	23.2	52.2	64.1	40.3	23.8	63.7	78.8	48.5	30.3	72.4	89.1	55.6	33.5	70.7	85.3	56.1	29.2	57.2	74.4	40.0	34.4
1958	42.4	55.2	29.5	25.7	60.1	75.3	44.8	30.5	65.2	80.4	50.0	30.4	67.2	82.0	52.3	29.7	71.8	89.8	53.8	36.0	62.3	80.2	44.4	35.8
1959	44.6	59.2	29.9	29.3	53.5	67.0	40.1	26.9	68.9	86.0	51.8	34.2	71.3	90.0	52.6	37.4	72.2	88.5	55.8	32.7	58.3	73.7	42.9	30.8
1960	47.9	63.1	32.6	30.5	56.1	72.2	40.1	32.1	65.4	81.0	49.8	31.2	73.0	91.1	54.9	36.2	71.2	89.4	53.0	36.4	62.0	79.2	44.7	34.5
1961	43.3	57.5	29.0	28.5	54.1	68.1	40.1	28.0	65.8	82.5	49.0	33.5	71.7	88.9	54.5	34.4	72.5	89.3	55.7	33.6	55.6	70.4	40.8	29.6
1962	49.1	65.8	32.3	33.5	57.8	73.5	42.1	31.4	63.2	77.5	48.9	28.6	69.0	84.8	53.3	31.5	69.8	88.9	50.8	38.1	60.7	78.8	42.7	36.1
1963	46.8	61.6	32.0	29.6	57.8	75.0	40.5	34.5	66.9	83.0	50.8	32.2	74.9	92.1	57.8	34.3	72.0	87.7	56.2	31.5	65.6	82.5	48.7	33.8
1964	44.0	57.5	30.5	27.0	56.9	71.8	42.0	29.8	64.3	80.4	48.2	32.2	76.4	94.4	58.3	36.1	68.9	86.2	51.7	34.5	59.9	79.1	40.7	38.4
1965	48.5	63.6	33.3	30.3	55.2	69.7	40.7	29.0	63.4	76.2	50.6	25.6	71.2	86.5	56.0	30.5	67.7	85.7	49.7	36.0	53.2	67.2	39.2	28.0
1966	41.9	58.2	25.6	32.6	58.2	77.2	39.2	38.0	65.2	81.5	48.9	32.6	76.6	93.3	59.8	33.5	68.5	85.2	51.7	33.5	61.9	77.8	46.0	31.8
1967	47.1	63.0	31.1	31.9	51.5	63.6	39.4	24.2	61.4	74.3	48.4	25.9	70.8	86.9	54.8	32.1	68.6	86.7	50.5	36.2	61.9	78.5	45.2	33.3
1968	41.0	55.9	26.1	29.8	51.0	65.3	36.8	28.5	64.7	81.0	48.3	32.7	70.3	88.0	52.5	35.5	66.1	82.7	49.5	33.2	57.4	75.9	38.8	37.1
1969	49.1	63.9	34.4	29.5	56.9	73.9	40.0	33.9	57.9	72.2	43.6	28.6	72.2	91.2	53.2	38.0	73.1	93.4	52.8	40.6	62.2	82.1	42.2	39.9
1970	39.7	52.6	26.7	25.9	55.6	72.8	38.4	34.4	62.6	78.6	46.7	31.9	72.7	89.6	55.9	33.7	73.2	90.8	55.6	35.2	57.5	74.6	40.3	34.3
1971	44.7	59.3	30.2	29.1	52.5	66.1	38.8	27.3	66.3	82.3	50.3	32.0	68.8	85.5	52.1	33.4	72.3	91.3	53.2	38.1	56.0	71.3	40.6	30.7
1972	44.4	58.3	30.6	27.7	54.1	69.4	38.9	30.5	66.0	81.8	50.3	31.5	68.9	85.4	52.3	33.1	68.5	84.9	52.2	32.7	58.9	77.1	40.6	36.5
1973	39.7	52.2	27.3	24.9	51.5	68.1	35.0	33.1	65.1	82.3	47.9	34.4	69.5	85.7	53.3	32.4	70.7	89.5	52.0	37.5	55.5	69.6	41.4	28.2
1974	44.3	58.3	30.4	27.9	55.9	73.4	38.4	35.0	66.8	84.6	48.9	35.7	73.0	92.0	54.1	37.9	66.0	84.2	47.8	36.4	54.1	72.8	35.3	37.5
1975	39.6	55.5	23.7	31.8	51.8	66.2	37.2	29.0	61.6	78.9	44.4	34.5	72.9	91.7	54.1	37.6	69.2	89.3	49.1	40.2	54.9	73.6	36.2	37.4
1976	42.3	54.9	29.7	25.2	50.3	64.7	35.8	28.9	59.4	75.0	43.7	31.3	70.6	88.1	53.2	34.9	65.4	83.3	47.5	35.8	56.9	73.9	39.5	34.4
1977	44.4	58.4	30.4	28.0	55.0	69.8	40.2	29.6	68.0	83.2	52.8	30.4	71.4	87.1	55.8	31.3	68.0	86.2	49.7	36.5	62.5	82.0	43.0	39.0
1978	46.8	60.5	33.1	27.4	51.9	65.6	38.1	27.5	63.9	81.6	45.8	35.8	72.0	90.4	53.7	36.7	67.1	85.7	48.5	37.2	61.7	81.5	41.8	39.7
1979	50.0	63.9	36.0	27.9	53.0	67.9	37.9	30.0	63.9	80.7	47.1	33.5	72.0	89.9	54.2	35.7	68.3	83.0	53.6	29.4	62.5	81.2	43.8	37.4
1980	44.6	60.1	30.6	28.1	53.7	67.6	39.7	27.9	63.4	85.5	46.8	33.1	72.2	91.1	53.3	37.8	65.9	85.4	46.4	39.0	60.1	78.8	41.5	37.3
1981	51.4	67.3	35.4	31.9	52.8	67.1	38.3	28.8	65.3	82.7	47.8	34.9	71.4	88.2	54.6	33.6	68.2	86.0	50.3	35.7	62.2	81.1	43.2	35.7
1982	42.8	60.5	25.1	35.4	53.4	68.9	37.9	31.0	59.8	74.9	44.7	30.2	70.2	88.6	51.7	36.9	70.9	87.4	54.3	33.1	58.9	74.5	43.3	31.2
1983	39.3	52.9	25.7	27.2	50.1	65.9	34.3	31.6	60.8	75.3	46.3	29.0	71.0	89.3	52.8	36.5	74.0	90.7	57.2	33.5	60.1	79.9	40.2	39.7
1984	38.9	51.6	26.1	25.5	56.5	73.7	39.2	34.5	63.0	80.3	45.8	34.5	71.3	88.4	54.1	34.3	70.3	87.5	53.0	34.5	54.9	72.2	37.6	34.6
1985	49.3	65.9	32.7	33.2	57.9	75.2	40.5	34.7	63.6	81.3	45.9	35.4	72.1	89.5	54.6	34.9	67.8	87.3	48.3	39.0	55.2	71.8	38.6	33.2
1986	45.2	59.9	30.4	29.5	51.7	69.0	34.5	34.5	66.6	84.5	48.3	36.2	69.4	88.3	50.5	37.8	68.5	86.7	50.4	36.3	56.0	71.5	40.5	31.0
1987	48.1	67.0	28.8	38.2	58.3	74.0	42.6	31.4	66.6	83.5	49.8	33.7	72.0	90.5	53.5	37.0	69.0	85.8	52.3	33.5	59.6	81.6	37.5	44.1
1988	47.4	66.3	28.5	37.8	54.9	71.6	38.2	33.3	71.3	90.3	52.4	37.9	72.6	89.7	55.5	34.2	72.0	90.0	54.1	35.9	60.4	78.2	42.6	35.6
1989	47.7	64.3	31.1	33.2	56.6	73.6	39.5	34.1	64.1	80.2	47.9	32.3	73.7	91.5	56.0	35.5	69.0	85.2	52.8	32.4	60.0	77.1	42.8	34.3
1990	47.0	61.7	32.2	29.5	53.5	68.0	39.0	29.0	68.0	85.1	51.0	34.1	68.6	84.0	53.3	30.7	68.9	86.3	51.6	34.7	64.4	81.4	47.4	34.0
1991	45.7	59.9	31.5	28.4	57.5	72.9	42.1	30.8	66.3	81.0	51.6	29.4	70.5	87.2	53.8	33.4	71.4	88.3	54.6	33.7	61.0	77.2	44.8	32.4
1992	50.3	67.9	32.7	35.2	59.4	76.8	42.1	34.7	64.9	80.6	49.2	31.4	68.2	84.5	52.0	32.5	67.0	83.1	50.9	32.2	63.3	81.7	45.0	36.7
1993	46.3	59.5	33.0	26.5	57.5	72.8	42.2	30.6	62.5	77.5	47.6	29.9	69.4	85.0	53.7	31.3	68.8	84.2	53.4	30.8	57.8	74.1	41.5	32.6
1994	48.0	63.2	32.8	30.4	61.0	78.4	43.6	34.8	68.8	86.5	51.1	35.4	70.3	86.6	53.9	32.7	71.5	88.5	54.4	34.1	63.2	81.4	45.0	36.4
1995	43.3	57.4	29.1	28.3	50.1	60.7	39.5	21.2	62.5	77.1	47.8	29.3	70.6	87.9	53.4	34.5	74.6	93.2	55.9	37.3	60.6	76.1	45.0	31.1
1996	48.6	64.1	33.0	31.1	55.7	68.2	43.2	25.0	67.7	84.2	51.1	33.1	72.6	88.8	56.5	32.3	70.7	86.3	55.0	31.3	60.3	75.9	44.6	31.3
1997	41.3	54.7	27.9	26.8	56.6	72.4	40.8	31.6	66.8	81.1	52.4	28.7	71.5	88.0	55.4	32.6	69.1	83.7	54.5	29.2	63.2	77.5	48.8	28.7
1998	46.3	62.1	30.5	31.6	58.0	74.1	41.9	32.2	61.1	76.4	45.7	30.7	73.1	88.1	58.1	30.0	65.9	82.1	49.6	32.5	61.1	78.1	44.0	34.1
1999	44.3	57.6	31.0	26.6	55.8	70.3	41.2	29.1	64.7	80.5	48.8	31.7	73.8	90.3	57.2	33.1	71.9	87.7	56.0	31.7	59.1	75.8	42.3	33.5
2000	49.2	66.7	31.7	35.0	59.9	76.5	43.3	33.2	66.2	83.4	49.0	34.4	74.6	91.8	57.5	34.3	74.3	91.0	57.6	33.4	62.8	79.3	46.3	33.0
2001	48.8	62.2	35.3	26.9	56.6	71.2	42.1	29.1	67.5	84.5	50.4	34.1	75.5	91.0	60.1	30.9	72.5	89.2	55.9	33.3	64.4	80.8	48.0	32.8
Maximum:	51.4	67.9	36.0	38.2	61.0	78.4	43.6	35.0	71.3	90.3	52.8	37.9	75.5	92.0	60.1	37.9	74.6	93.2	57.6	40.2	64.4	82.0	48.8	44.1
Minimum:	38.9	51.6	23.7	24.9	50.1	60.7	34.3	21.2	59.4	74.9	43.7	28.7	68.2	84.0	50.5	30.0	65.4	82.1	46.4	29.2	54.1	69.6	35.3	28.2
Average:	**45.5**	**60.5**	**30.5**	**29.9**	**55.0**	**70.5**	**39.6**	**30.9**	**64.9**	**81.5**	**48.4**	**32.9**	**71.5**	**88.6**	**54.4**	**34.2**	**69.5**	**86.7**	**52.3**	**34.4**	**59.9**	**77.3**	**42.4**	**34.8**
Median:	46.0	60.3	30.6	28.4	55.4	70.1	39.5	30.9	65.0	81.5	48.1	33.3	71.5	88.5	54.0	34.3	69.0	86.3	52.6	33.9	60.2	77.4	42.7	34.4

Note: Maximum, minimum, average, and median values apply to the period 1972 through 2001.

Appendix 2.1.4.C. Temperature data summary - Cheyenne WSFO AP station

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	37.3	48.7	26.0	22.7	51.2	62.9	39.4	23.5	54.6	66.4	42.8	23.6	66.8	80.5	53.1	27.4	65.0	78.0	52.1	25.9	54.6	69.5	39.7	29.8
1952	42.7	56.0	29.4	26.6	51.6	64.0	39.3	24.7	65.6	80.5	50.8	29.7	66.8	81.2	52.4	28.8	67.4	81.5	53.3	28.2	60.7	76.5	45.0	31.5
1953	36.6	48.5	24.7	23.8	47.7	59.3	36.1	23.2	63.3	76.8	49.8	27.0	69.0	82.6	55.4	27.2	66.6	80.2	52.9	27.3	60.8	76.8	44.8	32.0
1954	46.4	60.5	32.3	28.2	50.6	62.9	38.4	24.5	62.2	76.5	47.9	28.6	71.9	86.2	57.5	28.7	68.2	82.4	54.0	28.4	61.4	75.9	46.8	29.1
1955	42.8	57.3	28.3	29.0	53.1	66.5	39.8	26.7	58.0	69.9	46.2	23.7	70.6	85.5	55.6	29.9	69.1	81.7	56.5	25.2	58.7	72.3	45.1	27.2
1956	39.5	51.9	27.1	24.8	54.7	67.0	42.5	24.5	67.2	82.8	51.6	31.2	67.5	81.2	53.7	27.5	64.7	78.4	51.0	27.4	61.0	77.6	44.5	33.1
1957	36.9	47.1	26.6	20.5	48.0	57.8	38.3	19.5	60.4	73.2	47.5	25.7	69.0	83.2	54.8	28.4	67.4	80.2	54.5	25.7	55.3	69.3	41.4	27.9
1958	38.9	49.4	28.5	20.9	56.9	69.9	43.8	26.1	62.8	76.5	49.1	27.4	64.5	77.7	51.3	26.4	68.7	82.9	54.4	28.5	58.6	73.4	43.7	29.7
1959	39.3	51.7	26.8	24.9	50.5	61.7	39.4	22.3	65.3	80.3	50.4	29.9	68.2	83.9	52.5	31.4	69.0	83.1	55.0	28.1	55.7	68.9	42.5	26.4
1960	46.7	60.1	33.4	26.7	55.7	69.7	41.7	28.0	64.4	77.9	50.9	27.0	70.7	85.9	55.6	30.3	68.7	84.3	53.0	31.3	61.2	75.6	46.7	28.9
1961	40.7	53.2	28.2	25.0	52.8	64.2	41.3	22.9	64.8	77.8	51.7	26.1	69.1	83.5	54.7	28.8	68.0	81.3	54.8	26.5	51.4	64.5	38.3	26.2
1962	45.6	59.5	31.7	27.8	55.1	68.6	41.6	27.0	59.9	72.7	47.0	25.7	65.6	79.2	52.0	27.2	67.2	83.1	51.4	31.7	58.9	74.1	43.7	30.4
1963	43.7	56.3	31.0	25.3	55.8	71.0	40.6	30.4	64.0	78.2	49.8	28.4	72.6	88.2	57.1	31.1	68.3	81.0	55.6	25.4	63.1	76.7	49.5	27.2
1964	40.8	51.5	30.0	21.5	54.6	67.3	41.9	25.4	60.5	74.0	46.9	27.1	70.9	86.1	55.6	30.5	64.3	78.9	49.7	29.2	56.9	72.1	41.7	30.4
1965	45.7	57.8	33.6	24.2	50.7	63.3	38.2	25.1	59.3	71.0	47.6	23.4	68.1	82.2	54.1	28.1	64.7	78.7	50.7	28.0	49.6	60.8	38.4	22.4
1966	39.5	53.5	25.6	27.9	55.6	71.4	39.8	31.6	61.4	74.8	48.1	26.7	74.4	89.5	59.4	30.1	66.2	80.6	51.8	28.8	59.9	73.0	46.7	26.3
1967	44.1	57.2	31.0	26.2	49.1	60.1	38.1	22.0	57.7	68.6	46.7	21.9	67.3	80.5	54.1	26.4	66.0	80.5	51.5	29.0	58.4	71.4	45.3	26.1
1968	38.9	49.5	28.2	21.3	49.2	60.9	37.4	23.5	62.6	77.0	48.2	28.8	68.1	82.5	53.8	28.7	64.5	78.8	50.2	28.6	57.6	73.1	42.1	31.0
1969	48.1	61.6	34.6	27.0	55.6	68.9	42.4	26.5	57.0	68.5	45.4	23.1	71.4	86.5	56.4	30.1	70.6	85.9	55.4	30.5	61.2	75.7	46.7	29.0
1970	37.8	49.2	26.4	22.8	54.3	68.1	40.4	27.7	60.9	74.3	47.4	26.9	69.5	83.9	55.0	28.9	70.7	85.3	56.1	29.2	55.0	69.4	40.6	28.8
1971	41.0	53.0	28.9	24.1	49.2	60.5	37.9	22.6	63.4	77.7	49.1	28.6	65.5	80.0	50.9	29.1	68.7	84.0	53.4	30.6	53.1	65.9	40.2	25.7
1972	42.5	54.7	30.2	24.5	51.2	63.8	38.6	25.2	63.1	75.9	50.4	25.5	64.3	78.0	50.5	27.5	64.6	77.9	51.3	26.6	56.6	69.6	43.5	26.1
1973	37.3	46.3	28.2	18.1	51.4	64.4	38.4	26.0	62.9	76.9	48.9	28.0	65.8	78.2	53.4	24.8	68.4	81.6	55.1	26.5	54.1	65.0	43.1	21.9
1974	43.3	54.4	32.2	22.2	55.0	68.7	41.3	27.4	64.0	76.2	51.9	24.3	70.1	83.5	56.7	26.8	65.2	78.6	51.8	26.8	55.2	68.2	42.3	25.9
1975	37.5	49.6	25.3	24.3	48.4	60.2	36.6	23.6	57.9	71.3	44.5	26.8	67.3	80.8	53.8	27.0	66.3	81.3	51.3	30.0	56.0	70.6	41.3	29.3
1976	42.7	54.3	31.1	23.2	51.1	63.5	38.7	24.8	59.7	73.4	46.0	27.4	69.2	83.3	55.1	28.2	65.0	78.7	51.3	27.4	57.7	71.1	44.3	26.8
1977	44.7	56.6	32.7	23.9	53.4	66.3	40.5	25.8	65.2	78.4	52.0	26.4	68.2	81.5	54.8	26.7	63.5	75.5	51.5	24.0	60.6	75.9	45.4	30.5
1978	43.9	55.8	32.0	23.8	49.0	60.4	37.5	22.9	61.0	75.3	46.7	28.6	68.7	83.5	53.9	29.6	64.3	78.5	50.1	28.4	59.5	74.3	44.8	29.5
1979	44.9	57.9	31.8	26.1	49.9	60.7	39.0	21.7	61.5	74.5	48.5	26.0	69.9	84.4	55.4	29.0	65.9	78.6	53.2	25.4	62.8	78.1	47.6	30.5
1980	42.3	54.0	30.5	23.5	51.1	62.1	40.2	21.9	65.5	81.4	49.5	31.9	71.4	85.8	56.9	28.9	66.4	80.8	52.1	28.7	60.4	75.8	44.9	30.9
1981	50.1	64.1	36.0	28.1	50.5	60.6	40.3	20.3	63.7	77.6	49.7	27.9	69.0	81.8	56.1	25.7	65.2	77.8	52.6	25.2	61.2	75.2	47.2	28.0
1982	41.8	56.2	27.4	28.8	50.5	62.5	38.4	24.1	57.5	69.6	45.4	24.2	67.7	80.9	54.5	26.4	69.0	81.8	56.3	25.5	56.6	68.4	44.9	23.5
1983	34.8	45.2	24.4	20.8	47.4	58.6	36.1	22.5	57.3	68.7	45.9	22.8	67.8	81.5	54.0	27.5	70.2	84.0	56.4	27.6	58.9	74.8	43.1	31.7
1984	35.7	45.8	25.6	20.2	53.6	67.4	39.8	27.6	59.4	72.5	46.3	26.2	68.4	82.5	54.2	28.3	66.6	79.3	53.9	25.4	52.9	66.4	39.5	26.9
1985	45.5	58.3	32.8	25.5	54.3	68.2	40.4	27.8	61.1	76.1	46.0	30.1	69.3	82.3	56.3	26.0	66.7	81.8	51.7	30.1	52.8	65.2	40.4	24.8
1986	43.9	55.3	32.4	22.9	50.6	63.5	37.7	25.8	64.5	77.8	51.1	26.7	68.5	83.3	53.6	29.7	67.0	81.0	53.0	28.0	55.3	66.9	43.7	23.2
1987	46.7	61.2	32.2	29.0	54.5	65.8	43.1	22.7	63.3	76.6	49.9	26.7	69.2	83.5	54.9	28.6	64.9	78.1	51.7	26.4	57.9	73.1	42.8	30.3
1988	44.4	59.1	29.7	29.4	53.2	66.4	40.1	26.3	67.4	81.1	53.7	27.4	69.6	84.5	54.8	29.7	68.7	83.1	54.3	28.8	57.5	71.4	43.5	27.9
1989	44.3	57.0	31.5	25.5	54.2	67.7	40.8	26.9	60.3	72.9	47.6	25.3	70.6	85.6	55.6	30.0	67.0	80.5	53.4	27.1	57.5	71.3	43.7	27.6
1990	42.8	55.0	30.5	24.5	49.3	62.2	36.3	25.9	64.1	78.8	49.4	29.4	65.0	77.4	52.6	24.8	66.4	80.1	52.6	27.5	62.2	75.7	48.6	27.1
1991	41.0	52.5	29.6	22.9	52.4	64.5	40.3	24.2	62.5	74.8	50.2	24.6	67.7	81.5	53.9	27.6	67.6	80.5	54.8	25.7	58.0	71.3	44.6	26.7
1992	48.6	62.6	34.5	28.1	55.0	68.5	41.5	27.0	60.8	73.8	47.8	26.0	64.6	77.6	51.6	26.0	63.8	76.7	50.9	25.8	60.0	74.9	45.0	29.9
1993	42.1	53.2	30.9	22.3	53.4	65.5	41.3	24.2	58.7	71.6	45.8	25.8	66.1	80.1	52.1	28.0	64.8	77.5	52.1	25.4	54.2	66.7	41.8	24.9
1994	43.3	55.3	31.3	24.0	56.8	70.1	43.6	26.5	66.3	81.4	51.2	30.2	68.0	82.5	53.5	29.0	69.3	83.4	55.3	28.1	61.7	77.0	46.4	30.6
1995	39.5	50.9	28.1	22.8	45.7	54.6	36.8	17.8	59.0	71.0	47.0	24.0	67.8	81.9	53.7	28.2	71.6	87.0	56.2	30.8	57.1	69.5	44.6	24.9
1996	42.7	55.0	30.4	24.6	51.6	63.2	40.1	23.1	63.5	77.4	49.7	27.7	68.3	81.5	55.0	26.5	66.3	80.6	52.0	28.6	56.6	69.3	43.9	25.4
1997	35.8	46.2	25.5	20.7	51.7	64.6	38.8	25.8	62.6	74.2	51.0	23.2	68.3	82.5	54.0	28.5	65.0	76.6	53.4	23.2	59.2	70.7	47.7	23.0
1998	41.2	52.8	29.6	23.2	53.3	66.6	40.0	26.6	56.8	69.7	43.9	25.8	70.3	83.7	56.9	26.8	68.7	83.0	54.4	28.6	63.9	78.2	49.7	28.5
1999	38.4	48.2	28.6	19.6	50.5	62.3	38.7	23.6	60.3	73.1	47.5	25.6	70.0	84.0	55.9	28.1	67.6	80.8	54.5	26.3	54.0	67.7	40.3	27.4
2000	45.4	59.8	31.0	28.8	55.5	69.2	41.8	27.4	62.5	77.6	47.3	30.3	72.2	87.3	57.0	30.3	70.5	84.6	56.3	28.3	58.2	72.5	43.9	28.6
2001	44.3	55.5	33.1	22.4	52.6	64.3	40.9	23.4	64.2	79.1	49.3	29.8	72.2	86.5	57.9	28.6	69.5	83.6	55.3	28.3	61.5	76.6	46.4	30.2
Maximum:	50.1	64.1	36.0	29.4	56.8	70.1	43.6	27.8	67.4	81.4	53.7	31.9	72.2	87.3	57.9	30.3	71.6	87.0	56.4	30.8	63.9	78.2	49.7	31.7
Minimum:	34.8	45.2	24.4	18.1	45.7	54.6	36.1	17.8	56.8	68.7	43.9	22.8	64.3	77.4	50.5	24.8	63.5	75.5	50.1	23.2	52.8	65.0	39.5	21.9
Average:	**42.4**	**54.4**	**30.3**	**24.1**	**51.9**	**64.2**	**39.6**	**24.6**	**61.9**	**75.3**	**48.5**	**26.8**	**68.5**	**82.4**	**54.6**	**27.8**	**66.9**	**80.4**	**53.3**	**27.2**	**58.0**	**71.7**	**44.3**	**27.4**
Median:	42.8	55.0	30.7	23.9	51.7	64.4	40.1	25.0	62.5	75.6	48.7	26.6	68.5	82.5	54.7	28.1	66.5	80.6	53.1	27.3	57.8	71.3	44.1	27.5

Note: Maximum, minimum, average, and median values apply to the period 1972 through 2001.

Appendix 2.1.4.C. Temperature data summary - Pine Bluffs 5W and Pine Bluffs stations

Units: degrees Fahrenheit

	Apr				May				Jun				Jul				Aug				Sep			
Year	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD	Avg	Max	Min	TD
1951	39.8	53.5	26.1	27.4	54.5	68.5	40.6	27.9	57.3	71.3	43.2	28.1	71.2	87.2	55.3	31.9	67.7	83.0	52.4	30.6	57.1	72.7	41.6	31.1
1952	45.8	61.7	29.9	31.8	54.5	68.6	40.4	28.2	70.1	87.7	52.4	35.3	70.2	88.7	51.7	37.0	70.8	87.1	54.5	32.6	62.4	81.4	43.4	38.0
1953	39.1	52.6	25.5	27.1	51.0	64.4	37.7	26.7	66.7	83.2	50.2	33.0	72.7	89.2	56.3	32.9	69.7	86.4	53.1	33.3	62.8	81.4	44.1	37.3
1954	49.8	66.9	32.6	34.3	53.0	67.6	38.4	29.2	65.5	82.9	48.0	34.9	75.0	92.7	57.4	35.3	70.5	88.2	52.8	35.4	63.1	80.2	45.9	34.3
1955	46.5	63.3	29.7	33.6	55.6	71.1	40.1	31.0	60.4	74.6	46.3	28.3	73.2	91.2	55.3	35.9	71.3	86.8	55.8	31.0	60.4	77.3	43.5	33.8
1956	41.4	57.0	25.9	31.1	57.0	72.1	41.8	30.3	69.3	88.5	50.2	38.3	70.2	87.1	53.2	33.9	67.3	84.2	50.4	33.8	62.1	82.1	42.1	40.0
1957	40.5	52.3	28.6	23.7	51.4	64.0	38.7	25.3	62.9	78.6	47.2	31.4	72.1	90.2	54.1	36.1	70.2	86.4	54.0	32.4	57.3	75.0	39.6	35.4
1958	41.7	53.4	30.0	23.4	59.9	75.7	44.1	31.6	64.8	80.4	49.1	31.3	67.1	82.7	51.5	31.2	71.1	89.0	53.2	35.8	61.2	78.1	44.3	33.8
1959	42.4	56.7	28.1	28.6	53.7	66.9	40.5	26.4	68.6	85.5	51.7	33.8	71.2	88.9	53.5	35.4	72.5	88.4	56.5	31.9	57.7	72.8	42.6	30.2
1960	47.8	62.8	32.8	30.0	54.9	71.2	38.6	32.6	64.8	80.1	49.6	30.5	71.2	89.1	53.4	35.7	69.5	87.7	51.2	36.5	62.2	79.3	45.1	34.2
1961	41.6	54.9	28.3	26.6	53.7	67.6	39.7	27.9	66.0	82.5	49.5	33.0	71.2	88.4	53.9	34.5	71.4	88.5	54.3	34.2	53.8	69.0	38.6	30.4
1962	48.3	64.7	31.8	32.9	57.0	72.1	41.8	30.3	63.6	78.4	48.7	29.7	70.0	85.6	54.4	31.2	68.9	87.7	50.1	37.6	60.0	77.1	42.9	34.2
1963	46.0	61.4	30.7	30.7	58.1	74.8	41.4	33.4	67.6	85.4	49.9	35.5	75.0	92.5	57.4	35.1	70.5	85.9	55.2	30.7	65.0	80.6	49.3	31.3
1964	43.3	55.5	31.0	24.5	57.0	72.3	41.7	30.6	62.3	77.9	46.6	31.3	75.0	93.7	56.2	37.5	68.4	85.4	51.5	33.9	59.1	77.6	40.7	36.9
1965	46.8	61.6	32.1	29.5	53.3	68.4	38.4	30.0	62.2	76.2	48.2	28.0	70.4	86.6	54.2	32.4	67.5	84.1	50.8	33.3	52.5	65.8	39.2	26.6
1966	41.9	58.7	25.1	33.6	57.4	76.1	38.6	37.5	63.6	78.8	48.4	30.4	75.4	91.7	59.1	32.6	68.9	84.4	53.3	31.1	62.2	77.3	47.1	30.2
1967	46.2	62.0	30.5	31.5	51.5	64.3	38.7	25.6	61.4	74.6	48.3	26.3	69.7	84.8	54.5	30.3	67.7	84.8	50.6	34.2	60.4	76.0	44.8	31.2
1968	41.0	54.9	27.1	27.8	51.0	64.3	37.8	26.5	65.6	81.4	49.8	31.6					66.4	82.6	50.2	32.4	58.4	75.6	41.1	34.5
1969	48.2	63.3	33.2	30.1	56.6	72.2	41.1	31.1	58.9	73.4	44.5	28.9	72.2	88.8	55.6	33.2	71.4	89.2	53.6	35.6	62.8	78.9	46.8	32.1
1970	39.6	52.3	26.9	25.4	57.5	74.1	40.9	33.2	63.5	80.4	46.7	33.7	72.4	89.6	55.2	34.4	73.0	90.5	55.4	35.1	57.8	74.2	41.5	32.7
1971	44.9	59.3	30.4	28.9	52.6	65.7	39.5	26.2	66.8	82.9	50.7	32.2	68.9	85.0	52.8	32.2	72.3	90.0	54.5	35.5	53.8	71.3	39.0	32.3
1972	44.8	57.5	32.0	25.5	53.1	67.1	39.2	27.9	65.9	81.0	50.7	30.3	66.9	83.0	50.8	32.2	66.8	81.6	52.0	29.6	58.7	75.0	42.4	32.6
1973	41.1	53.7	28.5	25.2	53.0	67.3	38.7	28.6																
1974																								
1975																								
1976																								
1977																								
1978																								
1979																	65.9	81.6	50.2	31.4	63.6	80.7	46.6	34.1
1980	42.7	56.6	28.8	27.8	51.1	64.9	37.2	27.7	65.9	84.5	47.3	37.2	73.3	91.0	55.5	35.5	68.4	85.7	51.2	34.5	60.8	79.1	42.6	36.5
1981	49.9	65.4	34.5	30.9	51.5	64.5	38.4	26.1	65.5	81.7	49.2	32.5	70.1	86.2	54.0	32.2	68.0	83.5	52.4	31.1	61.9	79.0	44.7	34.3
1982	41.8	58.3	25.3	33.0	52.6	66.5	38.8	27.7	60.2	74.7	45.6	29.1	70.3	86.6	54.0	32.6	70.5	86.5	54.5	32.0	58.1	72.3	43.9	28.4
1983	38.4	50.0	26.7	23.3	48.9	61.8	36.0	25.8	61.0	74.1	47.8	26.3	71.0	87.8	54.2	33.6	74.0	89.8	58.1	31.7	59.5	77.8	41.2	36.6
1984	37.9	49.2	26.6	22.6	56.0	71.5	40.5	31.0	62.6	78.6	46.6	32.0	71.1	86.9	55.3	31.6	70.8	86.3	55.3	31.0	54.8	71.1	38.5	32.6
1985	48.5	63.4	33.6	29.8	57.3	73.5	41.2	32.3	63.4	79.9	46.9	33.0	71.2	87.5	55.0	32.5	68.5	87.0	50.0	37.0	55.0	70.4	39.5	30.9
1986	45.9	59.0	32.7	26.3	53.9	68.1	39.6	28.5	67.8	82.2	53.4	28.8	71.7	87.7	55.7	32.0	69.5	85.0	54.0	31.0	57.5	71.3	43.7	27.6
1987	49.7	66.0	33.3	32.7	57.1	68.7	45.5	23.2	66.5	81.5	51.6	29.9	71.7	87.8	55.7	32.1	65.9	79.8	51.9	27.9	58.2	74.6	41.7	32.9
1988					54.4	69.5	39.3	30.2	69.0	84.8	53.1	31.7	69.7	87.2	52.2	35.0	69.6	86.6	52.6	34.0	57.7	75.1	40.4	34.7
1989	44.1	59.6	28.7	30.9	53.9	68.9	38.9	30.0	60.1	74.3	45.9	28.4	71.6	89.5	53.8	35.7	66.4	81.2	51.6	29.6	57.5	72.6	42.3	30.3
1990	43.3	57.4	29.3	28.1	49.7	63.8	35.7	28.1	65.5	81.0	50.0	31.0	66.7	81.3	52.1	29.2	66.6	82.9	50.3	32.6	62.0	77.8	46.3	31.5
1991	42.7	56.7	28.7	28.0	54.6	68.6	40.6	28.0	63.9	77.9	49.8	28.1					68.5	83.9	53.0	30.9	58.9	75.2	42.6	32.6
1992	46.9	64.2	29.7	34.5	57.1	73.6	40.6	33.0					65.6	79.8	51.5	28.3	64.0	79.1	48.9	30.2	59.7	77.3	42.0	35.3
1993	42.7	54.9	30.5	24.4	54.0	68.5	39.5	29.0	60.3	75.6	45.1	30.5	66.4	82.0	50.9	31.1	66.1	81.4	50.8	30.6	54.4	69.9	38.9	31.0
1994	44.2	58.8	29.6	29.2	57.8	74.2	41.4	32.8	66.7	83.8	49.7	34.1	68.9	85.4	52.3	33.1	69.8	87.0	52.7	34.3	61.0	78.8	43.2	35.6
1995	39.7	52.8	26.7	26.1	46.6	55.9	37.3	18.6	59.4	72.5	46.3	26.2	68.2	85.5	51.0	34.5	70.8	89.8	51.7	38.1	57.9	73.3	42.4	30.9
1996	43.6	59.4	27.8	31.6	52.5	65.7	39.4	26.3	63.7	79.9	47.5	32.4	69.9	85.8	53.9	31.9	68.0	84.1	51.9	32.2	57.4	71.9	42.9	29.0
1997	37.2	49.8	24.7	25.1	52.5	67.5	37.4	30.1	63.8	77.2	50.4	26.8	69.4	86.5	52.4	34.1	67.1	81.3	52.9	28.4	60.3	76.0	44.6	31.4
1998	42.1	56.9	27.2	29.7	55.3	70.1	40.4	29.7	58.2	73.1	43.3	29.8	70.4	84.6	56.1	28.5	68.9	85.3	52.5	32.8	64.1	81.9	46.3	35.6
1999	40.2	52.4	27.9	24.5	52.4	66.7	38.1	28.6	62.5	77.7	47.3	30.4	71.2	87.5	55.0	32.5	68.3	83.0	53.7	29.3	55.2	70.9	39.4	31.5
2000	44.6	61.7	27.5	34.2	56.0	71.3	40.7	30.6	63.0	80.1	45.9	34.2	72.2	89.7	54.8	34.9	72.0	89.8	54.2	35.6	58.8	75.9	41.6	34.3
2001	45.2	59.0	31.3	27.7	53.5	66.6	40.4	26.2	64.2	80.5	47.8	32.7	72.7	88.6	56.9	31.7	69.1	86.9	51.3	35.6	61.1	79.1	43.0	36.1
Maximum:	49.9	66.0	34.5	34.5	57.8	74.2	45.5	33.0	69.0	84.8	53.4	37.2	73.3	91.0	56.9	35.7	74.0	89.8	58.1	38.1	64.1	81.9	46.6	36.6
Minimum:	37.2	49.2	24.7	22.6	46.6	55.9	35.7	18.6	58.2	72.5	43.3	26.2	65.6	79.8	50.8	28.3	64.0	79.1	48.9	27.9	54.4	69.9	38.5	27.6
Average:	**43.4**	**57.5**	**29.2**	**28.3**	**53.5**	**67.7**	**39.4**	**28.3**	**63.6**	**78.9**	**48.2**	**30.7**	**70.0**	**86.3**	**53.8**	**32.5**	**68.5**	**84.5**	**52.4**	**32.1**	**58.9**	**75.3**	**42.5**	**32.8**
Median:	43.3	57.5	28.7	28.0	53.7	67.8	39.4	28.6	63.8	79.9	47.7	30.5	70.4	86.8	54.0	32.4	68.5	84.6	52.2	31.6	58.8	75.2	42.5	32.6

Notes:
Maximum, minimum, average, and median values apply to the period 1972 through 2001.
Italicized values are from Pine Bluffs weather station.

APPENDIX 2.1.4.D

YIELD EVAPOTRANSPIRATION ADJUSTMENT – APPENDIX G – 2001 MODIFIED NORTH PLATTE DECREE "BROWN BOOK"

Appendix 2.1.4.D. Yield evapotranspiration adjustment -
Appendix G - 2001 Modified North Platte Decree "brown book"

Source of equations: Hinckley Consulting, Laramie, WY

Summary of polynomial equations used in 2001 Modified Platte River Decree "brown book" (Supreme Court, 2001)

Above Pathfinder Dam:

Crop	Equation
Alfalfa	$Y_{env(i)}$ = - 0.0004X^2 + 0.0779X - 1.1168
Other hay	$Y_{env(i)}$ = 9E-05X^2 + 0.0083X + 0.1592

Below Pathfinder Dam:

Alfalfa	$Y_{env(i)}$ = -8E-05X^2 + 0.0335X + 0.3593
Other hay	$Y_{env(i)}$ = 0.0003X^2 - 0.0262X + 1.5511
Corn	$Y_{env(i)}$ = -0.0206X^2 + 4.9989X- 182.54
Beans	$Y_{env(i)}$ = -0.0966X^2 + 27.666X + 268.51
Small grains	$Y_{env(i)}$ = 0.0042X^2 + 0.3875X + 1.0387

where:

$Y_{env(i)}$	the calculated envelope or fully-watered yield during year "i"
X	the last two digits of a given year (for example, 75 for year 1975)

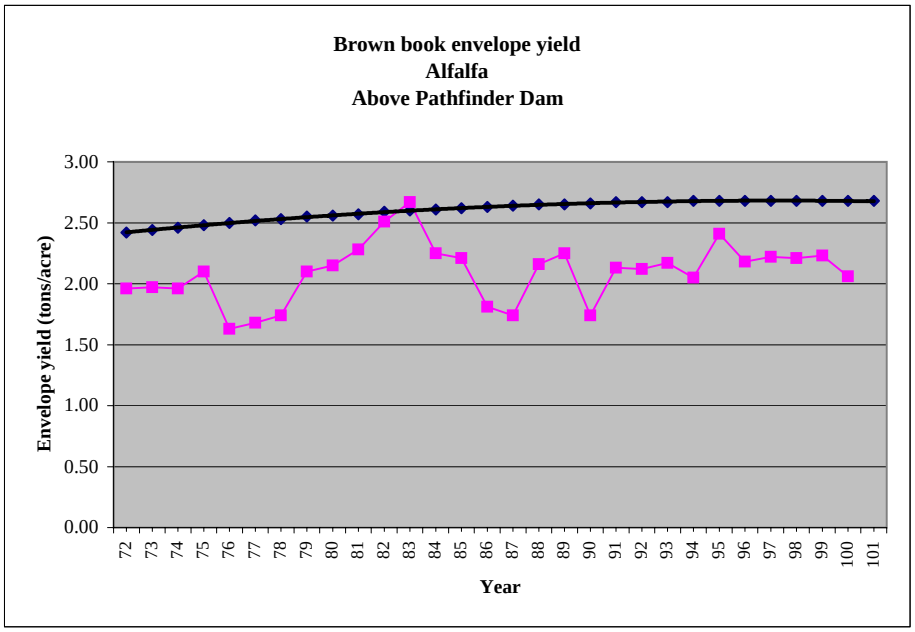
Graphed polynomial equations during the Platte River Basin Plan 1972 through 2001 study period

Appendix 2.1.4.D. Yield evapotranspiration adjustment -
Appendix G - 2001 Modified North Platte Decree "brown book"

Above Pathfinder Dam

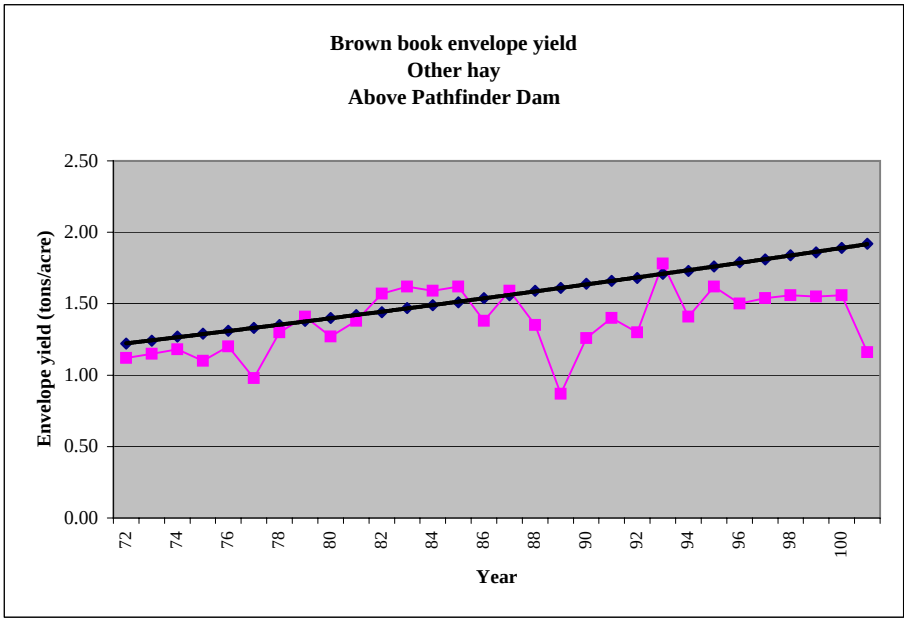
Alfalfa $Y_{env(i)} = - 0.0004X^2 + 0.0779X - 1.1168$

X	"Fully-watered yield Y_{env}	Wted yields (1)
72	2.42	1.96
73	2.44	1.97
74	2.46	1.96
75	2.48	2.10
76	2.50	1.63
77	2.52	1.68
78	2.53	1.74
79	2.55	2.10
80	2.56	2.15
81	2.57	2.28
82	2.59	2.51
83	2.60	2.67
84	2.61	2.25
85	2.62	2.21
86	2.63	1.81
87	2.64	1.74
88	2.65	2.16
89	2.65	2.25
90	2.66	1.74
91	2.67	2.13
92	2.67	2.12
93	2.67	2.17
94	2.68	2.05
95	2.68	2.41
96	2.68	2.18
97	2.68	2.22
98	2.68	2.21
99	2.68	2.23
100	2.68	2.06
101	2.68	2.05



Other hay Yenv(i) = 9E-05X^2 + 0.0083X + 0.1592

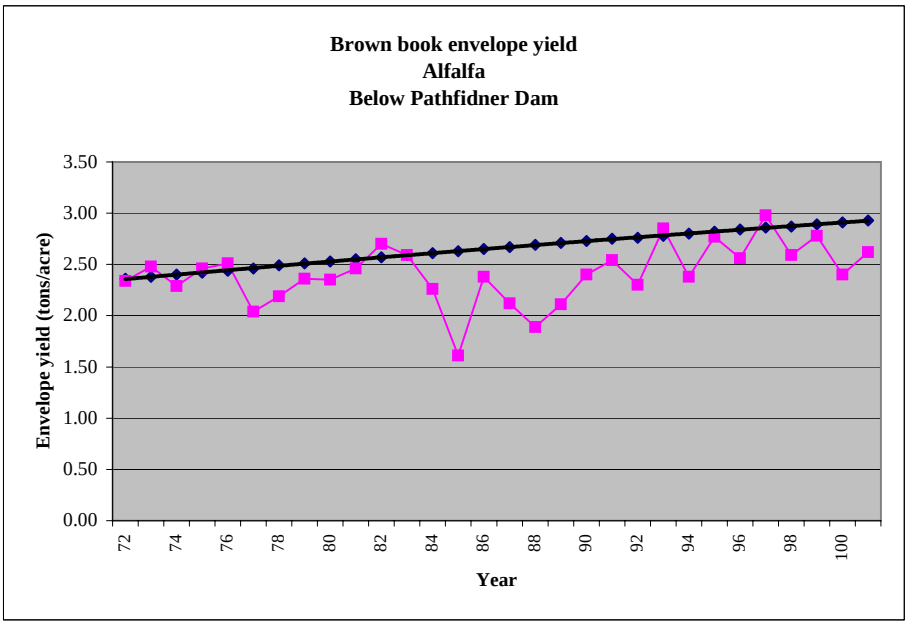
X	"Fully-watered yield Y_{env}	Wted yields (1)
72	1.22	1.12
73	1.24	1.15
74	1.27	1.18
75	1.29	1.10
76	1.31	1.20
77	1.33	0.98
78	1.35	1.30
79	1.38	1.41
80	1.40	1.27
81	1.42	1.38
82	1.44	1.57
83	1.47	1.62
84	1.49	1.59
85	1.51	1.62
86	1.54	1.38
87	1.56	1.59
88	1.59	1.35
89	1.61	0.87
90	1.64	1.26
91	1.66	1.40
92	1.68	1.30
93	1.71	1.78
94	1.73	1.41
95	1.76	1.62
96	1.79	1.50
97	1.81	1.54
98	1.84	1.56
99	1.86	1.55
100	1.89	1.56
101	1.92	1.16



Below Pathfinder Dam (Pathfinder to Guernsey subbasin)

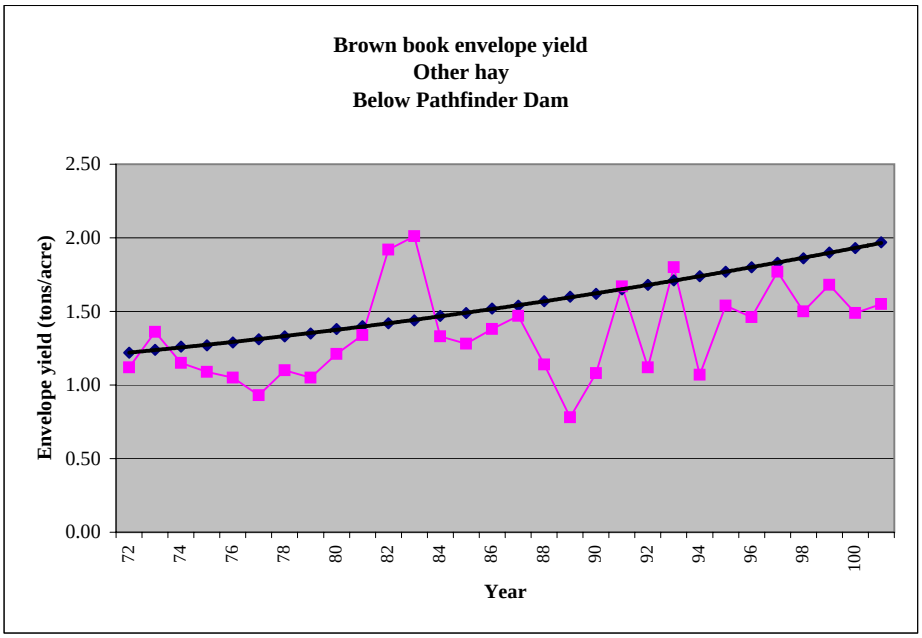
Alfalfa $Y_{env(i)} = -8E\text{-}05X^2 + 0.0335X + 0.3593$

X	"Fully-watered yield Y_{env}	Wted yields (2)
72	2.36	2.34
73	2.38	2.48
74	2.40	2.29
75	2.42	2.46
76	2.44	2.51
77	2.46	2.04
78	2.49	2.19
79	2.51	2.36
80	2.53	2.35
81	2.55	2.46
82	2.57	2.70
83	2.59	2.59
84	2.61	2.26
85	2.63	1.61
86	2.65	2.38
87	2.67	2.12
88	2.69	1.89
89	2.71	2.11
90	2.73	2.40
91	2.75	2.54
92	2.76	2.30
93	2.78	2.85
94	2.80	2.38
95	2.82	2.77
96	2.84	2.56
97	2.86	2.98
98	2.87	2.59
99	2.89	2.78
100	2.91	2.40
101	2.93	2.62



Other hay $Y_{env(i)} = 0.0003X^2 - 0.0262X + 1.5511$

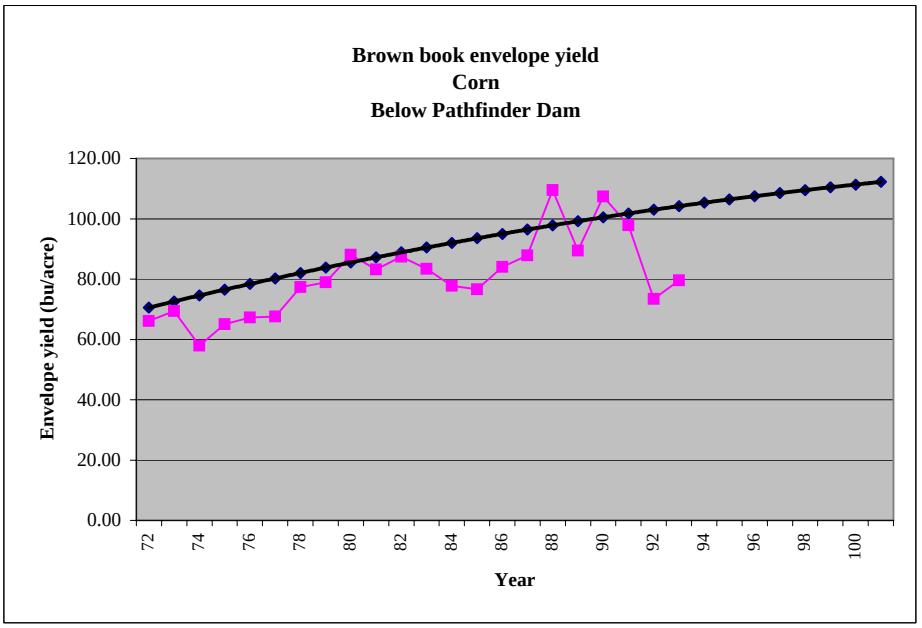
X	"Fully-watered yield Y_{env}	Wted yields (2)
72	1.22	1.12
73	1.24	1.36
74	1.26	1.15
75	1.27	1.09
76	1.29	1.05
77	1.31	0.93
78	1.33	1.10
79	1.35	1.05
80	1.38	1.21
81	1.40	1.34
82	1.42	1.92
83	1.44	2.01
84	1.47	1.33
85	1.49	1.28
86	1.52	1.38
87	1.54	1.47
88	1.57	1.14
89	1.60	0.78
90	1.62	1.08
91	1.65	1.67
92	1.68	1.12
93	1.71	1.80
94	1.74	1.07
95	1.77	1.54
96	1.80	1.46
97	1.83	1.77
98	1.86	1.50
99	1.90	1.68
100	1.93	1.49
101	1.97	1.55



Appendix 2.1.4.D. Yield evapotranspiration adjustment -
Appendix G - 2001 Modified North Platte Decree "brown book"

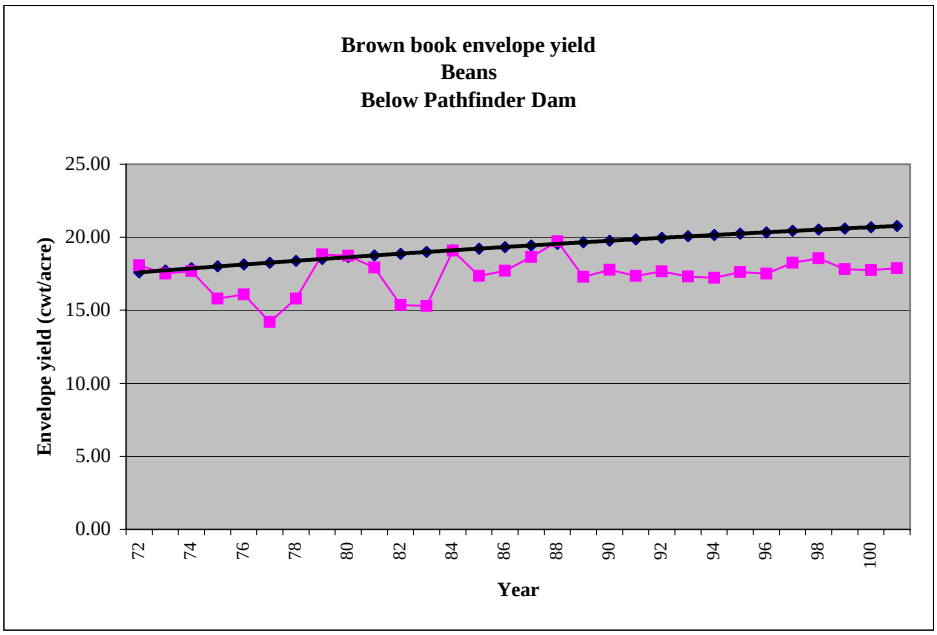
Corn $Y_{env(i)} = -0.0206X^2 + 4.9989X - 182.54$

X	"Fully-watered yield Y_{env}	Wted yields (2)
72	70.59	66.14
73	72.60	69.44
74	74.57	57.97
75	76.50	65.01
76	78.39	67.23
77	80.24	67.57
78	82.04	77.32
79	83.81	78.93
80	85.53	88.05
81	87.21	83.18
82	88.86	87.47
83	90.46	83.37
84	92.01	77.75
85	93.53	76.56
86	95.01	84.02
87	96.44	87.87
88	97.84	109.54
89	99.19	89.45
90	100.50	107.40
91	101.77	97.82
92	103.00	73.44
93	104.19	79.61
94	105.34	
95	106.44	
96	107.50	
97	108.53	
98	109.51	
99	110.45	
100	111.35	
101	112.21	



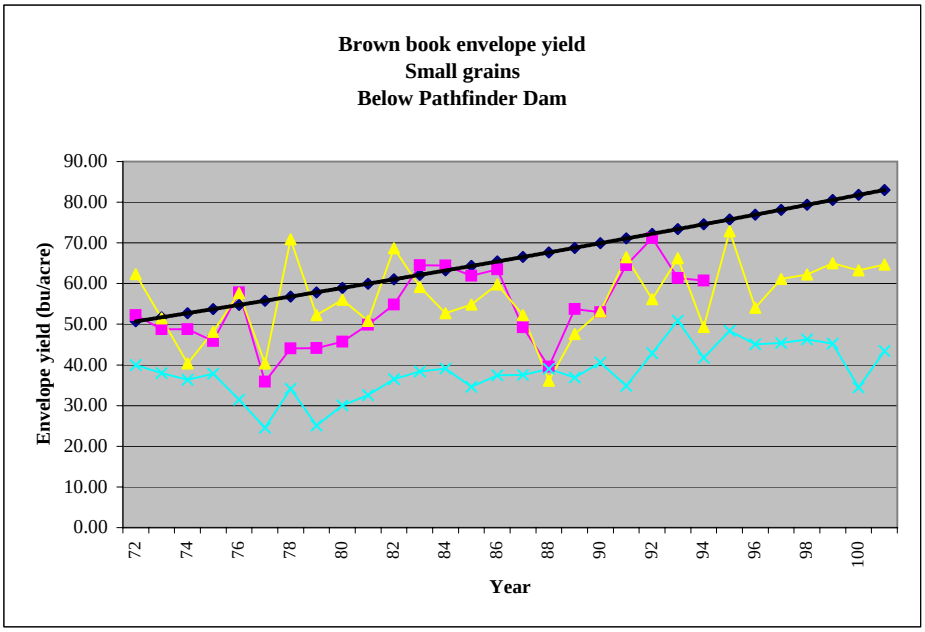
Beans $Y_{env(i)} = -0.0966X^2 + 27.666X + 268.51$

X	"Fully-watered yield Y_{env}	Wted yields (2)
72	17.60	18.07
73	17.73	17.50
74	17.87	17.69
75	18.00	15.80
76	18.13	16.09
77	18.26	14.19
78	18.39	15.80
79	18.51	18.82
80	18.64	18.73
81	18.76	17.92
82	18.88	15.36
83	18.99	15.30
84	19.11	19.08
85	19.22	17.35
86	19.33	17.70
87	19.44	18.64
88	19.55	19.73
89	19.66	17.29
90	19.76	17.77
91	19.86	17.35
92	19.96	17.66
93	20.06	17.32
94	20.16	17.23
95	20.25	17.62
96	20.34	17.50
97	20.43	18.26
98	20.52	18.56
99	20.61	17.81
100	20.69	17.74
101	20.77	17.88



Small grains $Y_{env(i)} = 0.0042X^2 + 0.3875X + 1.0387$

X	"Fully-watered yield Y_{env}	Wted yields (2) Barley	Oats	Wntr Wht
72	50.71	52.26	62.33	40.00
73	51.71	48.74	51.49	38.00
74	52.71	48.77	40.33	36.36
75	53.73	45.88	48.15	37.82
76	54.75	57.80	57.63	31.46
77	55.78	35.90	40.36	24.55
78	56.82	44.09	70.91	34.18
79	57.86	44.15	52.27	25.08
80	58.92	45.70	56.03	30.08
81	59.98	49.87	50.81	32.54
82	61.05	54.82	68.67	36.54
83	62.14	64.48	59.14	38.36
84	63.22	64.40	52.68	39.10
85	64.32	61.92	54.87	34.64
86	65.43	63.49	59.79	37.46
87	66.54	49.24	52.27	37.54
88	67.66	39.55	36.08	39.02
89	68.79	53.77	47.63	36.90
90	69.93	52.96	53.13	40.60
91	71.08	64.53	66.47	34.87
92	72.24	71.19	56.17	42.90
93	73.40	61.38	66.25	50.90
94	74.57	60.71	49.32	41.80
95	75.76		72.85	48.39
96	76.95		54.06	45.08
97	78.14		61.15	45.39
98	79.35		62.25	46.25
99	80.57		64.96	45.25
100	81.79		63.23	34.43
101	83.02		64.65	43.44



Notes:
(1) See Table 2.1.4.54.
(2) See Table 2.1.4.59.

APPENDIX 2.1.4.E

PRECIPITATION DATA (UNFORMATTED AND FORMATTED)

Appendix 2.1.4.E. Precipitation data - Encampment 10 ESE station

ID: 483045
Latitude: 41.18 degrees
Longitude: -106.62 degrees
Elevation: 7385 feet
Station period of record: 08/01/1948-10/31/1998
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Ju n	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.83	1.97	0.55	2.06	1.91	-999g
1949	1.48	0.50	1.89	1.01	2.78	2.17	1.73	0.23	1.16	2.28	0.17	1.16	16.56
1950	1.75	0.72	1.45	3.29	2.64	0.53	0.80	0.20	3.61	0.32	0.99	0.50	16.80
1951	1.64	0.37	1.12	2.43	0.56	1.23	1.13	1.79	0.25	3.08	0.94	-999z	14.54a
1952	1.00	0.67	1.51	0.82	0.95	1.54	0.90	1.08	0.09	0.00	0.96	0.55	10.07
1953	0.68	0.94	0.64	2.43	2.84	1.99	1.43	2.10	0.41	0.60	1.14	0.49a	15.69
1954	1.01	0.58	3.96	0.13	1.28	0.31	1.38	1.51	1.75	1.86	0.62	0.55	14.94
1955	0.61	0.66	1.02	0.58	1.37	1.10	0.29	3.17	0.36	1.70	1.58	1.07	13.51
1956	1.90	0.55	0.55	1.90	2.05	0.57	2.03	0.59	0.00	0.69	1.09	1.84	13.76
1957	1.15	1.29	1.10	1.95	4.45	1.55	2.30	1.69	0.50	2.23	1.00	0.33	19.54
1958	0.24	0.62	1.77	1.75	1.99	0.61	0.83	1.89	0.78	0.07	0.67	1.23	12.45
1959	0.53	0.67	1.20	0.88	2.14	1.37	0.44	1.57	1.41	1.02	0.23	0.72	12.18
1960	0.00	0.87	1.12	0.31	1.89	1.57	0.58	0.77	0.81	0.99	1.32	0.49	10.72
1961	0.34	0.35	1.29	2.49	1.92	1.61	2.68	2.32	4.98	0.55	1.15	0.63	20.31
1962	1.75	1.60	0.40	2.13	1.00	1.88	0.57	0.75	0.40a	0.58	0.36	0.62	12.04
1963	0.74	0.26	0.51	1.97	0.22	1.25	1.54	3.51	0.66	0.45	0.84	0.74	12.69
1964	1.05	1.12	0.94	1.62	1.12	1.74	0.63	1.96	0.69	0.53	2.22	1.15	14.77
1965	0.68	0.60	0.96	2.05	3.53	1.83	1.32	3.14	2.66	0.00	1.18	0.87	18.82
1966	0.50	0.72	1.01	1.12	0.50	1.51	1.08	2.58	1.08	1.96	0.36	0.92	13.34
1967	0.56	0.73	1.73	1.39	1.94	2.12	3.72	1.51	2.75	1.48	0.49	1.67	20.09
1968	0.42	0.95	0.29	3.28	1.98	0.47	1.18	1.88	1.37	1.24	1.63	0.67	15.36
1969	1.09	1.08	0.90	1.49	0.83	3.47	0.96	1.21	1.20	3.41	0.99	0.68	17.31
1970	0.31	0.29	0.89	2.10	1.51	2.37	0.74	3.65	1.93	3.04	1.58	0.83	19.24
1971	0.48	0.88	0.87	1.64	1.67	0.44	1.37	0.64	0.89	0.83	0.69	1.24	11.64
1972	1.14	0.65	0.70	1.63	0.79	1.85	0.58	-999z	2.03	3.19	1.27	2.30	16.13a
1973	0.50	0.50	1.24	3.04	1.95	1.04	1.66	0.62	1.25	0.23	2.45	1.58	16.06
1974	1.02	0.72	2.35	2.25	0.59	1.69	1.27	0.20	1.05	1.18	0.41	1.03	13.76
1975	1.67	0.66	2.69	2.17	1.68	0.68	2.15	0.87	0.55	2.39	0.52	1.55	17.58
1976	0.37	1.32	1.50	1.69	1.41	1.85	1.49	1.28	0.30	0.40	0.28	0.59	12.48
1977	0.47	0.59	1.66	2.11	4.20	0.06	2.41	1.62	0.86	0.77	1.22	0.32	16.29
1978	0.72	0.83	1.01	0.68	3.03	0.68	0.25	0.20	1.07	0.87	0.92	2.14	12.40
1979	0.48	0.40	1.38	1.11	1.38	0.20	0.32	2.41	0.39	1.73	0.66	0.34	10.80
1980	2.39	0.79	1.28	0.26	2.02	0.03	0.39	0.82	1.30	1.26	0.53	0.19	11.26
1981	0.06	0.52	0.94	1.00	4.36	0.80	1.93	1.31	0.81	1.53	0.63	0.87	14.76
1982	1.33	0.38	0.87	0.64	1.41	1.34	1.68	0.46	1.45	1.85	1.05	0.60	13.06
1983	0.08	0.44	2.21	2.12	1.56	2.79	1.45	1.34	0.52	1.74	2.59	1.19	18.03
1984	0.28	0.84	1.58	2.51	0.69	1.26	1.72	1.49	1.81	0.80	0.72	0.60	14.30
1985	1.02	0.36	1.07	1.36	0.65	0.60	1.88	0.24	1.27	2.04	2.08	0.44	13.01
1986	0.10	1.85	0.95	1.39	1.23	2.48	1.38	0.73	1.15	1.83	0.75	0.26	14.10
1987	0.67	0.63	0.88	1.02	1.24	0.79	1.45	1.07	0.11	1.23	0.83	0.91	10.83
1988	0.62	0.56	1.41	0.36	1.30	1.29	0.46	0.45	1.35	0.15	1.29	0.55	9.79
1989	0.25	2.63	1.05	0.33	0.49	0.77	0.91	1.87	1.50	0.33	0.70	0.88	11.71
1990	0.22	1.38	1.26	0.99	0.51	0.99	1.98	0.70	1.12	1.70	0.84	0.48	12.17
1991	0.60	0.41	0.89	1.01	2.15	1.46	0.53	1.51	0.48	0.42	1.72	0.18	11.36
1992	-999z	0.81	0.86	1.30	2.39	1.43	2.88	1.28	1.05	0.95	1.35b	1.34	15.64a
1993	0.70	1.53	1.48	2.77	1.84	2.26	0.34	1.30	1.55	1.97a	2.08	1.28	19.10
1994	0.41	1.74	1.01	1.35	0.66	0.66	0.40	1.35	0.22	1.18	1.07	0.34	10.39
1995	1.01	0.69	0.95	1.59	5.12	1.73	1.53	0.54	2.06	1.70	1.21	0.10	18.23

Appendix 2.1.4.E. Precipitation data - Encampment 10 ESE station

ID: 483045
Latitude: 41.18 degrees
Longitude: -106.62 degrees
Elevation: 7385 feet
Station period of record: 08/01/1948-10/31/1998
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Ju n	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1996	0.51	0.43	0.90	1.55	2.21	0.47	1.01	0.93	0.60	1.76	1.75	1.13a	13.25
1997	1.70	0.54a	0.41	2.62	1.34	0.77	0.96	2.39	2.80	1.24	0.23a	0.34	15.34
1998	0.29	1.04	0.96a	1.29	1.02	2.27	2.76	0.84	0.78	2.38	-999z	-999z	13.63b

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.
Bold values are those for which one or more values is missing.

Appendix 2.1.4.E. Precipitation data - Saratoga 1 SSE station

ID: 487990
Latitude: 41.45 degrees
Longitude: -106.81 degrees
Elevation: 6790 feet
Station period of record: 08/01/1948-10/07/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.31	1.65	0.30	-999g	1.50	-999h
1949	1.72	0.39	1.23	0.83	1.52	1.73	0.76	0.51	0.49	1.39	0.15	0.86	11.58
1950	0.59	0.50	0.89	2.39	1.27	0.38	0.85	0.12b	1.94	0.69	0.55	0.32	10.49
1951	0.87	0.04	0.66	0.81	1.30	1.16	1.03	1.32	0.33b	3.69	0.49	0.46	12.16
1952	0.69	0.78	0.83	0.84	1.10	0.79	0.84	1.44	0.08	0.00	0.55	0.19	8.13
1953	0.46	0.48	0.21	0.96	2.50	0.50	0.64	0.97	0.06a	0.07	0.49	-999g	7.34a
1954	0.54	0.25	1.95	0.00	0.42	0.00	0.31	0.44	1.00	0.77	0.43	0.33	6.44
1955	0.20	0.32a	0.77	0.38	0.60	0.25	0.00	1.83	0.13	0.57	0.70	0.45	6.20
1956	0.62	0.41	0.25	0.83	0.99	0.36	-999l	0.80	0.00	0.73	0.45	0.88	6.32a
1957	0.64	0.22	0.81	0.36	2.60	0.85	0.43	1.49	0.36	2.30	0.31	0.04	10.41
1958	0.08	0.13	0.81	0.43	0.81	0.04b	0.56	0.93	0.75	0.01	0.02	0.67	5.24
1959	0.41	0.54	0.66	0.23	1.28	1.60	0.10	0.96	1.27	0.97	0.06	0.14	8.22
1960	0.15	0.39	0.82	0.48	0.85	1.38	0.77	0.81	0.12	0.55	1.28	0.07	7.67
1961	0.24	0.44	0.35	0.87	1.47	1.04	1.30	1.03	2.94	0.58	0.52	0.13	10.91
1962	1.08	1.08	0.46	1.41	0.77	1.27	0.44	0.35	0.27	1.01	0.21	0.12	8.47
1963	0.44	0.17	0.41	1.69	0.22	0.71	0.91	2.09	0.34	0.29	0.16	0.17	7.60
1964	0.48	0.73	0.61	1.94	0.76	1.50	0.27	1.28	0.52	0.18	0.61	0.86	9.74
1965	0.23	0.15	0.66	1.02	3.55	0.67	1.24	0.35	2.86	0.02	0.29	0.60	11.64
1966	0.08	0.15	0.85	0.87	0.20	1.53	0.60	1.15	1.19	1.78	0.63	0.39	9.42
1967	0.48	0.76	1.36	0.66	1.39	2.31	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1968	-999z	-999z	-999z	-999z	-999z	-999z	0.51	1.17	0.70	0.72	0.81	0.30	-999f
1969	0.43	0.51	0.34	0.61	0.40	2.16	0.17	0.43	0.67	2.25	0.22	0.51	8.70
1970	0.18	0.02	0.89	1.04	0.51	2.01	0.74	0.73	1.48	1.47	0.89	0.55	10.51
1971	0.17	0.28	0.29	0.69	1.91	0.04	0.24	0.57	0.59	0.72	0.10	0.28	5.88
1972	0.41	0.26	0.34	0.51	0.90	2.00	0.61	0.64	1.14	3.24	0.79	0.74	11.58
1973	0.27	0.42	1.27	1.91	0.46	1.01	1.44	0.58	1.37	0.03	1.53	0.98	11.27
1974	0.31	0.26	0.51	1.42	0.09	0.98	3.12	0.30	0.67	1.62	0.32	0.73	10.33
1975	0.76	0.17	1.04	1.09	0.57	0.61	1.39	0.49	0.41	1.60	0.22	0.75	9.10
1976	0.05	0.53	0.40	1.16	1.76	1.46	2.49	0.52	0.44	0.17	0.00	0.23	9.21
1977	0.29	0.25	0.75	1.35	3.26	0.45	1.10	1.30	0.40	0.34	0.60	0.00	10.09
1978	0.55	0.45	0.54	0.38	2.40	0.24	0.62	0.95	0.47	0.55	0.41	1.10	8.66
1979	0.39	0.41	1.02	0.93	1.67	0.20	0.15	1.76	0.15	1.29	0.43	0.37	8.77
1980	2.03	0.50	0.86	0.33	1.85	0.00	0.74	1.01	1.11	1.27	0.39	0.38	10.47
1981	0.12	0.22	0.59	0.72	3.02	0.00	1.46	0.76	0.53	1.60	0.41	0.33	9.76
1982	0.28	0.18	0.35	0.39	1.14	1.41	2.69	0.47	1.63	0.87	0.98	0.68	11.07
1983	0.02	0.13	1.47	1.72	1.53	1.60	2.33	0.79	0.78	1.16	2.28	0.69	14.50
1984	0.22	0.68	1.46	2.22	0.15	0.81	3.45	2.29	1.69	0.33	0.41	0.06	13.77
1985	0.68	0.23	0.62	0.50	0.61	0.37	1.04	0.22	0.58	0.99	1.16	0.43	7.43
1986	0.05	0.70	0.63	1.50	1.45	2.31	0.98	1.34	0.87	1.18	0.71	0.15	11.87
1987	0.41	0.74	0.88	0.48	1.24	0.24	1.02	1.21	0.21	0.82	1.13	0.91	9.29
1988	0.84	0.14	1.71	0.30	1.64	0.18	0.39	0.30	1.35	0.01	0.61	0.38	7.85
1989	0.08	1.92	0.47	0.06	0.26	0.42	0.79	1.09	1.28	0.48	0.18	0.57	7.60
1990	-999k	0.99	0.84	0.40	0.74	0.79	0.99	1.17	0.60	0.93	0.69	0.43	8.57a
1991	0.34	0.32	0.61	0.79	2.49	1.15	0.78	0.64	0.53	0.50	0.99	0.14	9.28
1992	1.06	0.60	0.54	0.40	2.40	0.97	1.63	0.77	0.51	0.88	0.60b	0.73a	11.09
1993	0.19a	0.47	0.95	2.02	2.49	0.90	0.29	1.21	1.32	2.22	0.84	0.37	13.27
1994	0.37	0.94	0.67	1.04	0.23	0.37	0.24	0.51	0.29	1.31	0.43	0.28	6.68
1995	0.52	0.52	0.77	1.51	5.45	2.31	0.99	0.89	1.08	1.18	0.96	0.12	16.30

Appendix 2.1.4.E. Precipitation data - Saratoga 1 SSE station

ID: 487990
Latitude: 41.45 degrees
Longitude: -106.81 degrees
Elevation: 6790 feet
Station period of record: 08/01/1948-10/07/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1996	0.71	0.20	0.45	2.04	1.98	0.41	0.31	0.30	0.36	0.91	0.64	0.34	8.65
1997	1.19	0.38	0.20	1.67	1.98	1.32	0.80	2.14	2.01	0.55	0.12a	0.38	12.74
1998	0.17	0.39	0.68	0.56	1.19	3.01	1.29	1.34	0.72	2.28	0.30	0.61	12.54
1999	0.70	0.18	0.24	1.03	1.53	1.96	1.38a	0.64	1.39	0.14	0.57	0.21a	9.97
2000	0.21b	0.30	0.61	0.81	1.93	0.24	0.55a	0.63b	2.32	0.33	0.55b	0.14a	8.62
2001	0.48a	0.91	0.18a	0.95	0.55	0.10	0.87	-999g	0.06	0.81	0.44d	0.12	5.47a
2002	0.00a	0.00c	1.07	0.15	0.08a	0.30	0.28a	1.01	0.80	2.23a	0.00b	0.02	5.94
2003	0.47	0.43a	0.75	1.76	1.46	1.04a	0.65	1.10	0.91	0.20	1.01c	0.61e	10.39
2004	0.15	1.88a	0.35	1.43	0.81	1.72a	0.86a	1.96a	1.35	-999x	-999z	-999z	10.51c

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Precipitation data - Medicine Bow station

ID: 486120
Latitude: 41.90 degrees
Longitude: -106.20 degrees
Elevation: 6570 feet
Station period of record: 11/08/1881-07/31/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1881	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1882	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1883	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1884	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1885	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1886	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1887	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1888	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1889	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1890	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1891	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1892	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1893	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1894	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1895	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1896	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1897	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1898	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1899	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1900	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1901	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1902	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1903	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1904	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1905	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1906	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1907	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1908	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1909	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1910	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1911	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1912	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1913	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1914	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1915	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1916	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1917	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1918	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1919	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1920	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1921	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1922	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1923	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1924	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1925	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1926	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1927	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1928	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1929	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l

Appendix 2.1.4.E. Precipitation data - Medicine Bow station

ID: 486120
Latitude: 41.90 degrees
Longitude: -106.20 degrees
Elevation: 6570 feet
Station period of record: 11/08/1881-07/31/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1930	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1931	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1932	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1933	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1934	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1935	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1936	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1937	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1938	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1939	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1940	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1941	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1942	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1943	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1944	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1945	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1946	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1947	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.44	0.57	0.31	0.87	0.95	-999g
1949	1.18	0.52	0.62	0.73	2.99	2.16	1.52	0.32	0.25	1.25	0.00	-999n	11.54a
1950	0.28	0.11	0.70	1.69	1.45	0.57	0.93	0.27	2.09	0.89	0.57	0.09	9.64
1951	0.80	0.25	0.43	1.28	1.81	1.63	0.61	0.30	0.91	1.93	0.56	0.20	10.71
1952	0.42	0.63	0.76	0.88	2.34	0.48	0.74	1.52	0.39	0.17	0.60	0.48	9.41
1953	0.22	0.81	0.29	1.09	1.35	0.61	1.42	0.71	0.13	0.24	0.61	0.11	7.59
1954	0.34	0.13	1.09	0.01	0.88	0.31	0.41	0.66	1.10	0.68	0.21	0.37	6.19
1955	0.38	0.75	0.88	0.50	0.70a	1.54	0.61	1.65	0.34	0.37	1.01	0.29	9.02
1956	1.03	0.53	0.33	0.95	1.73	0.36	1.93	0.35	0.05	0.14	0.85	1.01	9.26
1957	0.89	0.46	2.02	0.83	2.44	0.54	1.02	1.21	0.40	1.27	0.69	0.11	11.88
1958	0.20	0.32	0.81	0.38	1.78	1.02	3.96	1.37	0.28	0.02	0.67a	0.91	11.72
1959	0.43	0.71	0.83	0.84	1.84	1.30	0.20	0.17	2.45	1.27	0.04	0.06	10.14
1960	0.28	0.43	0.42	1.53	0.87	2.12	1.45	0.58	0.41	0.18	1.64	0.29	10.20
1961	0.13	0.28	0.89	0.80	1.18	0.66	1.40	0.60	1.94	0.87	0.82	0.26	9.83
1962	0.65	0.65	0.68	0.90	2.73	1.72	1.32	0.54	0.32	1.42	0.23	0.07	11.23
1963	0.78	0.33	0.76	2.15	0.20	1.29	0.63	1.04	1.29	0.05	0.03	0.21	8.76
1964	0.24	0.28	1.43	2.45	0.80	2.11	0.36	0.50	0.70	0.00	0.13	0.51	9.51
1965	0.15	0.28	0.24	1.29	1.71	1.55	2.89	0.51	2.75	0.34	0.74	0.52	12.97
1966	0.02	0.25	0.06	0.60	0.31	0.84	2.04	0.63	1.07	0.86	0.51	0.16	7.35
1967	0.44	0.36	0.87	0.48	1.45	3.40	-999z	-999q	0.81	0.76	1.04	0.75	10.36b
1968	0.16	0.33	0.26	2.01	1.61	0.65	2.12	0.51	0.60	-999s	0.37	0.19	8.81a
1969	0.15	0.50	0.39	0.85	0.61	2.66	0.36	0.26	0.02	1.86	0.20	0.38	8.24
1970	0.13	0.11	0.58	1.41	0.60	2.05	0.81	0.16	1.22	0.86	0.35	0.16	8.44
1971	0.19	0.32	0.65	1.42	2.31	0.03	0.69	1.28	1.07	0.72	0.20	0.85	9.73
1972	0.71	0.22	0.16	1.35	0.96	1.65	0.12	1.97	0.96	2.47	0.77	0.88	12.22
1973	0.61	0.56	2.18	2.56	0.68	0.48	4.47	0.30	4.23	0.07	-999z	-999z	16.14b
1974	-999z	-999z	-999z	-999z	-999z	1.88	0.25	0.26	1.21	1.25	0.00	0.17	5.02e
1975	1.40	1.70	1.87	0.67	1.80	0.44	2.01	0.60	0.94	0.75	0.50	3.22	15.90
1976	1.10	0.85	0.50	1.61	0.94	1.10	0.42d	1.13	0.14	0.17	0.18	0.43c	8.57
1977	0.77	0.08	0.43	1.79	1.49	0.62	1.40	0.93	0.00	1.18	0.81	0.10	9.60
1978	0.69	0.56	0.67	0.94	3.48	0.48	0.70	1.25	0.70	1.16	-999z	-999z	10.63b

Appendix 2.1.4.E. Precipitation data - Medicine Bow station

ID: 486120
Latitude: 41.90 degrees
Longitude: -106.20 degrees
Elevation: 6570 feet
Station period of record: 11/08/1881-07/31/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1979	-999z	-999z	-999z	-999z	0.90	0.27	0.00	3.27	0.10	1.90	0.56	0.40	7.40d
1980	1.19	1.80	0.79	-999z	0.76	0.00	0.09	0.93	0.62	2.01	0.25	0.00b	8.44a
1981	0.07	0.05	0.50	1.40	3.90	0.02	1.25	0.00	1.00	-999z	-999z	-999z	8.19c
1982	-999z	0.46	0.93	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
1983	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1984	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1985	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1986	-999z	-999z	-999z	-999z	-999z	-999z	-999z	1.94	0.64	1.36	0.61d	0.01	-999g
1987	0.08	0.44	0.18	0.19b	2.18	1.10	0.60	1.22	0.34	0.36	0.37	0.92	7.98
1988	0.41a	0.30	0.38	0.45a	1.18	1.12	0.20	0.49	0.32	0.00	0.30c	0.19	5.34
1989	0.00	1.53	0.41	0.40	1.09	3.47	0.87	0.88	2.21	0.01	0.25	0.18	11.30
1990	0.34	0.43	1.73	0.76	0.49	0.00	1.28	0.86	2.17	0.54	0.93	0.41	9.94
1991	0.19	0.05	0.10a	0.42	3.29	2.03	1.15a	0.65	0.24	0.42	1.18	0.10	9.82
1992	0.24	0.30	0.85	0.79a	3.27b	0.77	4.06	0.51	0.62	0.54	0.82	0.59	13.36
1993	0.54a	0.73	0.34	1.40	1.49	2.07	0.39	1.27	-999f	-999g	0.69d	0.22a	9.14b
1994	0.25	0.50	0.27	0.74	0.84	1.96	1.91	0.39	0.21b	1.17	0.58	0.41	9.23
1995	0.30	0.68	0.25a	1.99a	4.80b	2.26	1.36	0.35a	1.95	1.07	0.42d	0.18b	15.61
1996	0.87c	0.22	0.30	1.32	1.77	0.76	0.69	0.32	0.78a	1.18	0.76b	0.31b	9.28
1997	0.72c	0.54a	0.39	1.14	1.14	2.15b	0.30b	2.04	1.69b	0.24	0.31a	0.37b	11.03
1998	0.18c	0.36b	0.84	0.59	1.27	2.60a	2.59b	1.07b	0.70	2.57	0.31	0.78	13.86
1999	0.74a	0.13	0.24	2.41	1.25a	1.01	0.75b	0.33	0.38	0.33	0.51	0.17	8.25
2000	0.25b	0.90a	0.66	0.86b	2.61	1.48	0.51	0.70	2.13	0.23a	0.35	0.38a	11.06
2001	0.32	0.86	0.45	2.03	1.35a	0.20	0.95	0.87	0.49	0.83	0.67	0.15	9.17
2002	0.19	0.36	1.99	0.77	0.68	0.55	0.39b	1.96	1.21	0.60	0.49c	0.12	9.31
2003	0.18	0.78	1.84	2.09	0.93a	1.85	0.20	1.13b	1.54	0.77	0.96	0.37e	12.64
2004	0.06	0.79	0.17	1.33	1.20b	2.46	0.48	-999z	-999z	-999z	-999z	-999z	6.49e

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Precipitation data - Muddy Gap station

ID: 486595
Latitude: 42.36 degrees
Longitude: -107.44 degrees
Elevation: 6248 feet
Station period of record: 10/19/1949-07/03/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1949	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999r	0.03	1.96	-999j
1950	0.30	0.08	0.42	1.71	2.02	2.17	0.70	0.32	1.60	0.41	0.27	0.30	10.30
1951	0.38	0.43	0.93	1.01	2.06	1.66	0.36	0.27	0.59	1.28	0.30	0.32	9.59
1952	0.05	0.77	0.64	0.56	3.16	1.10	0.50	1.26	0.00	0.16	0.32	0.14	8.66
1953	0.21	0.86	0.85	1.50	2.78a	0.60	0.07	2.51	0.02	0.00	0.52	0.47	10.39
1954	0.20	0.20	0.51	0.08	1.40	2.80	0.94	0.12	0.13	0.80	0.22	0.25	7.65
1955	0.43	0.73	0.07	0.33	0.63	0.30	0.76	0.39	1.02	0.20	0.63	0.94	6.43
1956	0.30	0.03	0.19	0.70	1.09	0.00	2.19	0.71	0.10	0.80	0.61	0.47	7.19
1957	0.07	0.21	0.91	2.53	4.50	1.24	3.01	1.64	0.57	1.45	0.77	0.20	17.10
1958	0.13	0.02	0.93	0.88	2.02	1.75	1.48	0.60	0.40	0.10	0.36	0.42	9.09
1959	0.28a	0.94	0.86	0.47	3.04	0.78	0.00	0.28	2.87	0.30	0.14	0.12	10.08
1960	0.32	0.62	0.25	0.81	0.87	0.87	0.22	0.16	0.50	0.30	0.58	0.36	5.86
1961	0.07	0.71	0.33	0.62	1.42	0.92	0.66	0.48	1.34	1.15	0.20	0.04	7.94
1962	0.24	0.15	0.71	1.60	1.96	0.23	1.05	0.34	0.63	1.10	0.18	0.05	8.24
1963	0.31	0.14	1.03	1.28	0.16	2.48	0.52	1.27	0.87	0.21	0.22	0.43	8.92
1964	0.29	1.18	0.67	1.47	4.67	0.77	0.00	0.01	0.50	0.12	0.35c	0.27	10.30
1965	0.27	0.22	0.07	1.64	3.37	1.54	1.27	0.81	1.34	0.17	0.00	0.83	11.53
1966	0.06	0.84	0.24	0.39	0.93	1.19	1.03	1.16	0.41	1.97	0.62	0.49	9.33
1967	-999z	0.29	0.23	0.56	2.62	2.11	0.66	0.09	0.76	0.78	0.62	1.10	9.82a
1968	0.10	0.32	0.62	1.76	1.40	0.70	0.34	1.02	0.15	0.06	0.33	0.90	7.70
1969	0.00	0.20	0.59	0.87	0.51	0.51	0.09	0.15	0.05	0.95	0.46	0.16	4.54
1970	0.09	-999h	1.06	2.19	0.50	2.72	0.45	0.62	0.56	0.74	0.73	0.76	10.42a
1971	0.36	0.49	0.11	1.40	4.05	0.19	0.33	0.25	1.89	2.26	0.40	0.25	11.98
1972	0.45	0.33	0.19	1.89	1.35	0.89	0.59	1.05	0.12	3.26	0.52	1.21	11.85
1973	0.78	0.25	0.40	2.29a	0.10	0.06	2.60	0.00	-999z	0.34	0.88	0.94	8.64a
1974	0.51	1.64	0.19	2.76	0.20	1.32	1.82	0.50	0.91	1.07	0.34	1.00	12.26
1975	0.61	0.41	0.62a	0.43	4.32	0.60	2.18	0.00	0.48	0.55	0.10b	0.29	10.59
1976	0.49	0.44	0.25	0.33b	0.70	1.09	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1977	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1978	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.18	1.25	-999z	-999j
1979	0.30	0.17	0.95b	0.97	2.86	-999z	-999z	3.69	0.02	-999z	-999z	-999z	-999e
1980	-999z	-999z	-999z	0.49	2.48	0.00	0.00	1.24	0.06	0.83	0.88	0.05	6.03c
1981	0.17	0.08	2.98	0.94	3.08	0.00	0.94	0.77	1.03	0.56	-999z	0.07	10.62a
1982	0.25a	0.09	0.46	0.57	1.57a	1.17	0.62	0.14	4.28	1.07	1.01	0.54	11.77
1983	0.25	0.47b	1.05	2.47	1.66	1.22	0.72a	0.81	0.41	1.14	3.37	0.89	14.46
1984	0.41	0.56	0.79	2.57	0.68	0.57	2.65	0.59	0.55	0.43	0.27	0.32	10.39
1985	0.53	0.57	0.73	1.65	0.69	1.46	1.32	0.05	1.55	0.09	0.78	0.86	10.28
1986	0.17	0.70	1.98	-999z	1.94	1.56	0.68	0.65	0.44	1.94	0.95	0.06	11.07a
1987	1.25	0.52	0.58	0.69	1.79	1.63	1.13a	1.16	0.31	0.72	0.92	0.77	11.47
1988	0.57a	0.27	1.35	0.87	1.88	0.06	0.10	0.31	2.30	0.00	0.20c	1.01	8.92
1989	0.25b	1.35	0.49	0.36	1.59	0.56	1.75	0.77	1.65	0.41	0.49	0.43	10.10
1990	0.06	0.42	1.32	1.22	1.65a	1.15	1.64	0.03	1.63	1.19	1.80	0.74	12.85
1991	0.3	0.29	0.20c	1.71	5.11	2.23	0.77	0.38	0.71	0.58	1.54	0.04	13.86
1992	0.26	0.06b	1.22	0.76	4.29	1.16	1.15	0.52	0.24	0.14	1.74	0.74a	12.28
1993	0.62	0.27c	0.88	-999e	1.72	1.73a	0.96	0.21	0.75	1.75	0.30	0.47	9.66a
1994	0.28	0.39	0.18b	0.97	0.28	0.25	-999s	-999e	0.72	2.17	1.08	-999n	6.32c
1995	-999p	0.47	0.14	1.48	4.53c	1.82	-999v	0.00	-999g	2.46	-999m	0.22	-999d
1996	0.56	0.15	0.89	1.52	3.55	0.54	0.02	0.13	0.73	1.64	1.01	0.52b	11.26

Appendix 2.1.4.E. Precipitation data - Muddy Gap station

ID: 486595
Latitude: 42.36 degrees
Longitude: -107.44 degrees
Elevation: 6248 feet
Station period of record: 10/19/1949-07/03/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1997	-999z	0.60	0.68	2.25	2.17b	1.42	0.80b	1.25	0.85	0.44a	0.33	0.75	11.54a
1998	0.07	0.70	3.85	0.53	-999z	2.80	1.31	0.28b	1.06c	2.15	0.54	0.41	13.70a
1999	0.48	0.15a	0.09	3.06	0.92a	0.21	0.03	1.03a	-999i	0.02	0.25	0.02	6.26a
2000	0.00a	0.26	1.07	0.71	1.93	0.72	0.02a	0.39	0.68	0.60	0.20	0.14	6.72
2001	0.17	0.53	0.00a	0.93	0.03a	-999z	0.62a	0.77	0.94	0.00	0.64	0.00	4.63a
2002	0.00	0.00	0.00	0.94a	0.88	0.25	0.64	0.77a	0.00	0.55a	0.25	0.20	4.48
2003	0.00	0.59	1.70	-999d	1.26	2.68	0.05	0.48b	1.34	1.03	-999z	0.55	9.68b
2004	-999z	0.00	-999z	2.38	0.55	1.42a	-999z	-999z	-999z	-999z	-999z	-999z	-999h
Max value	1.25	1.64	3.85	3.06	5.11	2.80	3.01	3.69	4.28	3.26	3.37	1.96	17.10
Min value	0.00	0.00	0.00	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.48
Mean	0.30	0.43	0.73	1.24	1.94	1.12	0.87	0.65	0.83	0.84	0.62	0.49	9.90
Median	0.28	0.39	0.62	0.97	1.69	1.10	0.69	0.49	0.66	0.60	0.49	0.43	10.19
No. years	48.00	51.00	51.00	50.00	52.00	51.00	48.00	50.00	48.00	51.00	49.00	50.00	36.00

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E Precipitation data - Casper WSO AP station

ID: 481570
Latitude: 42.90 degrees
Longitude: -106.46 degrees
Elevation: 5338 feet
Station period of record: 03/17/1950-10/07/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1950	-999z	-999z	-999p	2.16	1.97	1.50	0.88	0.02	3.11	0.74	0.37	0.26	11.01c
1951	0.27	0.16	0.44	1.31	1.45	1.53	3.05	0.10	1.12	0.88	0.20	0.42	10.93
1952	0.00	0.75	1.56	0.20	3.93	1.06	0.58	0.61	0.25	0.46	0.57	0.03	10.00
1953	0.53	1.00	0.25	0.94	1.60	1.07	1.52	0.98	0.21	0.16	0.72	0.74	9.72
1954	0.45	0.37	2.43	0.30	0.70	0.62	0.38	0.29	0.23	1.36	0.25	0.32	7.70
1955	0.59	1.01	0.99	1.44	0.73	2.07	0.27	0.81	0.65	0.47	1.19	1.04	11.26
1956	0.44	0.45	0.71	1.56	1.97	0.03	0.76	0.77	0.07	0.28	1.30	0.59	8.93
1957	0.42	0.15	0.91	2.45	3.85	1.93	1.00	1.13	1.08	2.00	0.77	0.43	16.12
1958	0.11	0.38	2.27	1.95	0.78	1.32	0.96	1.00	0.34	0.02	1.06	0.23	10.42
1959	0.58	0.61	1.32	0.74	1.99	1.79	0.27	0.23	1.99	0.71	0.27	0.25	10.75
1960	0.71	0.85	0.42	1.06	0.56	0.40	0.59	0.57	0.41	0.27	1.03	0.47	7.34
1961	0.04	0.51	1.16	0.95	0.71	0.54	1.21	0.08	2.46	1.12	0.56	0.62	9.96
1962	0.85	0.44	0.55	0.93	3.80	1.75	1.24	0.25	1.14	2.49	0.34	0.23	14.01
1963	0.38	0.49	0.35	2.07	0.80	0.94	1.20	0.39	0.33	0.33	0.31	0.31	7.90
1964	0.75	0.72	0.66	3.09	2.17	0.59	0.73	0.47	0.34	0.23	0.66	0.47	10.88
1965	0.78	0.37	0.52	0.96	2.64	2.47	1.16	0.21	2.07	0.00	0.07	0.87	12.12
1966	0.30	0.43	0.49	1.29	0.30	1.12	0.46	1.03	0.39	1.33	0.43	0.57	8.14
1967	0.58	0.65	0.66	1.24	1.62	3.75	1.46	0.41	1.67	1.37	1.09	0.82	15.32
1968	0.33	0.46	0.92	1.18	3.35	1.86	1.02	0.61	0.30	0.58	0.56	0.71	11.88
1969	0.08	0.55	1.10	1.52	0.85	2.39	0.70	0.78	0.16	1.43	0.96	0.16	10.68
1970	0.59	0.27	1.53	1.57	2.03	2.03	0.73	0.16	0.21	1.01	1.01	0.89	12.03
1971	0.19	0.80	1.17	3.40	5.59	0.17	0.11	0.11	0.74	1.73	0.61	0.34	14.96
1972	0.99	0.41	1.41	1.44	0.76	0.83	1.04	1.52	0.37	2.04	0.66	0.41	11.88
1973	0.63	0.57	0.52	3.86	1.02	0.66	2.26	0.34	3.28	0.60	0.80	0.55	15.09
1974	0.69	0.42	0.37	3.92	0.62	0.60	0.75	1.00	0.83	1.15	0.46	0.22	11.03
1975	0.51	0.51	2.01	0.97	3.88	0.94	0.63	0.12	0.11	1.01	0.51	0.72	11.92
1976	0.44	0.89	0.50	1.52	2.69	1.66	1.07	0.31	1.15	1.21	0.09	0.38	11.91
1977	0.35	0.69	1.05	1.07	1.93	0.19	1.88	0.34	0.30	0.71	0.79	0.71	10.01
1978	0.70	0.75	0.93	1.05	6.46	1.40	2.62	0.93	0.26	0.40	0.94	1.20	17.64
1979	0.81	0.39	1.31	0.83	2.25	1.31	1.22	2.66	0.18	0.50	0.75	0.36	12.57
1980	0.81	0.63	1.19	0.35	2.82	0.10	0.85	0.65	0.10	0.64	0.74	0.37	9.25
1981	0.46	0.23	0.77	1.56	3.51	0.37	1.27	0.50	0.23	0.76	0.75	0.43	10.84
1982	0.41a	0.33	0.60	1.25	2.10	4.15	1.92	0.88	3.40	1.18	0.55	3.71	20.48
1983	0.42	0.35	2.29	2.28	1.40	3.76	2.61	0.75	0.20	0.88	2.72	0.75	18.41
1984	1.19	0.48	1.59	2.23	1.33	1.34	2.26	0.25	0.50	0.71	0.70	0.78	13.36
1985	0.79	0.61	0.52	1.25	1.37	1.32	1.57	0.09	1.09	0.46	1.56	1.05	11.68
1986	0.36	0.89	0.55	1.89	1.33	4.06	0.88	0.27	1.31	2.63	1.48	0.27	15.92
1987	1.42	1.42	1.43	0.35	1.40	0.70	1.93	1.80	0.59	0.55	0.77	0.63	12.99
1988	0.28	0.79	0.71	0.71	1.24	0.28	0.55	0.16	0.74	0.12	0.48	0.50	6.56
1989	0.16	1.37	0.49	0.72	2.77	1.95	0.28	1.00	3.22	1.17	0.34	0.31	13.78
1990	0.27	0.70	1.13	1.35	1.09	0.66	2.15	1.89	0.52	0.90	1.27	0.61	12.54
1991	0.54	0.38	0.45	1.42	4.75	1.70	0.09	0.61	0.40	0.55	1.18	0.34	12.41
1992	0.17	0.35	1.27	0.08	2.05	0.79	1.51	0.86	0.29	0.22	0.90	0.88	9.37
1993	0.72	1.00	0.52	2.37	2.85	2.79	0.86	1.14	0.97	1.14	0.87	0.68	15.91
1994	0.60	0.82	0.57	0.90	0.37	0.22	2.66	0.85	0.68	4.17	1.79	0.37	14.00
1995	0.84	0.95	0.50	1.66	6.31	3.62	0.43	0.04	2.56	1.07	0.62	0.34	18.94
1996	0.94	0.24	0.56	1.72	1.29	0.83	1.26	0.32	0.47	1.63	1.06a	0.51	10.83
1997	0.57	0.69	0.92	1.79	1.99	1.21	1.46	0.76	1.21	0.83	0.08	0.53	12.04

Appendix 2.1.4.E Precipitation data - Casper WSO AP station

ID: 481570
Latitude: 42.90 degrees
Longitude: -106.46 degrees
Elevation: 5338 feet
Station period of record: 03/17/1950-10/07/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1998	0.49	0.56	0.52	1.00	0.73	2.67	1.99	0.59	0.79	4.62	0.42	0.10a	14.48
1999	0.22	0.30	0.45	1.53	2.29	1.78	0.24	0.11	1.30	0.25	0.36	0.10	8.93
2000	0.46	0.54	0.58	1.18	3.32	0.86	0.22	0.95	1.65	0.38	0.20	0.36	10.70
2001	0.31	0.38	0.18	1.07	0.63	0.29	1.19	0.31	1.09	0.42	0.76	0.13	6.76
2002	0.04	0.17	0.64	0.77	1.15	0.51	1.07	0.53	1.12	0.59	0.24	0.19	7.02
2003	0.1	0.51	0.97	1.54	0.51	4.69	0.40	1.68	1.38	0.60	0.30	0.39	13.07
2004	0.03	0.64	0.12	1.17	1.07	0.54	2.59	0.44a	1.73	-999x	-999z	-999z	8.33c
Max value	1.42	1.42	2.43	3.92	6.46	4.69	3.05	2.66	3.40	4.62	2.72	3.71	20.48
Min value	0.00	0.15	0.12	0.08	0.30	0.03	0.09	0.02	0.07	0.00	0.07	0.03	6.56
Mean	0.49	0.58	0.89	1.44	2.05	1.45	1.16	0.65	0.97	0.98	0.73	0.55	11.95
Median	0.46	0.53	0.69	1.29	1.62	1.21	1.04	0.57	0.68	0.73	0.68	0.43	11.88
No. years	54.00	54.00	54.00	55.00	55.00	55.00	55.00	55.00	55.00	54.00	54.00	54.00	53.00

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Precipitation data - Glenrock 5 ESE station

ID: 483950
Latitude: 42.83 degrees
Longitude: -105.79 degrees
Elevation: 4948 feet
Station period of record: 07/01/1941-06/30/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1941	-999z	-999z	-999z	-999z	-999z	-999z	1.39	-999u	0.55	1.80	0.29	-999z	-999h
1942	0.32	0.28	0.10	-999s	2.90	0.25	0.57	0.77	1.12	2.91	1.44	0.33	10.99a
1943	0.52	0.12	1.27	1.65	2.22	1.71	0.27	0.53	1.88	1.31	0.40	0.33	12.21
1944	0.59	0.33	3.07	0.83	2.32	1.94	2.50	0.05	1.22	0.48	0.36	0.40	14.09
1945	0.31	0.59	0.94	4.40	1.13	3.46	0.61	0.75	1.89	0.77	0.44	0.73	16.02
1946	0.25	0.15	0.40	0.57	5.33	1.80	0.39	0.18	-999t	1.07	0.31	0.68	11.13a
1947	-999y	0.72	-999u	-999p	-999t	-999j	0.92	0.50	0.28	0.94	1.91	0.72	-999e
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.83	0.73	0.61	0.38	0.86	-999g
1949	1.34	0.41	0.15	1.08	3.17	0.91	1.36	0.31	0.52	1.80	0.11a	0.13	11.29
1950	0.91	0.29	1.17	2.01	1.84	2.32	0.56	0.17	1.50a	0.08	0.34	0.04	11.23
1951	0.48	0.02	0.72	1.64	2.18	2.05	1.01	0.78	1.10	2.68	0.00	0.61	13.27
1952	0.90	1.50	1.27	0.28	5.32	2.43	0.69	0.99	0.64	0.18	0.76	0.06	15.02
1953	0.31	0.53	0.11	1.51	3.31	0.94	1.42	2.13	0.31	0.24	0.34	0.28	11.43
1954	0.22	0.06	1.73	0.64	2.10	0.49	0.52	0.46	0.16	1.56	0.12	0.25	8.31
1955	0.47	0.66	0.71	2.63	1.53	2.97	0.55	1.30	0.37	0.77	0.49	0.33	12.78
1956	0.24	0.46	0.43	1.77	2.77	0.57	0.65	0.82	0.36	0.31	1.31	0.47	10.16
1957	0.15	-999z	-999z	2.37	3.11	2.43	0.95	1.58	0.91	1.37	0.19	0.21	13.27b
1958	0.50	0.31	1.22	1.58	0.96	1.34	1.78	0.04	0.20	0.09	0.41c	0.28	8.71
1959	0.57	0.20	-999h	0.31	2.69	2.20	0.44	0.09	1.83	0.86	0.11	0.08	9.38a
1960	0.45	0.26	0.52	0.57	1.31	0.61	1.33	0.69	0.25	-999z	2.06	0.57	8.62a
1961	0	0.67	1.35	0.69	1.79	1.23	1.46	0.32	3.20	1.81	0.69	0.08	13.29
1962	0.55	0.48	0.18	0.69	5.51	4.27	2.57	0.60	0.30	2.24	0.61	0.25	18.25
1963	0.48	0.12	0.29a	-999z	1.11	3.55	0.52	0.88	3.22	0.17	0.35	0.15	10.84a
1964	1.05	0.79	0.58a	2.97	2.63	1.34	0.85	0.33	0.45	0.29	0.09	0.43	11.80
1965	1.02	1.21	0.43	0.11	3.93	3.38	1.25	0.98	2.38	0.11	0.02	0.66a	15.48
1966	0.22	0.67	0.40	1.04	0.45	1.72	0.62	1.29	0.79	1.37	0.19	0.35	9.11
1967	0.51	0.20	1.20	1.73	2.87	6.41	2.95	0.72	1.12	1.52	0.84	0.49	20.56
1968	0.42	0.32	0.88	1.78	2.29	3.25	0.21	0.81	0.39	0.44	0.26	0.67	11.72
1969	0.16	0.59	0.51a	1.67	1.12	4.30	0.46	0.26	0.25	0.92	0.69	0.15	11.08
1970	0.98	0.28	1.78	1.68	0.94	3.70	2.10	0.00	0.20	1.73	0.89	0.60	14.88
1971	0.54	1.08	0.71	5.28	7.70	1.06	0.19	0.95	1.92	1.70	0.72	0.00	21.85
1972	1.10	0.26	0.41	2.22	2.28	3.09	0.67	2.04	0.80	1.98	0.30	0.80	15.95
1973	0.84	0.13b	1.33	5.67	0.90	0.46	4.16	0.35	5.43	0.31	0.59	0.48	20.65
1974	0.36	0.57	0.25	1.78	0.30	0.00	0.50	1.00	0.80	1.00	0.00	0.29c	6.85
1975	0.16	0.04c	3.02	0.24	1.23c	1.16	0.54	1.07	0.45	1.42	0.07c	0.26b	9.66
1976	0.15	0.39	0.29	3.19	3.84	1.57	-999z	0.12	1.70	1.50	0.09	0.00c	12.84a
1977	0.06	-999d	0.55	1.84	2.24	0.15	4.24	1.23	0.26	1.12	1.41	0.25a	13.35a
1978	0.10b	0.38	0.52	1.73	6.18	0.56	1.27	1.50	0.19	0.95	0.30	-999z	13.68a
1979	-999z	0.08a	0.85a	1.04	1.49	0.85	1.41	1.30	0.36	0.39	2.54	0.17	10.48a
1980	0.92	0.41	0.48	0.33	2.30	0.00b	0.15	1.00	0.16	0.22	0.84	0.29	7.10
1981	0.32	0.10	0.89	1.86	3.74b	0.24	1.60	0.35	0.36	0.61	0.01a	0.28	10.36
1982	0.60a	0.06b	0.13	2.69	2.80	4.26	0.24	0.14	1.91	0.77	-999e	1.25	14.85a
1983	0.00	0.05a	1.99	1.22	1.87	2.83c	0.37	0.63	0.06	0.69	2.44	-999e	12.15a
1984	0.10	0.15a	0.70a	-999d	1.44	0.00	1.18b	0.85	-999d	1.12	0.15	0.32	6.01b
1985	0.19	0.03a	-999z	1.29b	1.51	1.54b	0.90	0.34	-999j	1.01b	-999f	0.75c	7.56c
1986	0.01	0.51a	-999z	1.46	1.40	2.39	0.49	0.20	0.87	1.55	0.79	0.10b	9.77a
1987	0.30c	-999w	1.30a	0.08a	1.55	0.23a	0.87	0.87	0.50	0.00a	0.52	0.95a	7.17a
1988	0.11	0.77	0.48	0.07	1.29a	0.65	0.76	0.40	0.66	0.18	0.75b	-999g	6.12a

Appendix 2.1.4.E. Precipitation data - Glenrock 5 ESE station

ID: 483950
Latitude: 42.83 degrees
Longitude: -105.79 degrees
Elevation: 4948 feet
Station period of record: 07/01/1941-06/30/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1989	0.15	1.17a	0.21	1.86	2.06	1.51a	0.91	1.12	3.59	0.99	0.11	0.20	13.88
1990	0.36	0.31	0.87	2.14	1.52	0.49	3.31	0.90	0.21	1.19	1.08	0.38	12.76
1991	0.31	0.22	0.38	1.25b	5.40	1.91	0.58	0.69	0.30	0.77	0.54	0.00	12.35
1992	0.20	0.38	1.65	0.15	1.93	2.32	1.75	0.48	0.76	1.65	0.92	0.67	12.86
1993	0.27	1.06	0.58	1.55	0.81	2.85	1.18c	0.42	1.08	0.92	1.55	0.50	12.77
1994	0.37	0.57	0.25	1.24	0.27	0.29a	1.83	0.06	0.45a	1.97	0.79	0.27	8.36
1995	0.66	0.67	0.51	1.52	5.30	2.39	0.53	0.09	2.83	1.99	0.78b	0.12a	17.39
1996	0.26	0.02	0.79	3.17b	2.27	0.31a	0.30	0.02	0.74	1.58a	0.84	-999d	10.30a
1997	0.69b	1.33	0.53a	0.85b	1.61	1.33a	1.38	2.09	0.81	0.17a	0.11	0.21a	11.11
1998	0.31a	0.39	1.09b	1.05a	0.92	1.66	0.99	0.82	1.05	3.43	0.32	0.01	12.04
1999	-999e	0.09	0.15	3.17a	1.37	2.84	0.37	0.08	2.78a	0.31	0.14	0.05	11.35a
2000	0.28	0.42c	0.64	2.33	3.24	1.07	0.08a	0.56a	1.37	-999e	1.04a	0.38c	11.41a
2001	0.31a	0.79	0.18	-999d	-999d	0.02b	1.82a	0.76	0.97a	-999e	0.50a	0.02	5.37c
2002	0.00	0.09a	1.20a	-999e	1.60b	0.12	0.99b	0.50	1.13c	0.94	0.20	0.00	6.77a
2003	0.19	-999d	2.58	-999j	0.20c	-999d	0.40	1.04	-999g	0.05c	0.00c	-999z	-999e
2004	0.07a	0.66a	-999z	0.23	-999z	2.12c	-999z	-999z	-999z	-999z	-999z	-999z	-999h

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Precipitation data - Douglas 1 ESE station

ID: 482685
Latitude: 42.75 degrees
Longitude: -105.36 degrees
Elevation: 4870 feet
Station period of record: 04/01/1909-10/06/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1909	-999z	-999z	-999z	0.88	2.92	2.80	0.41	0.58	1.37	0.75	-999z	0.93b	-999d
1910	0.69	0.52	-999z	-999z	-999z	-999z	-999z	-999z	0.55b	1.11a	0.21	0.45	-999f
1911	0.59	0.47a	0.30	2.38	2.16	2.30	0.28	0.85	0.76	1.90	0.48	0.58	13.05
1912	0.66	0.92b	0.98	3.27	-999z	0.88	2.23	1.35	2.71	1.75	0.39	0.03	15.17a
1913	0.22	0.68	0.47	0.75	0.30	0.83	1.73	0.47	0.66	1.23	0.23	1.20	8.77
1914	0.26	0.44	0.20	2.45	1.75	0.40	1.54	0.00	0.40	1.35	0.32	0.44	9.55
1915	0.41	1.36	1.02	2.97	3.16	3.11	1.67	1.39	3.80	0.83	0.53	0.70	20.95
1916	0.08	0.50	0.77	0.96	1.03	0.71	0.39	1.47	0.38	1.74	0.44	0.26	8.73
1917	0.09	0.24	1.03	2.35	4.11	0.91	0.00	0.54	0.43	0.78	0.07	0.25a	10.80
1918	0.92	0.30	0.35	2.17	1.67	2.07	2.40	1.64	2.70	0.20	0.39	0.42	15.23
1919	0.00	0.46	0.48	2.36	0.83	0.61	1.41	0.23	1.10	2.63	0.83	0.55	11.49
1920	0.16	0.76	0.15	3.44	1.81	1.54	1.73	1.46	0.75	1.14	0.59a	0.55	14.08
1921	0.88	0.19	0.12	1.36	3.23	3.36	1.48	0.39	0.37	0.23	0.68	0.85	13.14
1922	0.47	0.19	0.02	1.67	3.54	1.60	0.50	1.39	0.00	0.49	0.92	0.64	11.43
1923	0.23	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	1.68	0.11	1.27	-999h
1924	0.20	0.89	0.91	1.31	1.79	-999z	-999z	-999z	-999z	2.80	0.87	0.73	-999d
1925	0.31	0.53	0.58	0.87	2.54	2.93	1.02	0.98	0.76	2.09	0.23	1.19	14.03
1926	0.74	0.55	0.29	1.32	3.23	2.30	4.10	2.53	0.65	1.64	0.59	0.40	18.34
1927	0.25	0.76	1.71	3.39	1.96	2.90	3.34	2.32	1.48	3.15	0.32	0.37	21.95
1928	0.34	0.55	0.62	0.74	3.76	3.10	2.44	0.92	0.59	1.47	0.75	0.44	15.72
1929	0.32	0.26	2.33	1.74	4.21	0.17	0.18	0.55	2.25	0.42	1.19	0.10	13.72
1930	0.15	1.13	1.18	0.74	4.37	0.81	2.75a	3.24	0.24	1.92	0.46	0.52	17.51
1931	0.13	0.29	1.01	1.09	3.04	0.70	1.83	0.64	0.71	1.79	0.59a	0.55	12.37
1932	0.26	0.40	0.73	2.82	1.82	1.73	0.28	1.28	0.33	0.90	1.06	0.79	12.40
1933	0.10	0.40	0.92	2.89	2.56	0.58	2.46	2.93	0.78	0.01	0.48	0.04	14.15
1934	0.50	0.58	0.66	1.42	0.59	2.10	1.08	0.35	1.81	0.43	0.38	0.33	10.23
1935	0.02	0.24	0.45	1.01	4.14	1.09	0.26	0.47	1.04	0.31	0.30	0.80	10.13
1936	0.46	0.77	0.49	0.80	0.17	2.34	0.76	1.82	1.11	0.98	0.91	0.41	11.02
1937	0.34	0.52	1.29	1.64	1.66	1.21	3.23	1.14	0.97	0.83a	0.82	0.30	13.95
1938	0.73	0.15	0.26	2.49	2.06	0.73	1.03	0.64	2.76	0.25	0.49	0.47	12.06
1939	0.23	0.66	0.43	1.06	1.57	2.52	0.32	0.78	1.15	1.07	0.00	0.19	9.98
1940	0.69	0.44	0.24	3.53	0.43	0.14	0.49	0.58	1.91	0.28	0.70	0.20	9.63
1941	0.43	0.23	0.72	5.26	1.19	1.66	1.23	2.06	0.94	1.39	0.43	1.34	16.88
1942	0.30	0.44	0.31	4.39	3.44	2.87	0.88	0.26	1.58	2.97	1.61	0.32	19.37
1943	0.45	0.27	1.30	1.48	2.43	2.88	0.33	0.31	0.92	0.94	0.59	0.56	12.46
1944	1.2	0.32	2.06	1.28	1.68	1.41	2.46	0.30	0.53	0.35	1.57	0.81	13.97
1945	0.33	0.84	0.78	3.00	1.81	4.81	1.76	1.39	1.89	0.46	0.77	1.44	19.28
1946	0.45	0.43	0.87	0.85	4.68	2.41	0.33	0.39	3.32	1.32	0.49	0.43	15.97
1947	0.47	0.63	0.95	1.55	2.71a	4.45	0.33	1.80	0.45	0.96	1.93	0.56	16.79
1948	0.40	1.31	0.36	0.82	1.22	2.14	1.06	1.62	1.37	1.02	0.55	0.67	12.54
1949	2.36	0.11	0.64	1.11	3.83	1.79	2.03	1.14	1.03	1.89	0.31	0.42	16.66
1950	0.67	0.41	1.44a	2.33	2.64	1.44	2.04	0.84	2.53	0.73	0.30	0.17	15.54
1951	0.57	0.18a	0.88	2.07	2.14	2.74	1.18	0.76	0.89	2.12	0.08	0.42	14.03
1952	0.23	1.24	1.38	0.31	3.42	1.03	1.26	1.07	0.42	0.33	1.18	0.23	12.10
1953	0.62	1.11	0.27	1.74	0.58	1.12	1.20	0.95	0.23	0.10	0.95	0.47	9.34
1954	0.18	0.24	2.08	0.37	1.16	0.57	0.36	1.24	0.61	1.44	-999z	-999z	8.25b
1955	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1956	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l

Appendix 2.1.4.E. Precipitation data - Douglas 1 ESE station

ID: 482685
Latitude: 42.75 degrees
Longitude: -105.36 degrees
Elevation: 4870 feet
Station period of record: 04/01/1909-10/06/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1957	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1958	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1959	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1960	-999z	0.30a	0.54	0.25	1.71	1.51	1.22	-999z	0.11	0.08	1.13	0.40	7.25b
1961	0.00	0.49	0.62	0.34	1.28	2.17	0.61	0.31	2.58	1.28	0.13	0.04a	9.85
1962	0.69	0.61	0.17	0.70	4.71	4.25	1.71	-999w	-999z	-999z	-999z	-999z	-999e
1963	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1964	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1965	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1966	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1967	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1968	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1969	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1970	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1971	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1972	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1973	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1974	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1975	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1976	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1977	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1978	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1979	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1980	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1981	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1982	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1983	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1984	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1985	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1986	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1987	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1988	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1989	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1990	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1991	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1992	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1993	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1994	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1995	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.78	3.33	2.02	0.60a	0.27	-999g
1996	0.67	0.24	0.77	2.58a	3.17a	0.86	1.13	0.52	0.49	2.92	0.87	0.88a	15.1
1997	0.72	1.06	0.47	2.05	6.94	-999e	2.98	1.74	0.78a	1.17	0.15	0.72	18.78a
1998	1.22	2.11	1.85	1.26	1.5	2.93	-999z	2.37b	1.57	6.77	0.5	0.48	22.56a
1999	0.94	0.25	0.63	5.14	2.15	2.82a	0.45	0.20a	2.94	0.43	0.58	0.23	16.76
2000	0.97	1.31	1.15	3.12	1.77	1.08	0.82	0.64c	3.27a	0	-999z	-999z	14.13b
2001	-999u	1.01a	0.49	1.05c	0.93a	0.81	3.1	0.61	1.1	1.32	0.85	0.03c	11.30a
2002	0.15	0.14	1.60a	0.78b	0.95	0.76	0.91	0.95	1.06	0.92	0.27	0.08	8.57
2003	0.28	0.81	3.75	2.17	2.2	3.81	0.1	1.73	1.99	0.65	0.58	0.45	18.52
2004	0.09	1.28	0.40a	0.80a	0.62	1.99	1.95	0.55	1.73a	-999z	-999z	-999z	9.41c

Appendix 2.1.4.E. Precipitation data - Douglas 1 ESE station

ID: 482685
Latitude: 42.75 degrees
Longitude: -105.36 degrees
Elevation: 4870 feet
Station period of record: 04/01/1909-10/06/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
Max value	2.36	2.11	3.75	5.26	6.94	4.81	4.1	3.24	3.8	6.77	1.93	1.44	21.95
Min value	0	0.11	0.02	0.25	0.17	0.14	0	0	0	0	0	0.03	8.57
Mean	0.47	0.6	0.84	1.83	2.31	1.87	1.35	1.06	1.29	1.26	0.61	0.52	13.74
Median	0.4	0.5	0.66	1.52	2.06	1.7	1.19	0.89	1	1.07	0.54	0.45	13.72
# years	55	56	55	56	55	54	54	54	56	57	54	55	45

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Precipitation data - Douglas

ID: 482690
Latitude: 42.74 degrees
Longitude: -105.39 degrees
Elevation: 4805 feet
Station period of record: 08/01/1948-01/31/1995
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.89	1.32	0.96	0.66	0.52	-999g
1949	0.84	0.08	0.61	1.01	4.25	1.93	1.45	1.11	0.82	1.94	0.17	0.31	14.52
1950	0.48	0.34	1.29	1.97	2.43	1.43	2.43	0.75	1.87	0.47	0.28	0.14	13.88
1951	0.48	0.21	0.76	1.66	2.25	2.53	1.09	0.88	0.99	1.75	0.05	0.21	12.86
1952	0.18	0.63a	1.02	0.25	3.28	1.03	1.22	1.17	0.45	0.35	0.77	0.16	10.51
1953	0.4	0.79	0.13	1.29	0.56	1.28	0.66	0.99	0.09	0.15	0.87	0.34	7.55
1954	0.11	0.34	1.02	0.27	1.35	0.47	0.37b	1.33	0.52	0.85	0.20	0.50	7.33
1955	0.55	0.52	1.10	1.02	1.82	2.84	0.79	0.88	0.44	0.31	0.87	0.61	11.75
1956	0.19	0.29	0.32	1.75	2.38	0.76	0.73	0.64	0.10	0.15	1.21	0.65	9.17
1957	0.28	0.11	1.04	2.18	3.74	2.16	0.95	1.93	1.22	1.30	0.70	0.36	15.97
1958	0.01	0.32	1.30	1.97	1.44	1.24	3.10	0.45	0.33	0.03	0.32	0.63	11.14
1959	0.63	0.37	0.92	0.44	2.44	2.47	0.32	0.13	1.73	0.49	0.33	0.14	10.41
1960	0.26	0.46	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
1961	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1962	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.46	0.88	1.33	0.48	0.31	-999g
1963	0.73	0.29	0.19	2.63	1.07	1.25	1.54	0.48	0.63	0.54	0.14	0.22	9.71
1964	0.25	0.36	0.40	2.47	2.06	1.44	0.21	0.03	0.05	0.10	0.06	0.43	7.86
1965	0.85	0.24	0.23	0.64	3.82	1.88	1.57	1.03	2.02	0.22	0.08	0.72	13.30
1966	0.25	0.55	-999z	0.96	0.37	0.79	0.41	0.61	0.94	1.37	0.29	0.25	6.79a
1967	0.34	0.21	1.09	2.14	2.73	5.70	1.58	0.12	1.09	0.79	0.95	0.42	17.16
1968	0.25	-999z	0.71	2.17	2.90	2.79	0.34	0.86	0.67	-999z	0.34	0.27	11.30b
1969	-999f	0.42	0.60	1.82	1.00	2.93	1.48	0.32	0.00	0.84	0.86	0.26	10.53a
1970	0.56	0.29	1.29	1.86	1.38	3.04	1.96	0.13	0.61	1.06	1.29	0.46	13.93
1971	0.39	0.61	0.42	4.34	5.08	0.75	0.27	0.55	1.51	1.11	0.76	0.07	15.86
1972	1.15	0.21	1.25	2.07	2.13	1.71	2.08	3.25	0.69	1.04	0.35	0.29	16.22
1973	0.12	0.28	1.18	3.19	0.52	0.58	4.61	0.50	-999f	0.12	0.72	0.28	12.10a
1974	0.51	0.18	0.20	1.46	0.23	1.19	0.26	0.58	0.70	0.74	0.22	0.28	6.55
1975	-999z	0.44	1.07	0.30	2.70	1.12	0.56	1.09	1.11	1.02	0.11	0.93	10.45a
1976	0.3	0.58	0.30	3.55	3.11	1.67	0.40	0.10	1.39	0.73	0.20	0.14	12.47
1977	0.31	0.10	0.48	1.97	1.58	0.30	2.18	1.10	0.20	0.54	1.11	0.40	10.27
1978	0.48	0.31	-999k	1.00	4.22	0.59	1.20	0.87	0.09	0.85	0.69	0.44	10.74a
1979	-999l	0.07	0.44	0.74	1.09	1.51	2.78	0.94	-999g	0.33	0.80	0.36	9.06b
1980	0.50	0.64	0.86	0.21	4.40	0.00	-999d	1.15	0.07	0.53	0.28	0.31	8.95a
1981	0.12	0.17	0.82	1.25	3.28	0.29	1.80	0.40	0.11	0.46	0.58	0.14	9.42
1982	0.15	0.13	0.30	0.61	3.02	2.21	3.07	-999z	-999z	-999z	-999z	-999z	-999e
1983	-999z	-999z	2.07	1.08	-999n	2.09	2.51	1.50	0.06	0.40	2.01	0.39a	12.11c
1984	0.37	0.42	0.79	1.70	1.60	1.12a	2.23	0.42	0.55	0.44	0.11	0.64	10.39
1985	0.49	0.42	0.45b	1.04a	1.04	-999i	1.91	0.38	1.86	-999j	1.00	0.51	9.10b
1986	0.17	0.80	0.45	2.68	1.05	4.58b	1.56	0.35	1.34	1.24	1.14	-999z	15.36a
1987	0.33	0.83	1.19	-999g	2.73	0.98b	1.05	0.96	0.98a	0.25	0.90	0.69a	10.89a
1988	0.15	0.47	1.40	0.27	1.26	0.60a	1.14	0.46	0.92	0.00	0.60	0.37	7.64
1989	0.03	0.85	0.37	1.40	1.58	1.59c	0.67	1.92	2.42	0.92	0.24	0.39b	12.38
1990	0.67	0.61	1.81	-999q	2.75	-999f	2.83	0.65	0.47	-999i	1.17	0.24	11.20c
1991	0.30	0.14	0.76b	1.87	7.48	2.71	0.65	0.35	1.04	-999o	-999d	0.14b	15.44b
1992	0.15	0.31	2.01b	0.38	1.87	3.37a	1.39	0.95	0.21	0.07	0.74	0.93	12.38
1993	0.36a	1.50	0.69	3.82	1.18b	4.40	1.07	-999f	1.20	-999i	1.12	0.38a	15.72b
1994	0.45	0.37	0.23	1.14c	1.24	0.20	-999d	1.63	0.46	-999h	0.97	0.53	7.22b
1995	0.49	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999k

Appendix 2.1.4.E. Precipitation data - Douglas

ID: 482690
Latitude: 42.74 degrees
Longitude: -105.39 degrees
Elevation: 4805 feet
Station period of record: 08/01/1948-01/31/1995
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
Max value	1.15	1.50	2.07	4.34	7.48	5.70	4.61	3.25	2.42	1.94	2.01	0.93	17.16
Min value	0.01	0.07	0.13	0.21	0.23	0.00	0.21	0.03	0.00	0.00	0.05	0.07	6.55
Mean	0.38	0.41	0.82	1.57	2.30	1.74	1.42	0.82	0.81	0.68	0.62	0.39	11.56
Median	0.34	0.35	0.76	1.46	2.10	1.44	1.22	0.75	0.70	0.54	0.66	0.36	11.45
No. years	41.00	42.00	41.00	41.00	42.00	41.00	41.00	43.00	42.00	38.00	43.00	43.00	26.00

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Precipitation data - Torrington Experimental Farm station

ID: 488995
Latitude: 42.08 degrees
Longitude: -104.22 degrees
Elevation: 4098 feet
Station period of record: 01/01/1922-06/30/2004
Units: inches of precipitataion

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1922	1.20	0.26	0.45	2.82	3.15	3.46	2.47	1.37	0.80	0.20	2.55	0.47	19.20
1923	0.00	0.19	0.13	2.00	3.28	4.47	1.58	1.16	1.47a	2.52b	0.40	0.47	17.67
1924	0	0.14	0.45	0.29	1.45	0.74	0.65	0.63	1.70	2.12	0.36	0.57	9.10
1925	0.00	0.06	0.55	2.02	2.06	1.90	1.89	1.27	0.34	2.13	0.08	1.31	13.61
1926	0.16	0.45	0.38	0.67	3.23	2.05	2.13	2.71	1.28a	1.37	0.50	0.16	15.09
1927	0.31	0.51	1.62	1.59	1.94	2.95	1.31	1.39	1.20a	0.57	0.18	0.20	13.77
1928	0.04a	0.71	0.62	0.31	2.43	4.57	3.93	0.41	0.24	1.60	1.46	0.16	16.48
1929	0.21	0.24	1.05	3.82	2.08	3.21	1.55	0.60	2.58	1.27a	0.66	0.04	17.31
1930	0.47	0.42	0.19	2.89a	3.87	1.59	0.66	4.73	2.29	3.07	0.55	0.00	20.73
1931	0.00	0.33	0.46	1.45	1.20	0.79	0.64	1.16	0.65	1.52	0.06	0.34	8.60
1932	0.02	0.21	0.43	1.64	1.97	1.79	0.59	1.26	0.30	0.48	0.14	0.67	9.50
1933	0.00	0.05	0.72	4.01	4.46	1.75	0.34	0.68	0.82	0.00	0.17	0.17	13.17
1934	0.12	1.34	0.38	0.96	0.82	3.82	0.32	0.72	1.17	0.24	0.32	0.29	10.50
1935	0.16	0.38	0.55	2.64	6.06	2.99	1.30	0.08	0.87	0.23	0.43	0.00	15.69
1936	0.47	0.58	0.97	1.59	0.85	2.34	1.24	0.72	0.80	0.61	1.15	0.82	12.14
1937	0.35	0.38	0.65	0.93	1.57	2.17	2.22	0.83	0.58	1.20	0.65a	0.41	11.94
1938	0.38	0.22	1.08	1.58	4.36a	0.52	2.78	0.44	1.63	0.20	0.32	0.23a	13.74
1939	0.30	0.63	0.26	0.47	1.09	1.08	0.34	1.39	0.79	0.52	0.00	0.24	7.11
1940	0.76	0.40	1.17	2.94	0.72	1.23	1.32	1.71	1.84	0.93a	0.30	0.26	13.58
1941	0.23	0.24	1.07	3.32a	1.75	3.84a	2.47	1.95	1.35	0.40	0.53	0.64	17.79
1942	0.21	0.77	0.75	4.25	3.49a	2.90	0.80	0.29	1.19	1.07	1.29	0.40	17.41
1943	0.25	0.13	0.70	1.54	3.14	1.38	0.82	0.65	0.10	0.94	0.04	0.20	9.89
1944	1.26	0.51	1.41a	1.75	2.73	2.60	3.14	0.97	0.15	0.08	0.41	0.62	15.63
1945	0.32	0.59	0.26	4.44	1.26	6.48	0.94	1.63	1.40	0.28	0.42	1.13	19.15
1946	0.10	0.15	1.54	0.98	3.85	1.76	0.89	0.60	0.97	1.86	0.40	0.21	13.31
1947	0.17	0.30	0.36	1.93	2.55	6.73	0.72	1.12	0.77	1.42	1.34	0.53	17.94
1948	0.8	0.75a	0.45	1.35	1.44	2.82	1.46	1.27	1.56	1.03	0.25	0.50	13.68
1949	0.76	0.00	0.94	0.66	2.89	4.28	0.74	0.30	0.94	1.83	0.13	0.11	13.58
1950	0.29	0.10	0.73	1.96	2.70	0.78	3.93	0.16	2.86	0.12	0.37	0.04	14.04
1951	0.25	0.21	0.64	2.39	2.13	1.90	3.12	0.52	0.84	1.35	0.06	0.75	14.16
1952	0.24	0.61	1.46	0.84	2.27	2.85	0.57	1.87	1.07	0.59	0.98	0.39	13.74
1953	0.29	1.05	0.23	1.48	1.78	3.43	2.00	1.97	0.07	0.23	0.44	0.24	13.21
1954	0.03	0.02	0.71	0.74	1.81	1.13	1.68a	1.18	1.54a	0.61	0.16	0.71	10.32
1955	0.56	0.58	0.94	0.77	3.98	8.11	1.39	1.05a	1.72	0.21	1.14	0.53	20.98
1956	0.36	0.17	0.24	1.01	2.49	0.47	1.87	0.42	0.18	0.69	0.66	0.21	8.77
1957	0.31	0.03	0.82	1.99	6.02	2.95	1.89	1.90	0.80	1.63	0.39	0.24	18.97
1958	0.08	0.31	1.14	2.14	1.74	1.77	2.03	0.60	0.35	0.00	0.49	1.00	11.65
1959	0.27	0.09	1.34	0.70	3.82	4.86	0.34	0.36	2.01	1.21	0.06	0.00	15.06
1960	0.29	0.41	0.22	1.42	1.23	1.23	0.44	0.56	0.92	0.23	0.71	0.93	8.59
1961	0.04	0.38	1.70	0.86	4.26	1.08	4.37	0.57	1.18	0.92	0.53	0.07	15.96
1962	0.25	0.40	0.62	0.35	6.12	4.15	2.82	1.43	0.37	0.52	0.33	0.22	17.58
1963	0.27	0.36	0.74	1.82	1.98	2.70	2.46	0.95	1.96	0.86	0.03	0.32	14.45
1964	0.00	0.29	0.39	3.44	1.22	0.70	0.02	0.10	0.14	0.18	0.00	0.52	7.00
1965	0.42	0.25	0.19	0.77	3.35	3.11	2.83	0.11	2.09	0.34	0.08	0.32	13.86
1966	0.33	0.35	0.12	0.51	0.41	1.61	1.31	2.46	1.77	1.02	0.13	0.14	10.16
1967	0.22	0.01	0.92	2.02	4.09	5.29	0.88	0.95	0.28	0.23	0.19	0.66	15.74
1968	0.21	0.17	0.42	1.46	3.77	1.66	0.75	0.91	-999z	1.10	0.15	0.35	10.95a
1969	0.23	0.39	0.41	1.47	0.76	3.36	0.77	0.35	0.19	2.45	0.20	0.00	10.58
1970	0.47	0.01	0.88	1.55	1.12	4.02	2.01	0.05	0.47	1.90	0.03	0.11	12.62

Appendix 2.1.4.E. Precipitation data - Torrington Experimental Farm station

ID: 488995
Latitude: 42.08 degrees
Longitude: -104.22 degrees
Elevation: 4098 feet
Station period of record: 01/01/1922-06/30/2004
Units: inches of precipitataion

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1971	0.22	0.46	0.45	3.31	4.33	1.65	0.80	0.21	-999z	1.17	0.10	0.03	12.73a
1972	0.26	0.07	0.83	2.96	0.89	1.46	2.17	2.57	0.75	0.61	0.34	0.29	13.20
1973	0.13	0.17	-999z	-999z	0.26	-999z	2.88	0.11	4.71	0.04	0.99	0.68	9.97c
1974	0.68	0.25	0.56	0.93	0.33	1.90	0.85	1.38	0.93	0.75	0.40	0.00	8.96
1975	-999z	0.39	0.31	2.67	1.97	1.22	0.86	0.44	0.36	0.77	0.00	0.53	9.52a
1976	0.23	0.10	0.49	2.22	3.14	2.78	3.14	0.74	0.63	0.27	0.00	0.00	13.74
1977	0.07	0.00	0.22	2.12	1.52	4.66	1.55	1.28	0.29	0.24	0.66	0.59	13.20
1978	0.85	0.96	0.25	1.20	4.47	1.71	2.20	1.05	0.46	0.86	0.52	0.79	15.32
1979	0.63	0.09	0.53	0.90	1.88	1.87	2.54	1.61	0.34	1.21	0.92	0.84	13.36
1980	0.57	0.88	1.31	0.99	2.75	0.11	0.97	2.59	0.33	1.82	0.46	0.19	12.97
1981	0.44	0.09	0.35	1.60	3.30a	1.38	3.07	1.99	0.59	0.60	0.50	0.13	14.04
1982	0.24a	0.08	0.24	0.59	3.67a	4.07	3.15	2.35	3.79	1.19	0.87	0.44	20.68
1983	0.04	0.05	1.42	1.39	3.97	2.50	-999z	1.06	0.40	0.36	1.26a	0.52	12.97a
1984	0.25	0.77	1.16	3.48	1.43	1.53	2.86	0.79	0.32	1.48	0.09	0.45	14.61
1985	0.41	0.10	0.18	2.13	0.97	1.51	1.08	0.41	2.46	1.45	1.24	0.77	12.71
1986	0.06	1.13	1.00	2.75	1.50	2.92	1.56	1.59	1.20	3.25	0.84	0.05	17.85
1987	0.20a	0.98	1.21	0.71	3.56	3.06	1.25	1.38	0.63	0.20	0.74	0.81	14.73
1988	0.20	0.12	0.51	1.67	3.27	1.33	3.24a	0.26	0.75	0.14	0.24	0.18	11.91
1989	0.00	0.68	0.47	1.33	1.90	1.04	0.22	0.83	1.70	0.42	0.13	0.42	9.14
1990	0.15	0.72	2.31	1.38	2.58	1.11	2.19	2.05	2.12	0.63	1.07	0.05	16.36
1991	0.27	0.11	0.47	1.52	4.57	4.52	1.02	0.48	0.92	0.57	0.59	0.12	15.16
1992	0.25	0.42	0.96	0.15	1.36	1.33	3.79	1.56	0.22	0.70	0.25a	0.81	11.80
1993	0.29	1.29	0.70	1.42	0.45	5.18	1.18	2.36	1.90	1.60	1.12	0.27	17.76
1994	0.18a	0.28	0.25	0.96	0.50	1.37	2.73	0.50	0.78	1.29	0.39	0.97	10.20
1995	0.38	0.10	0.19	0.70	5.37	3.34	0.54	0.03	1.42	0.38	0.35	0.38a	13.18
1996	0.50	0.02	0.27	1.30	4.00	1.15	0.38	0.69	1.19	0.58	0.28	0.13	10.49
1997	0.34	0.13	0.13	1.90	6.13	2.22	2.53	1.85	1.53	1.77	0.20	0.15	18.88
1998	0.13	0.53a	0.95	1.12	2.49	2.33	0.96	2.24	0.42	3.21	1.02	0.28a	15.68
1999	0.03	0.34	0.61	2.54	2.13	2.67	0.63	0.69	2.32	0.15	0.26	0.11	12.48
2000	0.85	0.70	1.12	2.30	1.56	0.25	1.48	0.73	2.60	0.69	1.33	0.25	13.86
2001	0.08a	0.33	0.23a	2.18	1.52	0.9	3.45	0.49	1.41	1.42	0.27	0.01	12.29
2002	0.13	0.06	0.74	0.25	0.9	1.16	0.75	2.69	2.03	0.7	0.16	0.01	9.58
2003	0.19	0.31	2.8	1.57	1.71	3.49	1.03	1.14	1.24	0.29	0.94	0.5	15.21
2004	0.19	-999z	0.42	0.65b	1.22	1.05	-999z	-999z	-999z	-999z	-999z	-999z	-999g

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accun S = Subsequent

NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Precipitation data - Centennial 1 N station

ID: 481610
Latitude: 41.31 degrees
Longitude: -106.13 degrees
Elevation: 8140 feet
Station period of record: 02/01/1899-07/31/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1899	-999z	5.90	6.00	2.00	0.85	0.91	1.53	0.94	0.70	4.81	0.02	-999t	23.66b
1900	-999u	4.00	1.25	8.63	0.45	0.57	0.97	1.15	0.67	0.32	0.55	0.46	19.02a
1901	0.25	2.26	0.88	2.19	-999i	1.30	1.00	3.06	0.45	0.56	0.23	0.64	12.82a
1902	0.00	0.34	0.35	0.10	0.16	0.60	-999v	0.11	-999y	0.32	0.33	1.38	3.69b
1903	1.38	0.86	1.24	0.72	1.07	1.16	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1904	-999z	-999z	-999z	-999z	3.31	1.33	-999z	1.31	-999z	0.45	0.00	0.30	-999f
1905	2.80	-999z	1.96	-999w	2.42	0.27	1.94	0.84	1.09	1.71	0.60	0.07	13.70b
1906	0.95	0.45	4.70	-999t	1.31	1.41	2.09	1.29	3.05	3.00	1.42	0.50	20.17a
1907	0.65	1.15	1.05	3.80	5.91	0.65	1.54	0.85	0.47	-999z	-999z	-999z	16.07c
1908	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1909	-999z	-999z	-999z	-999z	2.53	1.67	1.34a	2.80	1.81	0.33	1.50	-999z	-999e
1910	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.33	-999k
1911	2.02	1.81	1.26	0.88	0.55	2.43	1.06	0.97	0.59	2.04	1.33	0.18	15.12
1912	2.37	3.98	2.75	2.44	3.42	1.54	4.30	0.29	2.85	1.42	0.33	1.99	27.68
1913	1.10	2.81	1.08	0.93	0.21	1.69	1.62	0.75	0.80	0.58	0.78	2.94	15.29
1914	4.04	2.05	0.69	3.30	1.55	2.68	2.44	1.81	0.64	0.73	0.08	0.35	20.36
1915	0.78	1.17	1.52	1.19	1.52	1.70	0.33	2.02	3.14	1.00	0.90	0.97	16.24
1916	1.17	1.27	0.96	0.42	0.91	0.04	1.39	1.51a	0.62	1.13	0.75	3.15	13.32
1917	1.18	1.84	1.81	2.62	3.14	0.74	1.67	1.06	0.22	1.35	0.47	2.76	18.86
1918	1.1	2.33	1.30	1.71	0.95	2.20	1.50	0.42	1.63	1.56	-999z	0.45	15.15a
1919	0.09	1.37	0.57	2.53	0.68	0.39	2.96	1.13	1.27	1.49	2.19	0.63	15.30
1920	0.98	0.85	0.66	4.53	0.90	0.45	1.22	2.51	-999t	-999u	-999r	-999o	-999d
1921	-999l	-999l	0.80	-999i	-999w	-999p	-999n	2.10	-999x	-999y	-999r	-999p	-999j
1922	-999p	-999f	-999q	-999q	-999o	-999t	-999t	-999p	-999y	-999w	-999s	-999l	-999l
1923	-999m	-999p	-999i	-999k	-999o	-999s	-999j	-999p	2.02	-999r	-999t	-999q	-999k
1924	-999r	-999o	-999i	-999t	-999n	-999x	-999w	-999z	-999u	-999t	-999t	-999n	-999l
1925	-999l	-999q	-999p	-999s	-999q	-999o	-999o	-999q	-999s	-999n	-999t	-999t	-999l
1926	-999q	-999o	-999p	-999q	2.43	1.04	1.91	1.98	1.95	0.58	1.88	-999f	-999e
1927	2.46	2.51	1.24	1.39	0.38	1.20	1.42a	1.25	1.29b	1.59	1.27	1.46	17.46
1928	1.43	1.14	2.30	1.11	2.02	1.40	0.97	0.19	0.39	0.82	-999z	-999z	11.77b
1929	1.62	0.87	3.25	1.71	-999d	0.17	2.09	3.03	1.82	1.72	0.67	0.21	17.16a
1930	2.67	1.08	2.06	0.54	1.74	0.75	2.61	2.98	1.08	4.26	0.68	0.13	20.58
1931	0.05	0.74	0.71	1.21	0.75	1.50	0.84	1.60	1.24	1.79	-999z	0.71	11.14a
1932	1.21	1.70	2.32	0.98	0.58	0.84	0.23	0.67	0.05	1.20	0.81	1.03	11.62
1933	0.66	1.27	0.56	2.63	1.38	1.70	0.60	0.39	1.33	0.00	0.10	0.98	11.60
1934	0.28	1.79	0.75	1.62	1.89	1.30	1.05	0.64	0.83	0.15	0.43	1.29	12.02
1935	0.85	0.51	-999z	-999z	3.84	-999z	1.76	0.23	1.15	0.46	0.74	0.35	9.89c
1936	3.04	-999z	3.29	-999z	0.11	-999z	-999z	1.23	1.62	0.80	0.35	1.63	-999d
1937	-999s	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999m	1.50	-999k
1938	0.68	0.66	1.28	1.24	1.31	1.96	2.19	1.55	3.34	0.35	0.75b	0.72	16.03
1939	1.32	1.43	1.45	1.22	0.66	1.09	0.89	0.73	1.51	0.88	0.00	0.75	11.93
1940	-999d	1.76b	1.23	1.33	1.75a	0.77	2.40	0.48	2.38	1.32	0.98	0.27b	14.67a
1941	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1942	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1943	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1944	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1945	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1946	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l

Appendix 2.1.4.E. Precipitation data - Centennial 1 N station

ID: 481610
Latitude: 41.31 degrees
Longitude: -106.13 degrees
Elevation: 8140 feet
Station period of record: 02/01/1899-07/31/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1947	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.55	1.46	0.91	1.50	2.84	-999g
1949	0.84	0.51	1.73	1.26	3.34	3.64	1.93	0.59	1.11	1.74	0.35	1.28	18.32
1950	1.61	0.61	0.68	3.34	1.89	0.23	1.20	0.74a	2.31	0.57	2.75	0.67	16.60
1951	1.91	1.96	0.92	2.11	1.97	2.39	0.52	1.33	0.65	2.15	0.90	2.87	19.68
1952	1.18	0.75	1.90	1.46	2.52	0.72	0.76	0.97	0.47	0.04	0.74	1.48	12.99
1953	1.51	1.91	0.86	1.57	1.50	1.59	3.84	2.09	0.45	0.37	1.87	0.40	17.96
1954	0.70	0.44	2.45	0.48	1.01	0.49	1.67	0.80	1.27	1.29	0.45	0.32	11.37
1955	0.83	0.74	1.01	0.20	0.88	1.62	0.89	2.67	0.71	0.75	1.19	1.50	12.99
1956	1.20	1.72b	0.54	0.84a	1.50a	-999o	2.71	1.24	0.11	0.14	0.53	1.79	12.32a
1957	1.88	0.81	1.03b	1.69	2.46	1.34	2.92	0.95	0.27	0.68	0.85	1.10	15.98
1958	0.81b	1.06	0.64	0.38	2.72	0.79	0.85	1.66	1.44	0.14	1.17	1.74	13.40
1959	0.59	0.93	1.15	1.61	2.44	1.06	0.59	0.69	2.49	1.59	0.09	-999m	13.23a
1960	0.95	1.61a	1.00	0.76	1.22	1.28	2.06	0.74	0.60	0.80	1.15	1.26	13.43
1961	0.15	0.51	1.94	1.02	2.04	1.25	2.19	0.80	2.58	0.78	0.61	1.51	15.38
1962	2.08	1.24	0.38	1.50	1.30	1.97	0.91	0.48	0.50	0.60	0.43	0.48	11.87
1963	2.44	1.08	0.90	1.02	0.65	1.73	0.72	2.69	1.11	0.63	0.20	0.57	13.74
1964	0.69	0.55	1.33	1.28	0.91	1.65	0.32	1.26	0.92	0.08	0.37a	1.95	11.31
1965	1.71	0.29	0.24	1.25	1.77	2.71	1.21	2.57	3.67	0.50	1.04	0.25	17.21
1966	0	0.22	0.21	0.69	0.68	1.66	1.08	1.28	1.24	0.72	0.50	0.72	9.00
1967	0.77	0.11	0.69	0.16	1.23	4.18	0.51	0.50	1.44	0.28	1.12	1.03	12.02
1968	0.18	0.62	0.10	1.92	0.25	0.12	0.65	1.21	0.14	-999z	-999z	-999z	5.19c
1969	-999z	-999z	0.45	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999y	-999z	-999k
1970	3.51	0.85	4.09	1.4	2.33	1.3	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1971	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1972	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1973	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1974	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1975	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1976	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1977	-999z	-999z	-999z	-999z	-999z	0.09	3.73	1.61	0.5	0.92	1.62	2.16	-999e
1978	1.21	0.89	0.94	0.99	1.93	1.43	0.42	0.48	0.71	0.9	1.08	2.95	13.93
1979	1.61	0.73	0.86	0.74	1.83	0.95	0.21	2.84	0.29	0.78	0.86	0.56	12.26
1980	2.71	0.8	0.83	1.22	1.71	0.45	0.82	0.92	1.27	1.18	0.43	0.25	12.59
1981	0.18	0.38	0.79	0.88	3.64	1.02	1.3	1.8	1.73	1.85	0.39	2.24	16.2
1982	1.28a	0.17	1.02	0.52	1.79	1.44	1.99	0.85	2.41	0.26	0.52	0.44	12.69
1983	0.43	0.26	1.67	2.32	0.96	1.92	2.91	2.55	0.09	0.84	2.31	1.56	17.82
1984	0.18	0.22	0.96	1.54	0.47	1.15	5.39	1.41	2	0.43	0.4	0.83	14.98
1985	0.55	0.25	1.14	1.75	0.92	1.12	1.59	0.61	1.65	1.38	2.67	0.76	14.39
1986	0.23	2.67	0.34	0.98	1.52	3.02	0.99	1.08	0.95	1.63	2.07a	0.2	15.68
1987	0.6	0.43	0.53	0.36	2.34	1.66	2.77	1.49	0.14	0.86	0.59	1.21	12.98
1988	1.08	0.98	1.93a	0.66	1.32	0.42	0.77	0.45	0.79	0.16	1.11	0.53	10.2
1989	0.74	1.99	0.87	1.45	0.9	0.71	1.58	1.4	1.55	0.47	1	0.58	13.24
1990	1.11	0.98	1.72	1.91	0.64	0.82	3.48	0.77	2.45	1.38	0.78	1.12	17.16
1991	0.59	0.33	1.09	1.19	2.28	2.43	2.92	1.66	0.43	0.24	2.38	0.28	15.82
1992	0.48	0.28	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.67a	0.88a	-999h
1993	0.53a	0.97a	0.76b	-999g	1.09b	2.9	0.37	0.91b	1.17	1.36	1.47	0	11.53a
1994	1.5	3.54	0.7	1.14	0.49	0.59	0.25	0.61b	0.26	0.39	0.55	0.33	10.35

Appendix 2.1.4.E. Precipitation data - Centennial 1 N station

ID: 481610
Latitude: 41.31 degrees
Longitude: -106.13 degrees
Elevation: 8140 feet
Station period of record: 02/01/1899-07/31/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1995	0.37	0.95a	-999g	1.87b	5.83a	2.03	0.73c	0.43	2	0.66	1.61a	0.94b	17.42a
1996	2.79b	0.88	0.88a	-999d	1.79	0.68	1.34	1.32a	-999k	0.56a	-999d	2.59c	12.83c
1997	1.32a	-999d	-999e	2.49b	0.90b	1.18a	1.93c	2.71c	2.96a	1.47c	0.73b	-999d	15.69c
1998	-999d	-999z	3.01b	-999z	-999e	-999d	1.56a	-999z	0.72a	-999z	-999e	-999z	-999i
1999	3.08	0.56b	0.60a	3.99a	2.07	1.31	1.19	1.13a	1.02	0.26a	0.8	0.62	16.63
2000	1.61	0.67	0.82	1.59	-999u	0.73	0.82	0.67	2.38	0.45	0.59	1.51	11.84a
2001	0.06	0.66a	0.47	1.78	1.47	0	1.45b	0.61	0.66	0.76	0.17a	0.47a	8.56
2002	0.21a	0.51	1.26a	0.67	0.8	0.16	0.75a	0.73	-999d	0.92	0.33a	0.16a	6.50a
2003	0.59	0.82	1.75a	1.26a	1.55c	-999f	1.22	2.69	0.20a	0.46b	1.21	-999f	11.75b
2004	0.37	0.49	0.41	-999l	-999q	2.15	1.83b	-999z	-999z	-999z	-999z	-999z	-999g
Max value	4.04	5.9	6	8.63	5.91	4.18	5.39	3.06	3.67	4.81	2.75	3.15	27.68
Min value	0	0.11	0.1	0.1	0.11	0	0.21	0.11	0.05	0	0	0	8.56
Mean	1.17	1.2	1.31	1.57	1.63	1.29	1.55	1.27	1.25	0.97	0.88	1.04	14.74
Median	0.98	0.88	1.01	1.27	1.49	1.25	1.34	1.11	1.11	0.78	0.74	0.76	14.39
No. years	75	75	77	70	76	77	77	80	76	76	73	72	49

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Precipitation data - Laramie FAA Airport station

ID: 485415
Latitude: 41.31 degrees
Longitude: -105.67 degrees
Elevation: 7266 feet
Station period of record: 08/01/1948-10/07/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.58	1.05	0.26	0.66	0.87	-999g
1949	2.26	0.14	1.48	1.00	2.08	2.01	0.62	0.08	0.37	1.16	0.00	0.31	11.51
1950	0.21	0.04	0.11	1.28	1.47	0.65	2.93	0.45	2.39	0.13	0.64	0.16	10.46
1951	0.58	0.17	0.42	1.59	1.01	0.89	0.83	1.31	0.44	0.94	0.36	0.53	9.07
1952	0.22	0.46	0.82	0.56	1.39	0.84	1.53	1.77	0.27	0.10	0.66	0.38	9.00
1953	0.26	0.61	0.25	0.48	1.24	1.47	2.99	1.72	0.15	0.28	0.34	0.07	9.86
1954	0.29	0.21	0.89	0.22	0.96	0.42	1.86	1.45	1.25	0.38	0.11	0.24	8.28
1955	0.21	0.76	0.41	0.44	1.28	1.39	-999z	2.77	0.35	0.14	0.59	0.29	8.63a
1956	0.36	0.40	0.22	0.59a	2.83	0.33	1.67	1.02	0.00	0.07	0.79	1.04	9.32
1957	0.40	0.49	1.03	0.68	1.52	0.85	2.00	1.02	0.44	1.79	0.25	0.01	10.48
1958	0.17	0.63	0.52	0.59	1.80	1.04	1.55	3.58	0.31	0.05	0.47	0.55	11.26
1959	0.41	0.19	1.05	0.37	2.22	2.19	0.67	0.66	2.17	0.83	0.17	0.05	10.98
1960	0.28	0.48	0.35	0.36	1.01	1.51	0.85	0.54	0.37	0.54	0.84	0.70	7.83
1961	0.15	0.17	1.73	0.74	1.57	1.45	3.03	1.67	1.78	0.63	0.61	0.05	13.58
1962	1.47	0.81	0.34	0.95	1.52	0.96	1.38	0.38	0.80	1.39	0.44	0.12	10.56
1963	1.73	0.10	0.33	0.58	0.49	1.09	1.12	2.19a	0.26	0.64	0.02	0.17	8.72
1964	0.23	0.82	0.44	1.27	0.96	1.58	-999z	0.95	0.50	0.00	0.34	0.32	7.41a
1965	0.97	0.27	0.30	1.35	2.62	1.63	2.02	0.41	3.03	0.25	0.09	0.24	13.18
1966	0.14	0.17	0.64	0.20	0.01	1.43	1.30	0.92	1.45	1.37	0.63	0.30	8.56
1967	0.72	0.32	0.57	1.45	1.31	2.75	1.76	0.76	1.11	0.67	0.66	0.92	13.00
1968	0.10	0.40	0.10	2.63	1.68	0.33	1.66	1.05	0.37	0.45	0.59	0.27	9.63
1969	0.44	1.14	0.19	0.65	0.69	3.04	0.74	0.42	1.26	2.06	0.43	0.17	11.23
1970	0.08	0.20	1.41	0.32	0.29	1.96	0.53	0.55	1.54	1.49	1.10	0.28	9.75
1971	0.32	1.36	0.85	0.94	2.07	0.26	0.89	1.99	1.06	0.08	0.27	0.09	10.18
1972	0.26	0.24	0.30	1.57	1.11	1.96	0.82	1.53	0.37	2.28	1.00	1.41	12.85
1973	0.57	0.09	1.88	2.33	1.06	1.49	2.50	0.71	2.04	0.09	1.71	1.34	15.81
1974	1.01	0.20	0.64	1.47	0.17	1.09	1.34	1.08	0.65	1.25	0.20	0.12	9.22
1975	0.25	0.19	0.85	0.52	2.24	0.84	2.47	0.60	0.46	0.90	0.48	0.87	10.67
1976	0.13	0.53	0.38	0.79	0.82	0.79	1.73	1.15	0.09	0.17	0.14	0.14	6.86
1977	0.16	0.25	1.98	0.93	0.85	0.59	4.00	1.31	0.56	0.17	0.27	0.07	11.14
1978	0.34	0.49	0.84	0.42	2.54	0.48	0.46	0.62	0.29	0.78	0.36	0.85	8.47
1979	0.51	0.86	1.27	0.31	0.64	0.58	0.51	2.25	0.49	0.68	0.75	0.16	9.01
1980	0.89	0.44	1.17	0.45	1.69	0.31	1.31	0.66	0.72	1.43	0.65	0.04	9.76
1981	0.32	0.09	0.79	0.84	3.32	0.60	1.85	1.39	0.28	1.04	0.16	0.48	11.16
1982	0.21	0.12	0.35	0.54	2.12	0.80	0.84	1.04	1.65	0.35	0.91	1.87	10.80
1983	0.17	0.08	2.43	3.71	1.26	1.99	0.94	1.22	0.44	0.56	2.62	0.38	15.80
1984	0.09	0.52	0.96	1.47	0.35	0.80	3.55	2.01	0.95	0.80	0.13	0.24	11.87
1985	0.38	0.21	0.30	1.35	1.06	0.98	3.76	0.38	0.88	1.34	0.83	0.11	11.58
1986	0.03	0.29	0.32	1.55	0.84	2.71	1.06	1.15	0.43	1.46	0.74	0.22	10.80
1987	0.26	0.41	0.33	1.37	3.27	0.79	1.17	1.25	0.05	0.55	1.69	0.86	12.00
1988	0.56	0.43	1.25	0.59	1.95	2.18	0.30	0.40	1.30	0.09	0.53	0.35	9.93
1989	0.32	1.41	0.37	0.27	1.12	0.43	0.35	1.38	1.90	0.33	0.23	0.38	8.49
1990	0.33	0.80	1.98	1.08	0.74	0.25	3.37	2.05	1.89	1.28	0.88	0.46	15.11
1991	0.57	0.29	0.37	1.07	2.48	4.75	2.68	2.21	0.97	0.23	0.91	0.07	16.60
1992	1.05	0.39	0.80	0.71	3.24	2.04	1.46	1.19	0.15	0.30	1.20	1.08	13.61
1993	0.40	1.58	0.76	0.77	1.59	2.50	0.77	1.72	2.16	1.46	1.02	0.14	14.87
1994	0.31	0.91	0.37	0.97	0.50	0.53	0.63	0.85	0.12	0.61	0.35	0.27	6.42
1995	0.13	0.35	0.22	0.91	3.62	2.42	1.03	0.74	2.36	0.86	0.24	0.09	12.97

Appendix 2.1.4.E. Precipitation data - Laramie FAA Airport station

ID: 485415
Latitude: 41.31 degrees
Longitude: -105.67 degrees
Elevation: 7266 feet
Station period of record: 08/01/1948-10/07/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1996	0.39	0.18	0.33	0.85	1.38	0.75	0.66	0.98	1.47	0.61	0.31a	0.14	8.05
1997	0.66	0.36	0.32	0.99	2.05	1.72	0.17	1.96	2.15	0.32	0.18	0.47	11.35
1998	0.04	0.36	0.57	0.55	0.72	3.49	4.43	1.03	0.52	2.69	0.30	0.58	15.28
1999	0.47	0.02	0.28	1.21	1.51	1.02	0.81	0.90	1.33	0.18	0.15	0.21	8.09
2000	0.18	0.21	0.35	1.38	3.85	0.76	1.00	1.08	1.82	1.24	0.07b	0.15a	12.09
2001	0.07	0.08	0.25a	1.11b	0.92a	0.07	0.95	1.04	0.64	0.41	0.42	0.09	6.05
2002	0.06	0.07	0.63a	0.23	0.82c	0.38	0.50	1.46	0.58	0.56	0.06	0.05	5.40
2003	0.05	0.12	0.95b	1.28	1.73	0.82	1.11	0.78	0.76	0.46	0.59	0.22	8.87
2004	0.05	0.10	0.00	1.32	0.69	2.64	1.07	1.43a	3.03	-999x	-999z	-999z	10.33c
Max value	2.26	1.58	2.43	3.71	3.85	4.75	4.43	3.58	3.03	2.69	2.62	1.87	16.60
Min value	0.03	0.02	0.00	0.20	0.01	0.07	0.17	0.08	0.00	0.00	0.00	0.01	5.40
Mean	0.41	0.41	0.70	0.97	1.50	1.31	1.51	1.19	0.99	0.74	0.56	0.39	10.71
Median	0.3	0.31	0.48	0.88	1.35	1	1.15	1.05	0.72	0.59	0.46	0.26	10.56
No. years	56	56	56	56	56	56	54	57	57	56	56	56	53

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accun S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Precipitation data - Wheatland 4N station

ID: 489615
Latitude: 42.11 degrees
Longitude: -104.95 degrees
Elevation: 4638 feet
Station period of record: 01/01/1893-06/30/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1893	0.20	-999z	-999z	1.40	0.90	0.10	0.55	0.27	0.00	0.60	-999z	-999z	4.02d
1894	-999z	0.30	-999z	0.46	0.00	2.17	-999z	-999z	-999z	-999z	-999z	-999z	-999h
1895	-999z	-999z	-999z	-999z	4.30	3.20	1.46	0.00	0.60	2.00	0.80	0.70	13.06d
1896	1.70	0.60	1.40	0.55	2.73	-999z	0.52	2.19	0.40	0.12	0.85	-999z	11.06b
1897	0.30	0.15	1.10	-999z	-999v	-999s	0.93	-999y	0.00	0.30	0.70	0.50	3.98d
1898	0.80	0.00	0.85	0.32	-999z	1.65	2.34	0.48	-999z	0.19	0.76	0.70	8.09b
1899	0.60	1.55	2.30	2.10	2.55	2.63	1.28	0.49	0.68	-999z	-999z	-999z	14.18c
1900	-999z	-999z	-999z	-999z	-999z	0.43	2.12	-999z	1.42	0.84	0.40	0.20	-999f
1901	0.05	1.10	0.76	1.27	2.95	2.43	0.77	0.36	0.53	-999z	-999z	-999z	10.22c
1902	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.16	1.06	-999z	-999z	-999z	-999j
1903	0.60	-999z	-999y	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999k
1904	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1905	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1906	0.00	0.03	-999w	1.20	3.35	2.95	1.41	1.25	2.60	-999y	1.40	0.80	14.99b
1907	1.34	1.15	2.30	1.80	-999z	-999z	2.30	0.93	2.35	0.00	0.40	1.16	13.73b
1908	0.22	0.00	-999z	1.20	8.93	2.19	1.03	1.16	0.24	2.35	0.85	1.05	19.22a
1909	2.60	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999k
1910	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1911	-999z	-999z	-999z	-999z	-999z	1.45	1.14	0.43	0.39	1.04	0.08	0.21	4.74e
1912	0.98	1.08	1.25	2.61	1.04	2.03	4.58	2.63	3.76	2.04	0.44	0.34	22.78
1913	0.37	0.48	0.04	0.52	1.92	1.35	1.74	0.75	1.44	1.39	0.54	4.05	14.59
1914	0.12	-999u	0.40	3.43	-999z	0.00	0.12	0.24	0.00	0.58	0.00	-999z	4.89c
1915	0.68	1.45	1.31	1.75	3.27a	1.91	2.20	1.79	2.85	1.02	0.09	1.08a	19.40
1916	0.43	0.72	0.72	0.16	2.27	0.41	0.60	0.31	-999u	1.46a	0.60	0.29	7.97a
1917	0.36	0.10	0.53	-999z	-999z	-999z	-999z	-999z	-999z	0.44	0.00	0.93	-999f
1918	0.94	0.80	0.16	2.34	3.34	2.70	2.96	0.97	1.19	0.39	0.61	0.80	17.20
1919	0.00	0.72	0.07	2.16	0.20	1.08	1.11	0.81	1.90	1.93	1.79	0.89	12.66
1920	0.14	0.97	0.74	6.08	2.81	1.05	1.31	0.66	1.05	1.31	0.17	0.78	17.07
1921	1.04	0.00	0.00	0.52	2.68	2.74	-999z	-999z	-999z	-999z	-999z	-999z	-999f
1922	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	0.57	1.22	0.90	-999i
1923	0.01	0.27	0.83	2.22	4.87	3.84	3.13	0.10	1.74	3.86	0.23	0.55	21.65
1924	0.10	0.13	0.99	1.50	1.47	0.01	0.44	0.42	2.04	1.40	0.22	0.33	9.05
1925	0.17	0.02	0.80	3.78	2.29	2.90	1.04	0.83	0.07	1.74	0.39	1.41	15.44
1926	0.46	0.81	0.38	0.90	2.45	1.97	2.75	1.32	1.30	1.77	0.78	0.58	15.47
1927	0.64	0.83	2.16	2.48	1.00	3.27	1.65	2.71	0.67	1.37	0.13	0.14	17.05
1928	0.23	0.70	0.59	0.53	1.72	1.90	2.36a	-999z	-999z	-999z	-999z	-999z	8.03e
1929	0.47	0.16	1.51	-999z	-999z	1.47	2.16	0.00	3.39	0.00	0.60	-999z	9.76c
1930	-999z	-999z	-999z	-999z	2.21	0.32	0.41	3.79	1.22	2.02	0.41	0.04	10.42d
1931	0.00	0.35	0.50	1.01	0.80	2.43	2.95	2.75	0.47	1.45	0.37	0.42	13.50
1932	0.16	0.41	0.84	1.73	1.24	1.72	0.15	0.69	0.32	0.42	0.24	0.39	8.31
1933	0.00	0.08	0.72	5.15	2.48	0.69	0.64	0.87	0.28	0.00	0.05	0.26	11.22
1934	0.22	1.36b	0.35	1.45	0.85	1.31	0.49	0.30	1.24	0.00	0.21	0.27	8.05
1935	0.05	0.32	0.18	2.13	7.13	2.65	0.42	1.02	1.81	0.45	0.17	0.07	16.40
1936	0.22	0.97a	0.49	1.66	0.32	1.67	0.91	0.98	1.84	1.92	0.69	0.54	12.21
1937	0.53	0.15	0.96	2.10	1.69	1.46	3.04	0.59	0.95	1.13	0.72	0.22	13.54
1938	0.28	0.06	0.79	3.42	2.48	2.11	1.81	0.96	2.98	0.25	0.73	0.16	16.03
1939	0.11	0.27	0.24	0.34	1.62	0.63	0.22	1.20	1.55	0.99	0.00	0.27	7.44
1940	0.61	0.33	0.83	3.23	0.38	2.71	0.87	0.56	2.10	0.37	0.26	0.21	12.46

Appendix 2.1.4.E. Precipitation data - Wheatland 4N station

ID: 489615
Latitude: 42.11 degrees
Longitude: -104.95 degrees
Elevation: 4638 feet
Station period of record: 01/01/1893-06/30/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1941	0.34	0.24a	0.48	2.28	0.12	3.81	0.79	1.41	1.10	0.72	0.60	0.63	12.52
1942	0.31	0.34	0.65	4.55	2.14	2.15	1.96	0.26	1.37	3.56	1.65	0.42	19.36
1943	0.09	0.50	1.18	1.90	2.41	1.00	0.83	0.29	0.02	0.35	0.04	0.18	8.79
1944	0.66	0.26	1.7	1.3	0.45	1.26	0.46	0.31	0	0.34	0.06	1.01	7.81
1945	0.34	0.71	0.93	2.97	1.06	5	0.32	1.47	0.82	0.69a	0.21	0.53	15.05
1946	0.23	0	0.49	0.78	2.78	1.63	0.8	0.92	2.67	1.74	0.81	0.27	13.12
1947	0.45	0.22	1.07	1.52	4.23	3.95	0.21	0.92	0.7	1.27	0.7	0.5	15.74
1948	0.09	0.74	0.39	0.9	2.56	2.24	1.23	2.20a	2.38	0.42	0.45	0.43	14.03
1949	0.33	0	0.64	1.53	5.13	2.83	0.91	0.78	0.53	1.01	0.05	0.03	13.77
1950	0.31	0.09	0.61	2.07	2.62	1.38	2.4	0.19	2.59	0.35	0.28	0	12.89
1951	0.49	0.05	0.18	2.8	2.21	2.48	2.91	1.72	0.59	1.88	0.1	0.51	15.92
1952	0.21	0.8	0.81	0.41	4.48	0.84	0.45	2.18	2.23	0.46	0.8	0.25	13.92
1953	0.16	1.11	0.14	1.52	0.85	1.88	1.54	1.2	0.13	0.11	0.37	0.17	9.18
1954	0.08	0	0.73	0.16	1.99	0.75	1.59	0.8	0.88	0.27	0.18	0.7	8.13
1955	0.77	0.3	0.79	0.31	2.51	3.52	1.35	1.47	0.31	0.13	0.87	0.51	12.84
1956	0.22	0.1	0.27	0.92	2.11	0.45	4.09	1.22	0.1	0.32	0.23	0.27	10.3
1957	0.21	0.02	0.46	1.96	6.73	1.08	1.31	2.1	1.42	1.46	0.42	0.13	17.3
1958	0.06	0.06	0.89	1.22	2.52	2.44	1.62	1.33	0.09	0.25	0.18	0.84	11.5
1959	0.34	0.36	1.11	0.81	4.47	2.43	0.55	0.7	2.1	1.1	0.07	0	14.04
1960	0.3	0.27	0.14	0.51	2.38	0.98	0.53	0.16	1.2	0.14	1.22	0.78	8.61
1961	0.01	0.22	2.35	0.91	3.75	2.37	1.06	0.25	1.13	0.3	0.31	0.02	12.68
1962	0.15	0.17	0.52	0.32	3.85	4.89	1.61	0.8	0.5	0.48	0.16	0.19	13.64
1963	0.25	0.04	0.78	1.41	0.96	4.36	0.53	0.34	1.28	0.32	0	0.04	10.31
1964	0.06	0.45	0.59	4.56	2.02	1.35	0.63	0.13	0.28	0.05	0.1	0.84	11.06
1965	0.96	0.37	0.52	0.62	3.81	3.67	1.49	0.6	3.85	1.05	0	0.04	16.98
1966	0.09	0.71	0.12	0.86	0.04	1.81	1.87	1.71	0.92	0.63	0.38	0.38	9.52
1967	0.06	0.23	0.84	1.68	3.21	4.62	1.33	0.74	0.35	0.21	0.53	0.28	14.08
1968	0.03	0.13	0.36	1.52	4.42	2.08	0.72	0.85	0.63	0.34	0.05	0.15	11.28
1969	0.12	0.27	0.09	1.29	0.85	3.21	0.39	0.02	0.02	1.56	0.34	0.1	8.26
1970	0.36	0	1.67	0.96	0.74	4.76	0.55	0.22	0.61	0.99	0.18	0.03	11.07
1971	0.14	0.28	0.56	4.05	5.51	1.68	1.4	0.76	2.5	0.74	0.11	0.01	17.74
1972	0.55	0	0.46	1.62	1.75	0.67	1.16	1.87	0.98	0.42	0.14	0.15	9.77
1973	0.02	0.13	1.55	1.81	0.44	0.42	2.94	0.22	4.12	0.05	0.9	0.4	13
1974	0.4	0.04	0.06	0.88	1.1	1.77	1.36	0.52	0.94	0.51	0.12	0.02	7.72
1975	0.29	0.34	0.26	0.46	2.04	1.4	1.92	1.23	0.6	0.9	0	0.45	9.89
1976	0.09	0.32	0.29	2.19	2.62	0.36	1.62	0.44	0.56	0.33	0.03	0.06	8.91
1977	0.08	0	0.33	2.32	0.95	4	3.17	0.99	0	0.22	0.17	0.14	12.37
1978	0.67	0.64	0.13	0.84	3.86	0.73	0.78	2.67	0.82	0.8	0.55	0.35	12.84
1979	0.35	0.08	0.31a	0.58	1.34	2.59	0.49	2.09	0.03	0.95	1.47	0.35	10.63
1980	1.15	0.58	1.71	0.78	2.62	0.04	0.55	1.24	0.3	1.24	0.39	0.1	10.7
1981	0.04	0.07	1.02	0.96	4.09	0.63	3.29	1.32	0.35	0.91	0.19	0.21	13.08
1982	0.17	0.1	0.2	0.89	3.45	1.65	2.21	2.16	4.61	0.71	0.67	0.39	17.21
1983	0.06	0.02	2.05	1.44	2.3	3.44	1.3	1.66	0.25	0.88	2.07	0.2	15.67
1984	0.13	0.28	0.74	2.99	0.69	0.42	5.92	1.16	1.23	0.85	0	0.45	14.86
1985	0.28	0.17	0.26	1.14	1.16	1.26	2.34	0.74	2.39	1.09	0.72	0.44	11.99
1986	0.08	0.33	0.22	1.49	1.74	5.6	0.8	0.29	1.31	1.32	0.77	0.02	13.97
1987	0.12	0.48	0.82	0.53	1.89	1.68	0.68	1.19	0.75	0.11	0.35	0.9	9.5
1988	0.13	0.16	0.57	0.7	1.55	0.68	2.68	1.03	0.29	0.06	0.2	0.22	8.27

Appendix 2.1.4.E. Precipitation data - Wheatland 4N station

ID: 489615
Latitude: 42.11 degrees
Longitude: -104.95 degrees
Elevation: 4638 feet
Station period of record: 01/01/1893-06/30/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1989	0	0.72	0.25	2.56	1.99	1.3	0.11	0.89	2.24	0.42	0.19	0.25	10.92
1990	0.1	0.54	1.94	1.36	1.79	0.83	3.43	1.72	1.2	0.8	1.27	0.04	15.02
1991	0.11	0.08	0.3	1.43	6.01	5.27	1.26	1.99	0.55	0.65	0.56	0	18.21
1992	0	0.25	1.86	0.15	1.87	1.42	2.84	1.03	0.2	0.4	0.39	0.37	10.78
1993	0.28	1.05	0.39	2.29	0.95	4.6	0.75a	1.21	1.6	1.34	0.89	0.25	15.6
1994	0.37	0.29	0.1	0.91	1.59	3.05	2.01	0.31	0.47	2.25	0.57	0.69	12.61
1995	0.05	0.37	0.11	0.91	6.93e	4.72	1	0.08	2.5	2.25	0.46	0.65	20.03
1996	0.6	0.06	0.12	1.17	3.37	1.01	0.85	0.45	0.6	0.87	0.51	0.2	9.81
1997	0.42	0.07	0.21	1.15	2.9	1.91	2.02	2.41	1.51	1.89	0.15	0.13	14.77
1998	0.19	0.44	1.26	1.43	2.91	2.5	2.35	3.25	0.7	2.77	0.84	0.42	19.06
1999	0.24	0.02	0.26	2.93	2.17	3.44	1.44	1.37	2.86	0.28	0.11	0.09	15.21
2000	0.1	1.21	0.29	1.97	2.64	0.6	0.69	1.34	1.62	0.19	0.93	0.53	12.11
2001	0.3	0.21	0.21	2.24	2.57	0.74	3.91	0.55	1.45	1.34	0.41	0	13.93
2002	0.01	0.12	0.95a	0.5	0.92	0.37	1.67	1.97	1.55	1.25	0.5	0	9.81
2003	0.05	0.33	1.93	2.05	0.9	3.42	0.21	1	2.45	0.1	0.29b	0.53	13.26
2004	0.15	0.23b	0.05	0.57	1.27	2.88	-999z	-999z	-999z	-999z	-999z	-999z	-999f

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accun S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Precipitation data - LaGrange station

ID: 485260
Latitude: 41.64 degrees
Longitude: -104.17 degrees
Elevation: 4590 feet
Station period of record: 08/01/1948-07/31/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	1.42	1.61	1.08	0.14	0.66	-999g
1949	1.44	0.04	1.27	0.96	2.99	4.63	0.67	1.47	0.74	1.86	0.09	0.25	16.41
1950	0.21	0.19	0.64	1.13	2.59	0.94	3.02a	0.80	2.72	0.17	0.44	0.08	12.93
1951	0.36	0.24	0.21	1.75	1.71	3.62	3.13	1.53	1.99	1.78	0.12	0.38	16.82
1952	0.18	0.57	0.53	0.59	4.41	2.24	0.61	1.11	0.37	0.48	0.77	0.84	12.70
1953	0.24	0.80	0.20	2.03	0.78	3.66	2.59	1.09	0.07	0.25	0.35	0.71	12.77
1954	0.04	0.00	1.34	0.44	1.90	2.01	1.54	3.24	1.27	0.29	0.18	0.46	12.71
1955	0.73	0.59	0.82	1.24	3.38	3.10	0.55	0.83	2.07	0.27	1.37	0.50	15.45
1956	0.79	0.39	0.53	1.19	3.65	1.45	3.14	2.18	0.05	0.40	0.90	0.43	15.10
1957	0.27	0.04	0.88	2.25	6.78	2.26	1.79	1.53a	0.68	2.50	0.33	0.08	19.39
1958	0.08	0.41	1.40	2.20	3.31	1.96	2.29	0.68	0.53	0.01	0.24	1.51	14.62
1959	0.85	0.35	1.41	1.33	3.01	1.64	0.31	1.20	1.31	1.55	0.02	0.00	12.98
1960	0.41	0.74	0.41	1.63	4.07	0.91	0.65	0.23	0.94	0.56	0.52	0.70	11.77
1961	0.07	0.37	3.06	0.75	4.81	2.25	1.28	0.78	2.05	0.59	0.40	0.14	16.55
1962	0.65	0.70	0.57	0.44	4.80	4.24	4.05	1.11	0.33	0.45	0.34	0.48	18.16
1963	0.63	0.18	0.95	1.68	2.17	3.90	1.24	1.13	1.07	0.57	0.10	0.48	14.10
1964	0.21	0.51	0.67	3.00	1.46	0.90	0.93	0.79	0.42	0.17	0.13	0.61	9.80
1965	0.80	0.56	0.64	0.36	4.73	3.67	3.17	0.45	2.88	0.74	0.00	0.57	18.57
1966	0.31	0.42	0.17	0.60	0.23	2.80	2.18	2.49	2.40	1.03	0.16	0.35	13.14
1967	0.20	0.09	0.85	3.93	5.13	3.23	1.95	0.57	0.43	0.33	0.75	0.67	18.13
1968	0.27	0.30	0.37	3.17	3.10	1.69	1.06	3.52	0.72	1.62	0.10	0.24	16.16
1969	0.40	0.18	0.48	1.10	2.09	2.83	1.59	0.52	0.54	2.91	1.17	0.19	14.00
1970	0.87	0.22	1.41	1.70	1.78	5.39	0.88	0.41	0.59	1.47	0.18	0.33	15.23
1971	0.67	0.52	1.09	3.19	3.75	0.92	1.37	0.41	1.66	0.78	0.08	0.04	14.48
1972	0.76	0.09	0.93	3.34	1.13	2.50	1.53	2.20	0.73	0.68	0.61	0.35	14.85
1973	0.88	0.19	3.23	1.73	1.14	0.54	4.08	0.18	4.60	0.23	0.92	1.38	19.10
1974	1.14	0.23	1.10	1.82	0.21	2.40	1.28	0.12	1.01	0.34	0.34	0.06	10.05
1975	0.31	0.41	0.82	1.36	2.67	0.63	1.29	0.54	0.50	0.79	0.08	0.60	10.00
1976	1.11	0.38	0.36	2.03	2.66	1.01	-999z	1.19	0.76	0.29	0.54	0.09	10.42a
1977	0.81	0.12	2.14	3.05	2.52	1.45	2.56	-999z	0.11	0.10	1.15	0.49	14.50a
1978	0.82a	1.02	0.51	1.04	3.17	1.16	2.33	1.45	0.10	-999z	0.96	1.69	14.25a
1979	0.72	0.00	3.60	0.91	2.04	3.94	1.45	3.40	0.33	1.73	3.74	1.14	23.00
1980	0.87	0.64	1.51	0.64	3.60	0.19	2.61	1.75	0.95	0.50	0.78	-999j	14.04a
1981	0.44	0.35	0.76	1.32	4.68	2.31	2.92	1.21	0.64	0.67	0.20	0.24	15.74
1982	0.21	0.03	0.81	0.62	4.36	-999e	3.78	2.75	2.27	1.83	1.14	1.57	19.37a
1983	0.03	0.20	5.62	1.96	4.86	4.13	2.26	1.11	0.24	0.46	2.23	0.35	23.45
1984	0.16	1.86	0.67	4.32	0.93	3.47	3.36	0.51	2.48	-999d	0.15	0.47	18.38a
1985	0.43	0.21	0.34	1.27	2.99	4.09	1.38	0.50	2.82	1.03	0.38	0.56	16.00
1986	0.69	1.31	0.35	4.49	1.56	4.05	1.25	0.43	1.21	3.91	0.84	0.83	20.92
1987	0.04	1.58	1.58	1.80	-999f	1.87	1.41	2.17	0.23	0.18	0.94	2.34	14.14a
1988	1.45	0.31	2.30a	2.79a	4.51	0.80	1.68	0.83	1.68	0.00	0.81	0.44a	17.60
1989	0.00	1.30	0.32	1.01	3.27	1.65	1.84	3.74	2.03a	0.95	0.46	0.75	17.32
1990	0.26	0.8	3.02	1.35	3.44	1.12	7.16	2.24	0.66	0.65	1.45	0.65	22.8
1991	0.24	0.13	0.7	0.99	4.48	4.36	0.55	0.80a	1.72	0.57	0.98a	0.02	15.54
1992	0.81	0.4	1.51	0.33	2.24	-999e	2.31b	2.67a	0.2	0.83	1.18	0.95	13.43a
1993	0.30a	0.81a	1.1	1.91	2.07	4.25	2.06	1.1	2.02	2.51	0.98	0.4	19.51
1994	0.7	0.54	0.21	1.55	0.38	1.05	1.2	1.23	0.43	2.38	0.42	1.25	11.34
1995	0.09	0.85	0.24	1.85	4.54	3.7	0.46	0.26	2.88	1.42	0.9	0.65	17.84

Appendix 2.1.4.E. Precipitation data - LaGrange station

ID: 485260
Latitude: 41.64 degrees
Longitude: -104.17 degrees
Elevation: 4590 feet
Station period of record: 08/01/1948-07/31/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1996	0.61a	0	1.01	1.72	3.08	1.4	2.22	0.98	1.12	1.19	0.64	0.2	14.17
1997	0.43	0.34	0.37	2.16	2.96	4.13	2.27	5.52	1.31	2.89	0.19	0.73	23.3
1998	0.1	0.64	1.44	1.4	1.93	1.88	4.27	0.71	0.71	3.11	0.73	0.92a	17.84
1999	0.19	0.1	0.58	3.07	1.95	2.21	1.26	1.67	1.79	0.2	0.17	0.56	13.75
2000	0.82	0.64	1.75	1.55	1.47	1.29	0.57	0.5	2.54	0.79	0.81	0.6	13.33
2001	0.46	0.61	0.51	3.47	2.74	1.02	1.6	0.61	2.95	1.23	0.95	0.09	16.24
2002	0.12	0.25	0.93	0.42	0.61	1.13	0.51	2.34	1.37	0.81b	0.3	0.02	8.81
2003	0.24	0.83	3.18	1.26	1.22	4.26a	0.45a	0.74	1.14	0.45a	0.7	0.82	15.29
2004	0.15	1.08	0.9	0.9	0.58	1.49	2.41	-999z	-999z	-999z	-999z	-999z	-999e

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accun S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Precipitation data - Cheyenne WSFO AP station

ID: 481675
Latitude: 41.16 degrees
Longitude: -104.81 degrees
Elevation: 6115 feet
Station period of record: 01/01/1915-10/07/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1915	0.08	0.97	1.61	3.29	2.21	1.34	1.71	3.98	2.10	1.11	0.19	0.41	19.00
1916	0.63	0.30	0.20	0.48	1.93	0.37	1.81	1.26	1.00	1.95	0.88	0.34	11.15
1917	0.30	0.80	0.69	1.75	4.65	0.34	1.62	1.75	0.56	0.39	0.40	0.81	14.06
1918	0.47	0.89	0.19	3.92	2.60	1.24	3.90	1.68	2.57	0.68	0.54	0.58	19.26
1919	0.00	0.26	1.52	1.23	0.70	0.72	2.83	0.43	1.76	1.67	1.63	1.10	13.85
1920	0.20	0.69	0.66	3.97	2.15	0.70	2.12	1.32	2.31	0.96	0.22	0.57	15.87
1921	1.47	0.36	0.39	2.00	2.40	2.92	1.37	0.61	0.02	0.06	0.34	1.31	13.25
1922	0.47	0.85	0.33	3.23	2.00	0.90	2.01	2.16	0.36	0.23	2.40	0.44	15.38
1923	0.06	0.57	1.49	3.26	2.58	2.32	3.23	2.06	2.78	2.83	0.28	0.28	21.74
1924	0.38	1.14	1.71	1.41	3.58	1.52	1.12	0.23	2.36	2.25	0.31	0.78	16.79
1925	0.03	0.29	0.59	1.23	1.56	1.81	3.80	1.13	0.19	3.51	1.26	1.74	17.14
1926	0.88	0.61	1.04	1.27	1.75	4.73	2.91	1.53	0.37	1.22	0.52	0.77	17.60
1927	0.15	1.09	1.93	2.25	2.01a	2.02	2.66	4.04	1.03	1.77	0.64	0.47	20.06
1928	0.33	1.28	1.52	0.83	2.67	2.85	1.95	0.53	0.08	1.27	1.19	0.17	14.67
1929	0.32	0.85	1.51	4.79	1.46	0.72	2.05	1.80	1.81	1.47	1.53	0.11	18.42
1930	0.88	1.03	0.88	1.19	4.95	0.34	0.92	6.73	1.28	1.49	0.83	0.12	20.64
1931	0.16	0.74	1.16	1.72	1.57	1.60	0.75	2.70	0.75	1.07	0.40	0.17	12.79
1932	0.31	0.61	1.40	1.67	1.47	1.64	0.97	0.63	1.13	0.41	0.20	0.82	11.26
1933	0.24	0.30	0.88	4.79	3.44	1.03	1.31	2.02	2.06	0.00	0.27	0.54	16.88
1934	0.29	1.32	0.86	1.54	1.66	0.87	2.52	1.41	0.72	0.00	0.10	0.15	11.44
1935	0.18	0.69	0.32	2.95	5.89	2.75	1.94	0.60	1.72	0.26	0.32	0.07	17.69
1936	0.30	0.59	1.17	1.26	2.90	2.64	1.76	1.10	1.14	0.68	0.24	0.41	14.19
1937	0.47	0.27	2.09	1.57	1.19	1.28	1.97	1.34	0.49	1.23	0.90	1.68	14.48
1938	0.37	0.28	1.33	2.11	2.31	2.02	1.32	2.26	3.33	0.54	0.63	0.97	17.47
1939	0.71	0.75	1.73	1.82	1.69	0.83	0.70	0.42a	0.49	0.37	0.06	0.26	9.83
1940	1.54	0.56	1.21	1.36	1.29	0.30	2.87	0.82	3.75	0.24	0.73	0.28	14.95
1941	0.33	0.32	1.36	3.70	0.66	4.66	2.08	1.86	1.10	1.43	0.71	0.72	18.93
1942	0.77	0.58	1.02	5.04	3.27	2.48	1.07	2.06	1.70	3.57	1.91	0.22	23.69
1943	0.56	0.53	0.95	1.34	4.21	2.34	1.25	1.11	0.53	0.54	0.41	0.18	13.95
1944	0.42	0.63	1.98	2.85	2.00	1.97	4.00	0.03	0.18	0.06	0.90	0.55	15.57
1945	0.97	1.03	1.02	3.08	1.31	3.47	1.57	1.35	1.43	0.53	0.46	0.29	16.51
1946	0.31	0.49	2.29	0.35	4.15	1.25	1.42	3.04	0.81	2.54	1.34	0.19	18.18
1947	0.54	0.69	0.81	1.55	2.19	3.75	1.87	1.37	0.78	2.12	0.78	0.52	16.97
1948	0.41	0.74	0.41	0.73	0.92	3.08	2.34	0.86	0.54	0.53	0.32	1.03	11.91
1949	2.78	0.04	2.44	1.61	4.27	3.26	2.17	2.04	0.25	1.36	0.02	0.26	20.5
1950	0.23	0.15	0.89	1.81	2.48	1.51	2.79	0.39	2.67	0.25	1.09	0.14	14.4
1951	0.69	0.17	0.51	1.94	2.77	1.76	2.74	1.85	0.75	2.26	0.79	0.93	17.16
1952	0	0.72a	1.84	0.86	2.67	1.48	1.19	1.86	0.29	0.34	1.06	0.21	12.52
1953	0.34	2.16	0.89	1.45	1.47	3.58	2.51	1.89	0.1	0.13	0.46	0.26	15.24
1954	0.21	0.08	2.54	0.4	1.45	1.37	1.2	1.38	1.08	0.15	0.28	0.2	10.34
1955	0.29	0.58	0.57	1.16	2.27	5.32	0.93	1.21	1.4	0.18	1.23	0.32	15.46
1956	0.7	0.46	0.24	1.31	2.56	0.99	1.43	1.73	0.14	0.16	1.27	0.41	11.4
1957	0.67	0.08	0.99	2.82	5.35	2.01	2.42	2.92	0.56	1.35	0.57	0.1	19.84
1958	0.06a	0.5	2.08	1.13	2.98	1.79	3.85	1.35	0.91	0.2	0.45	1.27	16.57
1959	0.52	0.3	1.09	1.54	4.16	0.71	0.8	0.77	1.61	1.19a	0.16	0.03	12.88
1960	0.17	0.49	0.31	0.82	0.96	1.36	0.94	0.69	0.66	1.11	0.43	0.28	8.22
1961	0.06	0.37	2.08	0.83	2.92	2.91	1.53	3.12	2.17	0.56	0.35	0.09	16.99
1962	0.67	0.56	0.39	0.54	2.72	2.82	4.02	0.4	1.3	0.62	0.33	0.25	14.62

Appendix 2.1.4.E. Precipitation data - Cheyenne WSFO AP station

ID: 481675
Latitude: 41.16 degrees
Longitude: -104.81 degrees
Elevation: 6115 feet
Station period of record: 01/01/1915-10/07/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1963	0.51	0.17	0.74	1.66	1.14	2.84	0.77	2.28	3.28	1.06	0.02	0.42	14.89
1964	0.03	0.24	0.58	1.3	0.84	1.01	1	0.28	0.33	0.03	0.14	0.16	5.94
1965	0.57	0.26	0.76	0.57	3.11	4.03	0.89	1.54	1.32	0.75	0	0.22	14.02
1966	0.11	0.22	0.12	0.48	0.21	1.95	3.38	2.78	2.12	0.68	0.29	0.08	12.42
1967	0.45	0.54	0.76	2.15	4.04	2.63	1.71	0.99	0.88	0.46	0.32	0.46	15.39
1968	0.04	0.3	0.31	2.34	3.54	0.87	1.25	1.21	0.2	0.86	0.71	0.28	11.91
1969	0.23	0.25	0.27	0.82	1.77	2.7	0.58	0.99	0.84	2.04	0.23	0.21	10.93
1970	0.1	0.04	1.32	0.85	3.13	2.42	0.82	0.14	1.1	1.3	0.3	0.31	11.83
1971	0.51	0.62	1.08	2.81	2.38	0.97	1.08	1.41	1.76	1.16	0.05	0.07	13.9
1972	0.36	0.02	0.79	0.8	2.76	1.71	1.35	1.83	1.01	0.42	0.59	0.4	12.04
1973	0.23	0.07	1.85	1.75	0.31	1.2	5.01	0.27	4.52	0.06	1.25	1.06	17.58
1974	0.48	0.03	1.24	0.5	0.11	2.81	1.41	1.29	0.5	0.91	0.49	0.1	9.87
1975	0.4	0.17	1.17	0.47	2.27	1.49	2.62	0.39	0.52	0.49	0.2	0.52	10.71
1976	0.32	0.71	0.32	1.79	2.07	0.68	2.39	1.4	0.77	0.15	0.28	0.1	10.98
1977	0.14	0.08	1.21	1.86	2.5	2.44	3.49	1.07	0.19	0.08	0.35	0.24	13.65
1978	0.58	0.78	0.35	0.52	3.98	0.63	0.98	1.38	0.12	0.5	0.45	0.54	10.81
1979	0.27	0.14	1.34	0.77	2.9	3.32	1.83	1.86	0.32	0.46	2.48	1.5	17.19
1980	2.71	0.73	1.36	0.93	2.39	0.07	2	1.55	0.97	0.51	0.46	0.08	13.76
1981	0.3	0.2	0.7	0.73	5.67	1.66	2.85	2.9	0.31	0.85	0.09	0.45	16.71
1982	0.41	0.19	0.17	0.53	3.56	4.52	2.71	1.81	2.87	1.2	0.43	0.83	19.23
1983	0.02	0	2.96	4.45	2.31	2.81	2.12	1.95	0.78	0.49	2.34	0.46	20.69
1984	0.54	0.84	1.28	3.71	0.78	2.43	2.57	2.84	0.65	1.55	0.11	0.34	17.64
1985	0.66	0.19	0.36	1.1	1.05	1.59	3.99	6.64	1.78	0.94	0.84	0.8	19.94
1986	0.13	0.5	0.54	2.26	1.03	2.42	1.04	1.55	2.47	1.78	0.66	0.18	14.56
1987	0.09	0.9	1.25	0.68	4.43	1.8	2.04	1.23	0.93	0.33	0.76	0.85	15.29
1988	0.52	0.65	1.34	1.84	3.09	2.03	1.79	1.79	1.66	0.09	0.42	0.53	15.75
1989	0.27	1.26	0.49	0.48	1.37	2.51	1.7	1.79	1.62	0.41	0.14	0.69	12.73
1990	0.35	0.69	3.65	1.66	3.37	1.03	3.64	1.98	0.8	1.35	0.72	0.39	19.63
1991	0.36	0.12	0.43	1.15	3.84	4.56	3.39	1.49	1.87	0.44	0.87	0.13	18.65
1992	1.18	0.11	1.75	0.34	1.86	2.11	1.87	1.9	0.01	0.46	1.69	0.49	13.77
1993	0.35	0.81	0.63	2.49	1.92	3.32	0.64	2.21	3.16	1.85	1.23	0.3	18.91
1994	0.66	0.88	0.55	1.45	2.05	1.44	2.13	1.49	0.38	1.55	0.34	0.57	13.49
1995	0.12	1.02	0.19	1.49	6	4.58	1.08	0.89	3.39	0.78	0.37	0.18	20.09
1996	0.5	0.07	1.5	1.51	2.24	1.79	3.1	1.79	2.34	0.5	0.45	0.01	15.8
1997	0.39	0.31	0.44	1.68	2.47	3.48	2.8	4.33	2.06	1.09	0.2	0.59	19.84
1998	0.07	0.29	0.69	1.09	2.35	1.63	1.21	0.96	0.49	1.27	0.31	0.46	10.82
1999	0.35	0.13	0.46	5.02	2.04	2.13	2.38	0.78	2.11	0.27	0.25	0.19	16.11
2000	0.35	0.59	1.48	0.58	1.38	0.46	2.64	1.87	2.64	0.69	0.3	0.75	13.73
2001	0.41	0.33	0.56	2.49	2.24	1.45	3.31	0.74	1.18	0.4	0.23	0.13	13.47
2002	0.17	0.64	0.85	0.68	0.75	0.68	0.48	2.21	1.73	1.1	0.46	0.11	9.86
2003	0.09	0.47	2.23	2.7	1.41	2.69	0.44	0.82	1.24	0.23	0.46	0.76	13.54
2004	0.07	0.45	0.15	1.24	1.04	3.37	1.36	0.91a	2.92	-999x	-999z	-999z	11.51c

Appendix 2.1.4.E. Precipitation data - Cheyenne WSFO AP station

ID: 481675
Latitude: 41.16 degrees
Longitude: -104.81 degrees
Elevation: 6115 feet
Station period of record: 01/01/1915-10/07/2004
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
Max value	2.78	2.16	3.65	5.04	6	5.32	5.01	6.73	4.52	3.57	2.48	1.74	23.69
Min value	0	0	0.12	0.34	0.11	0.07	0.44	0.03	0.01	0	0	0.01	5.94
Mean	0.44	0.52	1.06	1.75	2.42	2.04	2	1.64	1.3	0.9	0.61	0.46	15.17
Median	0.35	0.5	0.92	1.5	2.27	1.81	1.87	1.45	1.06	0.68	0.45	0.34	14.95
No. years	90	90	90	90	90	90	90	90	90	89	89	89	89

FLAGS:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
NOTES:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Precipitation data - Pine Bluffs 5W station

ID: 487240
Latitude: 41.17 degrees
Longitude: -104.16 degrees
Elevation: 5180 feet
Station period of record: 08/01/1948-07/31/2004
Units: inches of precipitataion

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1948	-999z	-999z	-999z	-999z	-999z	-999z	-999z	2.15	0.36	0.76	0.05	0.32	-999g
1949	-999h	0.00	0.62	0.85	3.46	2.39	1.08	1.47	0.23	1.19	0.05	0.15	11.49a
1950	0.24	0.13	0.59	0.54	1.76	0.97	1.29	0.48	2.77	0.18	0.58	0.08	9.61
1951	0.30	0.11	0.11	1.79	1.08	3.55	2.15	0.93	1.12	-999z	-999z	-999z	11.14c
1952	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1953	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1954	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1955	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1956	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1957	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1958	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1959	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1960	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1961	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1962	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1963	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1964	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1965	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1966	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1967	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1968	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1969	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1970	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1971	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1972	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1973	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1974	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1975	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1976	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1977	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1978	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1979	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1980	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1981	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1982	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1983	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1984	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1985	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1986	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1987	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1988	-999z	-999z	-999z	1.92	2.9	1.15	1.35	0.55	1.74	0.06	0.34	0.20a	10.21c
1989	0.19a	0.50a	0.32	0.56	1.21	3.29	1.94b	4.34	1.31	0.47	0.2	0.22	14.55
1990	0.37	0.12	2.33	0.8	2.12	1.12	3.68	1.3	1.82	0.71	0.57	0.01a	14.95
1991	0.12a	0.16	0.39	0.51	2.91	4.86	-999i	2.11	1.2	0.26	0.54a	0.01	13.07a
1992	0.24a	0.16	1.21	0.1	1.07	-999g	4.4	2.13	0.82	0.13	0.27	0.19	10.72a
1993	0.12a	0.5	0.57	2.12	1.33	2.61b	2.03	-999f	1.59	2.08	0.65	0.23	13.83a
1994	0.19	0.23	0.18	0.45	0.55	0.8	2.34b	0.79	0.21	2.03	0.31	0.34	8.42
1995	0.07	0.39	0.09	1.31	4.30b	4.11b	-999e	0.14	2.27	0.39	0.53	0.23	13.83a

Appendix 2.1.4.E. Precipitation data - Pine Bluffs 5W station

ID: 487240
Latitude: 41.17 degrees
Longitude: -104.16 degrees
Elevation: 5180 feet
Station period of record: 08/01/1948-07/31/2004
Units: inches of precipitataion

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1996	0.23	0.01	1.11	0.59	4.22	1.81a	1.13	2.26	2.99	0.47	0.25	0	15.07
1997	0.18	0.19	0.23	1.06	3.91	2.55	1.79	2.46	1.25	1.17	0.11a	0.20a	15.1
1998	0.02a	0.6	0.65	1.42	3.07	1.57	4.1	1.51	1.26	2.68	0.18	0.22	17.28
1999	0.05	0	0.34	2.31	2.7	1.58	4.24	2.79	2.1	0.31	0.17	0.08	16.67
2000	0.17	0.28	0.56	0.44	0.91	0.34	2.7	1.24	1.58	0.25	0.44	0.49	9.4
2001	0.32	0.1	0.29	1.98	2.92	0.85	3.68a	0.2	2.5	0.68	0.14	0.03	13.69
2002	0	0.2	0.28	0.25	0.34	0.97	0.29	4.82	0.8	0.84	0.34	0	9.13
2003	0.16	0.2	1.67	2.22	1.77	4.36	0.89	1.16	1.11	0.18	0.28	0.26	14.26
2004	0.07	0.3	0.3	0.96	-999f	-999e	0.89	-999z	-999z	-999z	-999z	-999z	-999g
Max value	0.37	0.6	2.33	2.31	4.3	4.86	4.4	4.82	2.99	2.68	0.65	0.49	17.28
Min value	0	0	0.09	0.1	0.34	0.34	0.29	0.14	0.21	0.06	0.05	0	8.42
Mean	0.17	0.22	0.62	1.11	2.24	2.16	2.22	1.73	1.45	0.78	0.32	0.17	13.18
Median	0.18	0.19	0.39	0.91	2.12	1.7	1.99	1.47	1.29	0.47	0.28	0.2	14.41
No. years	18	19	19	20	19	18	18	19	20	19	19	19	12

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Precipitation data - Pine Bluffs station

ID: 487235
Latitude: 41.18 degrees
Longitude: -104.07 degrees
Elevation: 5074 feet
Station period of record: 01/01/1919-02/29/1988
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1919	0.00	0.25	-999i	0.85	0.53	0.67	3.50a	0.57	4.62	1.03	1.00	0.35	13.37a
1920	0.11	0.10	0.38	4.51	1.24	2.05	1.32	2.22	0.32	0.91a	0.25	0.01	13.42
1921	0.97	0.25	0.20b	0.97	1.71	2.53	2.19	2.20	1.03	0.15	0.21	0.72	13.13
1922	0.42	0.25a	0.18	3.33	1.17a	1.42	2.65	2.05a	0.00a	0.00	1.69c	0.36	13.52
1923	0.08	0.31a	0.60	0.78	3.60	4.99	1.99	1.64a	1.01	2.67	0.10c	0.38	18.15
1924	0.21	0.31	0.62a	0.62	3.20a	0.64	0.47	0.23a	3.38	1.40b	0.00	0.36a	11.44
1925	0.00	0.03a	0.42c	0.74b	1.88	2.44a	-999d	1.42	0.24c	2.23	0.89a	1.02	11.31a
1926	0.45	0.35	0.45	0.96	2.25	4.21a	2.12	1.42	0.28	1.55a	0.43	0.32	14.79
1927	0.00c	0.69	2.05a	2.41	1.46	3.51	1.52b	3.31a	1.39	0.56	0.43b	0.10	17.43
1928	0.01	0.46	0.70	0.45	2.64b	3.88a	2.04	1.11	0.05a	1.54	0.77	0.00	13.65
1929	0.15	0.36a	-999g	4.32a	1.02c	0.51a	2.02	1.67	2.76	1.40a	0.80	-999g	15.01b
1930	0.48	0.56	0.31	1.80a	2.62a	1.53a	1.26	9.44	1.05	2.91	0.27b	0.03	22.26
1931	0.10b	0.53	0.64	1.06a	2.14	0.84	1.77	0.88	1.74	1.22	0.39	0.75	12.06
1932	0.09	0.43	0.63	1.85	0.97	2.28	2.78	2.50	0.62	0.34	0.15	0.34	12.98
1933	0.00	0.09	0.57	2.86	2.91a	0.58	1.95	4.91	2.79	0.00	0.18	0.44	17.28
1934	0.04	0.89	0.27	0.86	1.62	2.5	0.98	2.47	0.22	0	0.08	0.1	10.03
1935	0	0.25	0.79	2.54	4.35	3.33	1.43	0.45	1.82	0.52	0.43	0.33	16.24
1936	0.24	0.34	0.5	1.53	0.82	2.06	0.57	2.06	0.61	0.43	0.31	0.26	9.73
1937	0.46	0.13	0.89	0.85	1.06	3.35	3.31	1.34	0.59	0.36	0.46	1.21	14.01
1938	0.33	0.23	0.83	1.85	3.15	1.76	1.57	1.26	6.6	0.55	0.6	0.79	19.52
1939	0.56	0.33	1.27	1.22	1.22	1.11	0.77	0.61	0.41	0.19	0	0.29	7.98
1940	1.1	0.46	0.75	2.52	0.76	1.26	1.59	0.33	1.57	0.32	0.31	0.12	11.09
1941	0.08	0.17	1.09	2.02	1.58	6.29	0.2	1.35	1.71	0.5	0.13	0.32	15.44
1942	0.3	0.73	0.39	4.39	3.88	3.18	1.91	0.56	0.31	2.1	0.79	0.3	18.84
1943	0.1	0.26	0.2	1.73	4.97	2.42	1.43	0.54	0.05	0.96	0.12	0.18	12.96
1944	0.43	0.33	1.64	1.47	2.17	2.44	3.92	1.37	0.44	0.11	0.86	0.35	15.53
1945	0.61	0.47	0.42	2.92	2.95	3.85	1.23	3.15	1.64	0.19	0.17	0.21	17.81
1946	0.1	0.08	1.22	0.89	3.88	3.04	0.77	1.22	0.46	1.58	0.6	0.12	13.96
1947	0.3	0.41	0.39	1.22	3.25	4.95	1.38	1.68	0.32	1.03	0.84	0.36	16.13
1948	0.1	0.44	0.54	0.93	0.86	2.55	2.71	0.92	0.47	0.9	0.2	0.61	11.23
1949	1.25	0	1.2	-999h	3.65	2.77	1.05	2.39	0.19	0.61	0	0.04	13.15a
1950	0.18	0.01	0.56	0.58	1.79	0.91	1.68	1.03	2.47	0.16	0.62	0.06	10.05
1951	0.31	0.17	0.1	2.14	1.45	4.19	3.2	1.57	1.41	1.78	0.33	0.42	17.07
1952	0	0.4	0.51	0.53	3.23	1.19	0.66	2.17	0.22	0.26	0.5	0.43	10.1
1953	0.08	0.29	0.5	1.94	1.35	2.01	6.39	1.83	0.33	0.1	0.49	0.49	15.8
1954	0.14	0.01	0.78	0.52	3.43	1.71	0.91	1.04	1.23	0.44	0.47	0.29	10.97
1955	0.45	0.4	0.93	1.19	3.79	2.77	0.35	4.84	3	0.18	1.27	0.3	19.47
1956	0.67	0.34	0.55	1.51	2.13	2.03	0.82	0.9	0	0.02	1.03	0.53	10.53
1957	0.18	0.01	0.66	2.48	7.05	2.61	3.44	1.37	0.27	1.36	0.36	0.12	19.91
1958	0.06	0.78	1.37	1.36	1.98	4.38	5.32	0.9	1.4	0.23	0.16	1.01	18.95
1959	0.54	0.25	1.55	1.3	2.59	0.91	0.62	1.44	1.82	2.01	0.01	0.17	13.21
1960	0.27	0.37	0.21	0.7	3.28	2.01	1.1	1.22	1.24	1.13	0.2	0.21	11.94
1961	0.06	0.15	3.09	0.46	3.99	3.88	2.34	1.18	1.85	0.27	0.3	0.07	17.64
1962	0.4	0.33	0.1	0.36	4.81	4.46	4.48	1.36	0.32	0.98	0.49	0.14	18.23
1963	0.49	0.05	0.97	0.32	1.17	2.52	2.09	3.16	2.37	1.38	0.14	0.42	15.08
1964	0.02	0.11	0.45	2.36	1.26	2.04	1.73	0.71	0.49	0.28	0.01	0.15	9.61
1965	0.41	0.61	0.56	0.6	3.69	4.98	1.68	1.79	1.94	0.73	0	0.29	17.28
1966	0.48	0.19	0.16	1.6	0.25	4.28	1.85	3.02	3.67	0.76	0.67	0.14	17.07
1967	0.15	0.25	0.69	3.13	4.55	4.01	2.48	0.86	0.43	0.47	1.13	0.48	18.63

Appendix 2.1.4.E. Precipitation data - Pine Bluffs station

ID: 487235
Latitude: 41.18 degrees
Longitude: -104.07 degrees
Elevation: 5074 feet
Station period of record: 01/01/1919-02/29/1988
Units: inches of precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual total
1968	0.14	0.52	0.96	1.21	3.98	2.34	-999z	4.33	0.24	0.95	0.66	0.33	15.66a
1969	0.14	0.14	0.75	2.54	2.12	3.85	1.51	0.77	1.34	2.31	0.33	0.41	16.21
1970	0.24	0.32	2.32	2.66	1.29	3.53	2.24	0.57	1.51	1	0.17	0.61	16.46
1971	1.75	0.48	1.57	2.55	3.06	2.16	0.86	0.41	1.69	0.61	0.08	0.05	15.27
1972	-999z	0.01	0.51	1.17	2.62	3.27	1.75	5.96	1.23	0.33	1.52	0.78	19.15a
1973	0.49	0.09	2.88	1.7	0.71	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999g
1974	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1975	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1976	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1977	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1978	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999l
1979	-999z	-999z	-999z	-999z	-999z	-999z	-999z	2.87	0.29	0.57	1.29	0.5	-999g
1980	1.14	0.57	1.53	0.86	2.99	0.61	2.44	1.4	0.72	0.3	0.18	0.06	12.8
1981	0.23	0.31	1.52	0.73	4.37	1.51	8.87	3.43	0.41	0.5	0.08	0.11	22.07
1982	0.34	0.09	0.43	0.8	1.95	4.7	2.63	3.39	2.1	1.08	0.86	0.56	18.93
1983	0.02	0.03	2.47	2.32	4.16	4.04	5.17	3.68	0.46	0.33	1	0.3	23.98
1984	0.37	0.47	1.11	2.98	0.92	3.04	3.02	1.25	1.08	1.64	0.1	0.53	16.51
1985	0.44	0	0.26	0.86	0.9	1.24	1.8	0.55	2.45	0.69	0.94	0.94	11.07
1986	0.4	0.42	0.34	3.09	1.17	2.98	1.25	0.8	0.93	2.07	0.35	0.2	14
1987	0.13	1.06	0.96	0.8	3.66	1.1	2.67	2.32	1.52	0.49	0.84	0.68	16.23
1988	0.87	0.2	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999z	-999j
Max value	1.75	1.06	3.09	4.51	7.05	6.29	8.87	9.44	6.6	2.91	1.69	1.21	23.98
Min value	0	0	0.1	0.32	0.25	0.51	0.2	0.23	0	0	0	0	7.98
Mean	0.33	0.31	0.84	1.64	2.46	2.65	2.13	1.9	1.26	0.85	0.48	0.36	15.1
Median	0.24	0.31	0.63	1.33	2.17	2.51	1.79	1.4	1.03	0.61	0.36	0.33	15.36
No. years	63	64	61	62	63	62	60	63	63	63	63	62	56

Flags:
a = 1 b = 2 c = 3 ... or z = 26 or more missing days in a month or missing months in a year.
A = Accumulation over more than one day
S = Subsequent
Notes:
- Long-term means based on columns. Thus
the sum (or average) of the monthly values may not equal the annual value.

Appendix 2.1.4.E. Study period precipitation assessment - Above Pathfinder subbasin

Subbasin: Above Pathfinder
Weather station: Encampment 10 ESE
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972	0.83	0.69	1.24	1.14	0.65	0.70	5.25	1.63	0.79	1.85	0.58	-999z	2.03	6.88	12.13
1973	3.19	1.27	2.30	0.50	0.50	1.24	9.00	3.04	1.95	1.04	1.66	0.62	1.25	9.56	18.56
1974	0.23	2.45	1.58	1.02	0.72	2.35	8.35	2.25	0.59	1.69	1.27	0.20	1.05	7.05	15.40
1975	1.18	0.41	1.03	1.67	0.66	2.69	7.64	2.17	1.68	0.68	2.15	0.87	0.55	8.10	15.74
1976	2.39	0.52	1.55	0.37	1.32	1.50	7.65	1.69	1.41	1.85	1.49	1.28	0.30	8.02	15.67
1977	0.40	0.28	0.59	0.47	0.59	1.66	3.99	2.11	4.20	0.06	2.41	1.62	0.86	11.26	15.25
1978	0.77	1.22	0.32	0.72	0.83	1.01	4.87	0.68	3.03	0.68	0.25	0.20	1.07	5.91	10.78
1979	0.87	0.92	2.14	0.48	0.40	1.38	6.19	1.11	1.38	0.20	0.32	2.41	0.39	5.81	12.00
1980	1.73	0.66	0.34	2.39	0.79	1.28	7.19	0.26	2.02	0.03	0.39	0.82	1.30	4.82	12.01
1981	1.26	0.53	0.19	0.06	0.52	0.94	3.50	1.00	4.36	0.80	1.93	1.31	0.81	10.21	13.71
1982	1.53	0.63	0.87	1.33	0.38	0.87	5.61	0.64	1.41	1.34	1.68	0.46	1.45	6.98	12.59
1983	1.85	1.05	0.60	0.08	0.44	2.21	6.23	2.12	1.56	2.79	1.45	1.34	0.52	9.78	16.01
1984	1.74	2.59	1.19	0.28	0.84	1.58	8.22	2.51	0.69	1.26	1.72	1.49	1.81	9.48	17.70
1985	0.80	0.72	0.60	1.02	0.36	1.07	4.57	1.36	0.65	0.60	1.88	0.24	1.27	6.00	10.57
1986	2.04	2.08	0.44	0.10	1.85	0.95	7.46	1.39	1.23	2.48	1.38	0.73	1.15	8.36	15.82
1987	1.83	0.75	0.26	0.67	0.63	0.88	5.02	1.02	1.24	0.79	1.45	1.07	0.11	5.68	10.70
1988	1.23	0.83	0.91	0.62	0.56	1.41	5.56	0.36	1.30	1.29	0.46	0.45	1.35	5.21	10.77
1989	0.15	1.29	0.55	0.25	2.63	1.05	5.92	0.33	0.49	0.77	0.91	1.87	1.50	5.87	11.79
1990	0.33	0.70	0.88	0.22	1.38	1.26	4.77	0.99	0.51	0.99	1.98	0.70	1.12	6.29	11.06
1991	1.70	0.84	0.48	0.60	0.41	0.89	4.92	1.01	2.15	1.46	0.53	1.51	0.48	7.14	12.06
1992	0.42	1.72	0.18	0.47	0.81	0.86	4.46	1.30	2.39	1.43	2.88	1.28	1.05	10.33	14.79
1993	0.95	1.35	1.34	0.70	1.53	1.48	7.35	2.77	1.84	2.26	0.34	1.30	1.55	10.06	17.41
1994	1.97	2.08	1.28	0.41	1.74	1.01	8.49	1.35	0.66	0.66	0.40	1.35	0.22	4.64	13.13
1995	1.18	1.07	0.34	1.01	0.69	0.95	5.24	1.59	5.12	1.73	1.53	0.54	2.06	12.57	17.81
1996	1.70	1.21	0.10	0.51	0.43	0.90	4.85	1.55	2.21	0.47	1.01	0.93	0.60	6.77	11.62
1997	1.76	1.75	1.13	1.70	0.54	0.41	7.29	2.62	1.34	0.77	0.96	2.39	2.80	10.88	18.17
1998	1.24	0.23	0.34	0.29	1.04	0.96	4.10	1.29	1.02	2.27	2.76	0.84	0.78	8.96	13.06
1999															
2000															
2001															

Appendix 2.1.4.E. Study period precipitation assessment - Above Pathfinder subbasin

Weather station: Saratoga 1 SSE
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972	0.72	0.10	0.28	0.41	0.26	0.34	2.11	0.51	0.90	2.00	0.61	0.64	1.14	5.80	7.91
1973	3.24	0.79	0.74	0.27	0.42	1.27	6.73	1.91	0.46	1.01	1.44	0.58	1.37	6.77	13.50
1974	0.03	1.53	0.98	0.31	0.26	0.51	3.62	1.42	0.09	0.98	3.12	0.30	0.67	6.58	10.20
1975	1.62	0.32	0.73	0.76	0.17	1.04	4.64	1.09	0.57	0.61	1.39	0.49	0.41	4.56	9.20
1976	1.60	0.22	0.75	0.05	0.53	0.40	3.55	1.16	1.76	1.46	2.49	0.52	0.44	7.83	11.38
1977	0.17	0.00	0.23	0.29	0.25	0.75	1.69	1.35	3.26	0.45	1.10	1.30	0.40	7.86	9.55
1978	0.34	0.60	0.00	0.55	0.45	0.54	2.48	0.38	2.40	0.24	0.62	0.95	0.47	5.06	7.54
1979	0.55	0.41	1.10	0.39	0.41	1.02	3.88	0.93	1.67	0.20	0.15	1.76	0.15	4.86	8.74
1980	1.29	0.43	0.37	2.03	0.50	0.86	5.48	0.33	1.85	0.00	0.74	1.01	1.11	5.04	10.52
1981	1.27	0.39	0.38	0.12	0.22	0.59	2.97	0.72	3.02	0.00	1.46	0.76	0.53	6.49	9.46
1982	1.60	0.41	0.33	0.28	0.18	0.35	3.15	0.39	1.14	1.41	2.69	0.47	1.63	7.73	10.88
1983	0.87	0.98	0.68	0.02	0.13	1.47	4.15	1.72	1.53	1.60	2.33	0.79	0.78	8.75	12.90
1984	1.16	2.28	0.69	0.22	0.68	1.46	6.49	2.22	0.15	0.81	3.45	2.29	1.69	10.61	17.10
1985	0.33	0.41	0.06	0.68	0.23	0.62	2.33	0.50	0.61	0.37	1.04	0.22	0.58	3.32	5.65
1986	0.99	1.16	0.43	0.05	0.70	0.63	3.96	1.50	1.45	2.31	0.98	1.34	0.87	8.45	12.41
1987	1.18	0.71	0.15	0.41	0.74	0.88	4.07	0.48	1.24	0.24	1.02	1.21	0.21	4.40	8.47
1988	0.82	1.13	0.91	0.84	0.14	1.71	5.55	0.30	1.64	0.18	0.39	0.30	1.35	4.16	9.71
1989	0.01	0.61	0.38	0.08	1.92	0.47	3.47	0.06	0.26	0.42	0.79	1.09	1.28	3.90	7.37
1990	0.48	0.18	0.57	0.41	0.99	0.84	3.47	0.40	0.74	0.79	0.99	1.17	0.60	4.69	8.16
1991	0.93	0.69	0.43	0.34	0.32	0.61	3.32	0.79	2.49	1.15	0.78	0.64	0.53	6.38	9.70
1992	0.50	0.99	0.14	1.06	0.60	0.54	3.83	0.40	2.40	0.97	1.63	0.77	0.51	6.68	10.51
1993	0.88	0.60	0.73	0.19	0.47	0.95	3.82	2.02	2.49	0.90	0.29	1.21	1.32	8.23	12.05
1994	2.22	0.84	0.37	0.37	0.94	0.67	5.41	1.04	0.23	0.37	0.24	0.51	0.29	2.68	8.09
1995	1.31	0.43	0.28	0.52	0.52	0.77	3.83	1.51	5.45	2.31	0.99	0.89	1.08	12.23	16.06
1996	1.18	0.96	0.12	0.71	0.20	0.45	3.62	2.04	1.98	0.41	0.31	0.30	0.36	5.40	9.02
1997	0.91	0.64	0.34	1.19	0.38	0.20	3.66	1.67	1.98	1.32	0.80	2.14	2.01	9.92	13.58
1998	0.55	0.12	0.38	0.17	0.39	0.68	2.29	0.56	1.19	3.01	1.29	1.34	0.72	8.11	10.40
1999	2.28	0.30	0.61	0.70	0.18	0.24	4.31	1.03	1.53	1.96	1.38	0.64	1.39	7.93	12.24
2000	0.14	0.57	0.21	0.21	0.30	0.61	2.04	0.81	1.93	0.24	0.55	0.63	2.32	6.48	8.52
2001	0.33	0.55	0.14	0.48	0.91	0.18	2.59	0.95	0.55	0.10	0.87	1.01	0.06	3.54	6.13

Appendix 2.1.4.E. Study period precipitation assessment - Above Pathfinder subbasin

Weather station: Medicine Bow
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972	0.72	0.20	0.85	0.71	0.22	0.16	2.86	1.35	0.96	1.65	0.12	1.97	0.96	7.01	9.87
1973	2.47	0.77	0.88	0.61	0.56	2.18	7.47	2.56	0.68	0.48	4.47	0.30	4.23	12.72	20.19
1974	0.07	0.37	0.98					1.25	1.72	1.88	0.25	0.26	1.21	6.57	
1975	1.25	0.00	0.17	1.40	1.70	1.87	6.39	0.67	1.80	0.44	2.01	0.60	0.94	6.46	12.85
1976	0.75	0.50	3.22	1.10	0.85	0.50	6.92	1.61	0.94	1.10	0.42	1.13	0.14	5.34	12.26
1977	0.17	0.18	0.43	0.77	0.08	0.43	2.06	1.79	1.49	0.62	1.40	0.93	0.00	6.23	8.29
1978	1.18	0.81	0.10	0.69	0.56	0.67	4.01	0.94	3.48	0.48	0.70	1.25	0.70	7.55	11.56
1979	1.16	0.37	0.98					1.25	0.90	0.27	0.00	3.27	0.10	5.79	
1980	1.90	0.56	0.40	1.19	1.80	0.79	6.64	1.25	0.76	0.00	0.09	0.93	0.62	3.65	10.29
1981	2.01	0.25	0.00	0.07	0.05	0.50		1.40	3.90	0.02	1.25	0.00	1.00	7.57	
1982					0.46	0.93									
1983															
1984															
1985															
1986												1.94	0.64		
1987	1.36	0.61	0.01	0.08	0.44	0.18	2.68	0.19	2.18	1.10	0.60	1.22	0.34	5.63	8.31
1988	0.36	0.37	0.92	0.41	0.30	0.38	2.74	0.45	1.18	1.12	0.20	0.49	0.32	3.76	6.50
1989	0.00	0.30	0.19	0.00	1.53	0.41	2.43	0.40	1.09	3.47	0.87	0.88	2.21	8.92	11.35
1990	0.01	0.25	0.18	0.34	0.43	1.73	2.94	0.76	0.49	0.00	1.28	0.86	2.17	5.56	8.50
1991	0.54	0.93	0.41	0.19	0.05	0.10	2.22	0.42	3.29	2.03	1.15	0.65	0.24	7.78	10.00
1992	0.42	1.18	0.10	0.24	0.30	0.85	3.09	0.79	3.27	0.77	4.06	0.51	0.62	10.02	13.11
1993	0.54	0.82	0.59	0.54	0.73	0.34	3.56	1.40	1.49	2.07	0.39	1.27	1.11	7.73	11.29
1994	0.30	0.69	0.22	0.25	0.50	0.27	2.23	0.74	0.84	1.96	1.91	0.39	0.21	6.05	8.28
1995	1.17	0.58	0.41	0.30	0.68	0.25	3.39	1.99	4.80	2.26	1.36	0.35	1.95	12.71	16.10
1996	1.07	0.42	0.18	0.87	0.22	0.30	3.06	1.32	1.77	0.76	0.69	0.32	0.78	5.64	8.70
1997	1.18	0.76	0.31	0.72	0.54	0.39	3.90	1.14	1.14	2.15	0.30	2.04	1.69	8.46	12.36
1998	0.24	0.31	0.37	0.18	0.36	0.84	2.30	0.59	1.27	2.60	2.59	1.07	0.70	8.82	11.12
1999	2.57	0.31	0.78	0.74	0.13	0.24	4.77	2.41	1.25	1.01	0.75	0.33	0.38	6.13	10.90
2000	0.33	0.51	0.17	0.25	0.90	0.66	2.82	0.86	2.61	1.48	0.51	0.70	2.13	8.29	11.11
2001	0.23	0.35	0.38	0.32	0.86	0.45	2.59	2.03	1.35	0.20	0.95	0.87	0.49	5.89	8.48

Appendix 2.1.4.E. Study period precipitation assessment - Above Pathfinder subbasin

Weather station: Muddy Gap
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972	2.26	0.40	0.25	0.45	0.33	0.19	3.88	1.89	1.35	0.89	0.59	1.05	0.12	5.89	9.77
1973	3.26	0.52	1.21	0.78	0.25	0.40	6.42	2.29	0.10	0.06	2.60	0.78	0.70	6.53	12.95
1974	0.34	0.88	0.94	0.51	1.64	0.19	4.50	2.76	0.20	1.32	1.82	0.50	0.91	7.51	12.01
1975	1.07	0.34	1.00	0.61	0.41	0.62	4.05	0.43	4.32	0.60	2.18	0.78	0.48	8.79	12.84
1976	0.55	0.10	0.29	0.49	0.44	0.25	2.12	0.33	0.70	1.09					
1977															
1978															
1979	0.18	1.25	0.74	0.30	0.17	0.95	3.59	0.97	2.86	0.59	0.99	3.69	0.02	9.12	12.71
1980								0.49	2.48	0.00	0.00	1.24	0.06	4.27	
1981	0.83	0.88	0.05	0.17	0.08	2.98	4.99	0.94	3.08	0.00	0.94	0.77	1.03	6.76	11.75
1982	0.56	1.28	0.07	0.25	0.09	0.46	2.71	0.57	1.57	1.17	0.62	0.14	4.28	8.35	11.06
1983	1.07	1.01	0.54	0.25	0.47	1.05	4.39	2.47	1.66	1.22	0.72	0.81	0.41	7.29	11.68
1984	1.14	3.37	0.89	0.41	0.56	0.79	7.16	2.57	0.68	0.57	2.65	0.59	0.55	7.61	14.77
1985	0.43	0.27	0.32	0.53	0.57	0.73	2.85	1.65	0.69	1.46	1.32	0.05	1.55	6.72	9.57
1986	0.09	0.78	0.86	0.17	0.70	1.98	4.58	1.64	1.94	1.56	0.68	0.65	0.44	6.91	11.49
1987	1.94	0.95	0.06	1.25	0.52	0.58	5.30	0.69	1.79	1.63	1.13	1.16	0.31	6.71	12.01
1988	0.72	0.92	0.77	0.57	0.27	1.35	4.60	0.87	1.88	0.06	0.10	0.31	2.30	5.52	10.12
1989	0.00	0.20	1.01	0.25	1.35	0.49	3.30	0.36	1.59	0.56	1.75	0.77	1.65	6.68	9.98
1990	0.41	0.49	0.43	0.06	0.42	1.32	3.13	1.22	1.65	1.15	1.64	0.03	1.63	7.32	10.45
1991	1.19	1.80	0.74	0.30	0.29	0.20	4.52	1.71	5.11	2.23	0.77	0.38	0.71	10.91	15.43
1992	0.58	1.54	0.04	0.26	0.06	1.22	3.70	0.76	4.29	1.16	1.15	0.52	0.24	8.12	11.82
1993	0.14	1.74	0.74	0.62	0.27	0.88	4.39	0.98	1.72	1.73	0.96	0.21	0.75	6.35	10.74
1994	1.75	0.30	0.47	0.28	0.39	0.18	3.37	0.97	0.28	0.25	1.25	0.38	0.72	3.85	7.22
1995	2.17	1.08	0.48	0.30	0.47	0.14	4.64	1.48	4.53	1.82	1.15	0.00	0.81	9.79	14.43
1996	2.46	1.29	0.22	0.56	0.15	0.89	5.57	1.52	3.55	0.54	0.02	0.13	0.73	6.49	12.06
1997	1.64	1.01	0.52	0.40	0.60	0.68	4.85	2.25	2.17	1.42	0.80	1.25	0.85	8.74	13.59
1998	0.44	0.33	0.75	0.07	0.70	3.85	6.14	0.53	2.45	2.80	1.31	0.28	1.06	8.43	14.57
1999	2.15	0.54	0.41	0.48	0.15	0.09	3.82	3.06	0.92	0.21	0.03	1.03	0.83	6.08	9.90
2000	0.02	0.25	0.02	0.00	0.26	1.07	1.62	0.71	1.93	0.72	0.02	0.39	0.68	4.45	6.07
2001	0.60	0.20	0.14	0.17	0.53	0.00	1.64	0.93	0.03	1.14	0.62	0.77	0.94	4.43	6.07

Appendix 2.1.4.E. Study period precipitation assessment - Above Pathfinder subbasin

Average precipitation - all weather stations - Above Pathfinder subbasin

Year	Oct	Nov	Dec	Jan	Feb	Mar	Average Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Average Apr-Sep	Average annual
1972	1.13	0.35	0.66	0.68	0.37	0.35	3.53	1.35	1.00	1.60	0.48	1.22	1.06	6.40	9.92
1973	3.04	0.84	1.28	0.54	0.43	1.27	7.41	2.45	0.80	0.65	2.54	0.57	1.89	8.90	16.30
1974	0.17	1.31	1.12	0.61	0.87	1.02	5.49	1.92	0.65	1.47	1.62	0.32	0.96	6.93	12.54
1975	1.28	0.27	0.73	1.11	0.74	1.56	5.68	1.09	2.09	0.58	1.93	0.69	0.60	6.98	12.66
1976	1.32	0.34	1.45	0.50	0.79	0.66	5.06	1.20	1.20	1.38	1.47	0.98	0.29	7.06	13.10
1977	0.25	0.15	0.42	0.51	0.31	0.95	2.58	1.75	2.98	0.38	1.64	1.28	0.42	8.45	11.03
1978	0.76	0.88	0.14	0.65	0.61	0.74	3.79	0.67	2.97	0.47	0.52	0.80	0.75	6.17	9.96
1979	0.69	0.74	1.24	0.39	0.33	1.12	4.55	1.07	1.70	0.32	0.37	2.78	0.17	6.40	11.15
1980	1.64	0.55	0.37	1.87	1.03	0.98	6.44	0.58	1.78	0.01	0.31	1.00	0.77	4.45	10.94
1981	1.34	0.51	0.16	0.11	0.22	1.25	3.82	1.02	3.59	0.21	1.40	0.71	0.84	7.76	11.64
1982	1.23	0.77	0.42	0.62	0.28	0.65	3.82	0.53	1.37	1.31	1.66	0.36	2.45	7.69	11.51
1983	1.26	1.01	0.61	0.12	0.35	1.58	4.92	2.10	1.58	1.87	1.50	0.98	0.57	8.61	13.53
1984	1.35	2.75	0.92	0.30	0.69	1.28	7.29	2.43	0.51	0.88	2.61	1.46	1.35	9.23	16.52
1985	0.52	0.47	0.33	0.74	0.39	0.81	3.25	1.17	0.65	0.81	1.41	0.17	1.13	5.35	8.60
1986	1.04	1.34	0.58	0.11	1.08	1.19	5.33	1.51	1.54	2.12	1.01	1.17	0.78	7.91	13.24
1987	1.58	0.76	0.12	0.60	0.58	0.63	4.27	0.60	1.61	0.94	1.05	1.17	0.24	5.61	9.87
1988	0.78	0.81	0.88	0.61	0.32	1.21	4.61	0.50	1.50	0.66	0.29	0.39	1.33	4.66	9.28
1989	0.04	0.60	0.53	0.15	1.86	0.61	3.78	0.29	0.86	1.31	1.08	1.15	1.66	6.34	10.12
1990	0.31	0.41	0.52	0.26	0.81	1.29	3.58	0.84	0.85	0.73	1.47	0.69	1.38	5.97	9.54
1991	1.09	1.07	0.52	0.36	0.27	0.45	3.75	0.98	3.26	1.72	0.81	0.80	0.49	8.05	11.80
1992	0.48	1.36	0.12	0.51	0.44	0.87	3.77	0.81	3.09	1.08	2.43	0.77	0.61	8.79	12.56
1993	0.63	1.13	0.85	0.51	0.75	0.91	4.78	1.79	1.89	1.74	0.50	1.00	1.18	8.09	12.87
1994	1.56	0.98	0.59	0.33	0.89	0.53	4.88	1.03	0.50	0.81	0.95	0.66	0.36	4.31	9.18
1995	1.46	0.79	0.38	0.53	0.59	0.53	4.28	1.64	4.98	2.03	1.26	0.45	1.48	11.83	16.10
1996	1.60	0.97	0.16	0.66	0.25	0.64	4.28	1.61	2.38	0.55	0.51	0.42	0.62	6.08	10.35
1997	1.37	1.04	0.58	1.00	0.52	0.42	4.93	1.92	1.66	1.42	0.72	1.96	1.84	9.50	14.43
1998	0.62	0.25	0.46	0.18	0.62	1.58	3.71	0.74	1.48	2.67	1.99	0.88	0.82	8.58	12.29
1999	2.33	0.38	0.60	0.64	0.15	0.19	4.30	2.17	1.23	1.06	0.72	0.67	0.87	6.71	11.01
2000	0.16	0.44	0.13	0.15	0.49	0.78	2.16	0.79	2.16	0.81	0.36	0.57	1.71	6.41	8.57
2001	0.39	0.37	0.22	0.32	0.77	0.21	2.27	1.30	0.64	0.48	0.81	0.88	0.50	4.62	6.89

Notes:

Indicates cell for which precipitation data was not available; values shown are average of previous five annual values; if five previous values are not available, values shown are averages of subsequent three, four, or five annual values as available

0.25

No subtotal or total precipitation was calculated for years during which data for three or more months of each semi-annual period were not available

Appendix 2.1.4.E. Study period precipitation assessment - Pathfinder to Guernsey subbasin

Subbasin: Pathfinder to Guernsey
Weather station: Casper WSO AP
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972	1.73	0.61	0.34	0.99	0.41	1.41	5.49	1.44	0.76	0.83	1.04	1.52	0.37	5.96	11.45
1973	2.04	0.66	0.41	0.63	0.57	0.52	4.83	3.86	1.02	0.66	2.26	0.34	3.28	11.42	16.25
1974	0.60	0.80	0.55	0.69	0.42	0.37	3.43	3.92	0.62	0.60	0.75	1.00	0.83	7.72	11.15
1975	1.15	0.46	0.22	0.51	0.51	2.01	4.86	0.97	3.88	0.94	0.63	0.12	0.11	6.65	11.51
1976	1.01	0.51	0.72	0.44	0.89	0.50	4.07	1.52	2.69	1.66	1.07	0.31	1.15	8.40	12.47
1977	1.21	0.09	0.38	0.35	0.69	1.05	3.77	1.07	1.93	0.19	1.88	0.34	0.30	5.71	9.48
1978	0.71	0.79	0.71	0.70	0.75	0.93	4.59	1.05	6.46	1.40	2.62	0.93	0.26	12.72	17.31
1979	0.40	0.94	1.20	0.81	0.39	1.31	5.05	0.83	2.25	1.31	1.22	2.66	0.18	8.45	13.50
1980	0.50	0.75	0.36	0.81	0.63	1.19	4.24	0.35	2.82	0.10	0.85	0.65	0.10	4.87	9.11
1981	0.64	0.74	0.37	0.46	0.23	0.77	3.21	1.56	3.51	0.37	1.27	0.50	0.23	7.44	10.65
1982	0.76	0.75	0.43	0.41	0.33	0.60	3.28	1.25	2.10	4.15	1.92	0.88	3.40	13.70	16.98
1983	1.18	0.55	3.71	0.42	0.35	2.29	8.50	2.28	1.40	3.76	2.61	0.75	0.20	11.00	19.50
1984	0.88	2.72	0.75	1.19	0.48	1.59	7.61	2.23	1.33	1.34	2.26	0.25	0.50	7.91	15.52
1985	0.71	0.70	0.78	0.79	0.61	0.52	4.11	1.25	1.37	1.32	1.57	0.09	1.09	6.69	10.80
1986	0.46	1.56	1.05	0.36	0.89	0.55	4.87	1.89	1.33	4.06	0.88	0.27	1.31	9.74	14.61
1987	2.63	1.48	0.27	1.42	1.42	1.43	8.65	0.35	1.40	0.70	1.93	1.80	0.59	6.77	15.42
1988	0.55	0.77	0.63	0.28	0.79	0.71	3.73	0.71	1.24	0.28	0.55	0.16	0.74	3.68	7.41
1989	0.12	0.48	0.50	0.16	1.37	0.49	3.12	0.72	2.77	1.95	0.28	1.00	3.22	9.94	13.06
1990	1.17	0.34	0.31	0.27	0.70	1.13	3.92	1.35	1.09	0.66	2.15	1.89	0.52	7.66	11.58
1991	0.90	1.27	0.61	0.54	0.38	0.45	4.15	1.42	4.75	1.70	0.09	0.61	0.40	8.97	13.12
1992	0.55	1.18	0.34	0.17	0.35	1.27	3.86	0.08	2.05	0.79	1.51	0.86	0.29	5.58	9.44
1993	0.22	0.90	0.88	0.72	1.00	0.52	4.24	2.37	2.85	2.79	0.86	1.14	0.97	10.98	15.22
1994	1.14	0.87	0.68	0.60	0.82	0.57	4.68	0.90	0.37	0.22	2.66	0.85	0.68	5.68	10.36
1995	4.17	1.79	0.37	0.84	0.95	0.50	8.62	1.66	6.31	3.62	0.43	0.04	2.56	14.62	23.24
1996	1.07	0.62	0.34	0.94	0.24	0.56	3.77	1.72	1.29	0.83	1.26	0.32	0.47	5.89	9.66
1997	1.63	1.06	0.51	0.57	0.69	0.92	5.38	1.79	1.99	1.21	1.46	0.76	1.21	8.42	13.80
1998	0.83	0.08	0.53	0.49	0.56	0.52	3.01	1.00	0.73	2.67	1.99	0.59	0.79	7.77	10.78
1999	4.62	0.42	0.10	0.22	0.30	0.45	6.11	1.53	2.29	1.78	0.24	0.11	1.30	7.25	13.36
2000	0.25	0.36	0.10	0.46	0.54	0.58	2.29	1.18	3.32	0.86	0.22	0.95	1.65	8.18	10.47
2001	0.38	0.20	0.36	0.31	0.38	0.18	1.81	1.07	0.63	0.29	1.19	0.31	1.09	4.58	6.39

Appendix 2.1.4.E. Study period precipitation assessment - Pathfinder to Guernsey subbasin

Weather station: Glenrock 5 ESE
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972	1.70	0.72	0.00	1.10	0.26	0.41	4.19	2.22	2.28	3.09	0.67	2.04	0.80	11.10	15.29
1973	1.98	0.30	0.80	0.84	0.13	1.33	5.38	5.67	0.90	0.46	4.16	0.35	5.43	16.97	22.35
1974	0.31	0.59	0.48	0.36	0.57	0.25	2.56	1.78	0.30	0.00	0.50	1.00	0.80	4.38	6.94
1975	1.00	0.00	0.29	0.16	0.04	3.02	4.51	0.24	1.23	1.16	0.54	1.07	0.45	4.69	9.20
1976	1.42	0.07	0.26	0.15	0.39	0.29	2.58	3.19	3.84	1.57	1.47	0.12	1.70	11.89	14.47
1977	1.50	0.09	0.00	0.06	0.28	0.55	2.48	1.84	2.24	0.15	4.24	1.23	0.26	9.96	12.44
1978	1.12	1.41	0.25	0.10	0.38	0.52	3.78	1.73	6.18	0.56	1.27	1.50	0.19	11.43	15.21
1979	0.95	0.30	0.26	0.17	0.08	0.85	2.61	1.04	1.49	0.85	1.41	1.30	0.36	6.45	9.06
1980	0.39	2.54	0.17	0.92	0.41	0.48	4.91	0.33	2.30	0.00	0.15	1.00	0.16	3.94	8.85
1981	0.22	0.84	0.29	0.32	0.10	0.89	2.66	1.86	3.74	0.24	1.60	0.35	0.36	8.15	10.81
1982	0.61	0.01	0.28	0.60	0.06	0.13	1.69	2.69	2.80	4.26	0.24	0.14	1.91	12.04	13.73
1983	0.77	1.02	1.25	0.00	0.05	1.99	5.08	1.22	1.87	2.83	0.37	0.63	0.06	6.98	12.06
1984	0.69	2.44	0.45	0.10	0.15	0.70	4.53	1.43	1.44	0.00	1.18	0.85	0.57	5.47	10.00
1985	1.12	0.15	0.32	0.19	0.03	0.84	2.65	1.29	1.51	1.54	0.90	0.34	0.61	6.19	8.84
1986	1.01	0.89	0.75	0.01	0.51	0.91	4.08	1.46	1.40	2.39	0.49	0.20	0.87	6.81	10.89
1987	1.55	0.79	0.10	0.30	0.16	1.30	4.20	0.08	1.55	0.23	0.87	0.87	0.50	4.10	8.30
1988	0.00	0.52	0.95	0.11	0.77	0.48	2.83	0.07	1.29	0.65	0.76	0.40	0.66	3.83	6.66
1989	0.18	0.75	0.51	0.15	1.17	0.21	2.97	1.86	2.06	1.51	0.91	1.12	3.59	11.05	14.02
1990	0.99	0.11	0.20	0.36	0.31	0.87	2.84	2.14	1.52	0.49	3.31	0.90	0.21	8.57	11.41
1991	1.19	1.08	0.38	0.31	0.22	0.38	3.56	1.25	5.40	1.91	0.58	0.69	0.30	10.13	13.69
1992	0.77	0.54	0.00	0.20	0.38	1.65	3.54	0.15	1.93	2.32	1.75	0.48	0.76	7.39	10.93
1993	1.65	0.92	0.67	0.27	1.06	0.58	5.15	1.55	0.81	2.85	1.18	0.42	1.08	7.89	13.04
1994	0.92	1.55	0.50	0.37	0.57	0.25	4.16	1.24	0.27	0.29	1.83	0.06	0.45	4.14	8.30
1995	1.97	0.79	0.27	0.66	0.67	0.51	4.87	1.52	5.30	2.39	0.53	0.09	2.83	12.66	17.53
1996	1.99	0.78	0.12	0.26	0.02	0.79	3.96	3.17	2.27	0.31	0.30	0.02	0.74	6.81	10.77
1997	1.58	0.84	0.31	0.69	1.33	0.53	5.28	0.85	1.61	1.33	1.38	2.09	0.81	8.07	13.35
1998	0.17	0.11	0.21	0.31	0.39	1.09	2.28	1.05	0.92	1.66	0.99	0.82	1.05	6.49	8.77
1999	3.43	0.32	0.01	0.46	0.09	0.15	4.46	3.17	1.37	2.84	0.37	0.08	2.78	10.61	15.07
2000	0.31	0.14	0.05	0.28	0.42	0.64	1.84	2.33	3.24	1.07	0.08	0.56	1.37	8.65	10.49
2001	1.50	1.04	0.38	0.31	0.79	0.18	4.20	2.11	1.88	0.02	1.82	0.76	0.97	7.56	11.76

Appendix 2.1.4.E. Study period precipitation assessment - Pathfinder to Guernsey subbasin

Weather station: Douglas (through 1995) and Douglas 1 ESE (1996 - 2001)
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972	1.11	0.76	0.07	1.15	0.21	1.25	4.55	2.07	2.13	1.71	2.08	3.25	0.69	11.93	16.48
1973	1.04	0.35	0.29	0.12	0.28	1.18	3.26	3.19	0.52	0.58	4.61	0.50	0.69	10.09	13.35
1974	0.12	0.72	0.28	0.51	0.18	0.20	2.01	1.46	0.23	1.19	0.26	0.58	0.70	4.42	6.43
1975	0.74	0.22	0.28	0.59	0.44	1.07	3.34	0.30	2.70	1.12	0.56	1.09	1.11	6.88	10.22
1976	1.02	0.11	0.93	0.30	0.58	0.30	3.24	3.55	3.11	1.67	0.40	0.10	1.39	10.22	13.46
1977	0.73	0.20	0.14	0.31	0.10	0.48	1.96	1.97	1.58	0.30	2.18	1.10	0.20	7.33	9.29
1978	0.54	1.11	0.40	0.48	0.31	0.65	3.49	1.00	4.22	0.59	1.20	0.87	0.09	7.97	11.46
1979	0.85	0.69	0.44	0.44	0.07	0.44	2.93	0.74	1.09	1.51	2.78	0.94	0.70	7.76	10.69
1980	0.33	0.80	0.36	0.50	0.64	0.86	3.49	0.21	4.40	0.00	1.42	1.15	0.07	7.25	10.74
1981	0.53	0.28	0.31	0.12	0.17	0.82	2.23	1.25	3.28	0.29	1.80	0.40	0.11	7.13	9.36
1982	0.46	0.58	0.14	0.15	0.13	0.30	1.76	0.61	3.02	2.21	3.07	0.89	0.23	10.03	11.79
1983						2.07		1.08	3.20	2.09	2.51	1.50	0.06	10.44	10.44
1984	0.40	2.01	0.39	0.37	0.42	0.79	4.38	1.70	1.60	1.12	2.23	0.42	0.55	7.62	12.00
1985	0.44	0.11	0.64	0.49	0.42	0.45	2.55	1.04	1.04	1.14	1.91	0.38	1.86	7.37	9.92
1986	0.46	1.00	0.51	0.17	0.80	0.45	3.39	2.68	1.05	4.58	1.56	0.35	1.34	11.56	14.95
1987	1.24	1.14	0.42	0.33	0.83	1.19	5.15	1.42	2.73	0.98	1.05	0.96	0.98	8.12	13.27
1988	0.25	0.90	0.49	0.15	0.47	1.40	3.66	0.27	1.26	0.60	1.14	0.46	0.92	4.65	8.31
1989	0.00	0.60	0.37	0.03	0.85	0.37	2.22	1.40	1.58	1.59	0.67	1.92	2.42	9.58	11.80
1990	0.92	0.24	0.39	0.67	0.61	1.81	4.64	1.36	2.75	1.78	2.83	0.65	0.47	9.84	14.48
1991	0.57	1.17	0.24	0.30	0.14	0.76	3.18	1.87	7.48	2.71	0.65	0.35	1.04	14.10	17.28
1992	0.60	0.81	0.14	0.15	0.31	2.01	4.02	0.38	1.87	3.37	1.39	0.95	0.21	8.17	12.19
1993	0.07	0.74	0.93	0.36	1.50	0.69	4.29	3.82	1.18	4.40	1.07	0.87	1.20	12.54	16.83
1994	0.43	1.12	0.38	0.45	0.37	0.23	2.98	1.14	1.24	0.20	1.32	1.63	0.46	5.99	8.97
1995	0.52	0.97	0.53	0.49	0.59	1.10	4.20								
1996	2.02	0.60	0.27	0.67	0.24	0.77	4.57	2.58	3.17	0.86	1.13	0.52	0.49	8.75	13.32
1997	2.92	0.87	0.88	0.72	1.06	0.47	6.92	2.05	6.94	2.21	2.98	1.74	0.78	16.70	23.62
1998	1.17	0.15	0.72	1.22	2.11	1.85	7.22	1.26	1.50	2.93	1.63	2.37	1.57	11.26	18.48
1999	6.77	0.50	0.48	0.94	0.25	0.63	9.57	5.14	2.15	2.82	0.45	0.20	2.94	13.70	23.27
2000	0.43	0.58	0.23	0.97	1.31	1.15	4.67	3.12	1.77	1.08	0.82	0.64	3.27	10.70	15.37
2001	0.00				1.01	0.49		1.05	0.93	0.81	3.10	0.61	1.10	7.60	7.60

Appendix 2.1.4.E. Study period precipitation assessment - Pathfinder to Guernsey subbasin

Average precipitation - all weather stations - Pathfinder to Guernsey subbasin

Year							Average Oct-Mar							Average Apr-Sep	Average annual
1972	1.51	0.70	0.14	1.08	0.29	1.02	4.74	1.91	1.72	1.88	1.26	2.27	0.62	9.66	14.41
1973	1.69	0.44	0.50	0.53	0.33	1.01	4.49	4.24	0.81	0.57	3.68	0.40	3.13	12.83	17.32
1974	0.34	0.70	0.44	0.52	0.39	0.27	2.67	2.39	0.38	0.60	0.50	0.86	0.78	5.51	8.17
1975	0.96	0.23	0.26	0.42	0.33	2.03	4.24	0.50	2.60	1.07	0.58	0.76	0.56	6.07	10.31
1976	1.15	0.23	0.64	0.30	0.62	0.36	3.30	2.75	3.21	1.63	0.98	0.18	1.41	10.17	13.47
1977	1.15	0.13	0.17	0.24	0.36	0.69	2.74	1.63	1.92	0.21	2.77	0.89	0.25	7.67	10.40
1978	0.79	1.10	0.45	0.43	0.48	0.70	3.95	1.26	5.62	0.85	1.70	1.10	0.18	10.71	14.66
1979	0.73	0.64	0.63	0.47	0.18	0.87	3.53	0.87	1.61	1.22	1.80	1.63	0.41	7.55	11.08
1980	0.41	1.36	0.30	0.74	0.56	0.84	4.21	0.30	3.17	0.03	0.81	0.93	0.11	5.35	9.57
1981	0.46	0.62	0.32	0.30	0.17	0.83	2.70	1.56	3.51	0.30	1.56	0.42	0.23	7.57	10.27
1982	0.61	0.45	0.28	0.39	0.17	0.34	2.24	1.52	2.64	3.54	1.74	0.64	1.85	11.92	14.17
1983	0.98	0.79	2.48	0.21	0.20	2.12	6.79	1.53	2.16	2.89	1.83	0.96	0.11	9.47	14.00
1984	0.66	2.39	0.53	0.55	0.35	1.03	5.51	1.79	1.46	0.82	1.89	0.51	0.54	7.00	12.51
1985	0.76	0.32	0.58	0.49	0.35	0.60	3.10	1.19	1.31	1.33	1.46	0.27	1.19	6.75	9.85
1986	0.64	1.15	0.77	0.18	0.73	0.64	4.11	2.01	1.26	3.68	0.98	0.27	1.17	9.37	13.48
1987	1.81	1.14	0.26	0.68	0.80	1.31	6.00	0.62	1.89	0.64	1.28	1.21	0.69	6.33	12.33
1988	0.27	0.73	0.69	0.18	0.68	0.86	3.41	0.35	1.26	0.51	0.82	0.34	0.77	4.05	7.46
1989	0.10	0.61	0.46	0.11	1.13	0.36	2.77	1.33	2.14	1.68	0.62	1.35	3.08	10.19	12.96
1990	1.03	0.23	0.30	0.43	0.54	1.27	3.80	1.62	1.79	0.98	2.76	1.15	0.40	8.69	12.49
1991	0.89	1.17	0.41	0.38	0.25	0.53	3.63	1.51	5.88	2.11	0.44	0.55	0.58	11.07	14.70
1992	0.64	0.84	0.16	0.17	0.35	1.64	3.81	0.20	1.95	2.16	1.55	0.76	0.42	7.05	10.85
1993	0.65	0.85	0.83	0.45	1.19	0.60	4.56	2.58	1.61	3.35	1.04	0.81	1.08	10.47	15.03
1994	0.83	1.18	0.52	0.47	0.59	0.35	3.94	1.09	0.63	0.24	1.94	0.85	0.53	5.27	9.21
1995	2.22	1.18	0.39	0.66	0.74	0.70	5.90	1.59	5.81	3.01	0.48	0.07	2.70	13.64	20.39
1996	1.69	0.67	0.24	0.62	0.17	0.71	4.10	2.49	2.24	0.67	0.90	0.29	0.57	7.15	11.25
1997	2.04	0.92	0.57	0.66	1.03	0.64	5.86	1.56	3.51	1.58	1.94	1.53	0.93	11.06	16.92
1998	1.31	0.35	0.54	0.67	1.02	1.15	4.17	1.10	1.05	2.42	1.54	1.26	1.14	8.51	12.68
1999	3.07	0.30	0.28	0.54	0.21	0.41	6.71	3.28	1.94	2.48	0.35	0.13	2.34	10.52	17.23
2000	2.44	0.33	0.21	0.57	0.76	0.79	2.93	2.21	2.78	1.00	0.37	0.72	2.10	9.18	12.11
2001	0.77	0.61	0.32	0.31	0.73	0.28	3.01	1.41	1.15	0.37	2.04	0.56	1.05	6.58	8.58

Notes:

0.25 Indicates cell for which precipitation data was not available; values shown are average of previous five annual values; if five previous values are not available, values shown are averages of subsequent three, four, or five annual values as available

No subtotal or total precipitation was calculated for years during which data for three or more months of the semi-annual period were not available

Appendix 2.1.4.E. Study period precipitation assessment - Guernsey to State Line subbasin

Subbasin: Guernsey to State Line
Weather station: Torrington Experimental Farm
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972	1.17	0.10	0.03	0.26	0.07	0.83	2.46	2.96	0.89	1.46	2.17	2.57	0.75	10.80	13.26
1973	0.61	0.34	0.29	0.13	0.17	0.37	1.91	1.83	0.26	2.45	2.88	0.11	4.71	12.24	14.15
1974	0.04	0.99	0.68	0.68	0.25	0.56	3.20	0.93	0.33	1.90	0.85	1.38	0.93	6.32	9.52
1975	0.75	0.40	0.00	0.36	0.39	0.31	2.21	2.67	1.97	1.22	0.86	0.44	0.36	7.52	9.73
1976	0.77	0.00	0.53	0.23	0.10	0.49	2.12	2.22	3.14	2.78	3.14	0.74	0.63	12.65	14.77
1977	0.27	0.00	0.00	0.07	0.00	0.22	0.56	2.12	1.52	4.66	1.55	1.28	0.29	11.42	11.98
1978	0.24	0.66	0.59	0.85	0.96	0.25	3.55	1.20	4.47	1.71	2.20	1.05	0.46	11.09	14.64
1979	0.86	0.52	0.79	0.63	0.09	0.53	3.42	0.90	1.88	1.87	2.54	1.61	0.34	9.14	12.56
1980	1.21	0.92	0.84	0.57	0.88	1.31	5.73	0.99	2.75	0.11	0.97	2.59	0.33	7.74	13.47
1981	1.82	0.46	0.19	0.44	0.09	0.35	3.35	1.60	3.30	1.38	3.07	1.99	0.59	11.93	15.28
1982	0.60	0.50	0.13	0.24	0.08	0.24	1.79	0.59	3.67	4.07	3.15	2.35	3.79	17.62	19.41
1983	1.19	0.87	0.44	0.04	0.05	1.42	4.01	1.39	3.97	2.50	2.39	1.06	0.40	11.71	15.72
1984	0.36	1.26	0.52	0.25	0.77	1.16	4.32	3.48	1.43	1.53	2.86	0.79	0.32	10.41	14.73
1985	1.48	0.09	0.45	0.41	0.10	0.18	2.71	2.13	0.97	1.51	1.08	0.41	2.46	8.56	11.27
1986	1.45	1.24	0.77	0.06	1.13	1.00	5.65	2.75	1.50	2.92	1.56	1.59	1.20	11.52	17.17
1987	3.25	0.84	0.05	0.20	0.98	1.21	6.53	0.71	3.56	3.06	1.25	1.38	0.63	10.59	17.12
1988	0.20	0.74	0.81	0.20	0.12	0.51	2.58	1.67	3.27	1.33	3.24	0.26	0.75	10.52	13.10
1989	0.14	0.24	0.18	0.00	0.68	0.47	1.71	1.33	1.90	1.04	0.22	0.83	1.70	7.02	8.73
1990	0.42	0.13	0.42	0.15	0.72	2.31	4.15	1.38	2.58	1.11	2.19	2.05	2.12	11.43	15.58
1991	0.63	1.07	0.05	0.27	0.11	0.47	2.60	1.52	4.57	4.52	1.02	0.48	0.92	13.03	15.63
1992	0.57	0.59	0.12	0.25	0.42	0.96	2.91	0.15	1.36	1.33	3.79	1.56	0.22	8.41	11.32
1993	0.70	0.25	0.81	0.29	1.29	0.70	4.04	1.42	0.45	5.18	1.18	2.36	1.90	12.49	16.53
1994	1.60	1.12	0.27	0.18	0.28	0.25	3.70	0.96	0.50	1.37	2.73	0.50	0.78	6.84	10.54
1995	1.29	0.39	0.97	0.38	0.10	0.19	3.32	0.70	5.37	3.34	0.54	0.03	1.42	11.40	14.72
1996	0.38	0.35	0.38	0.50	0.02	0.27	1.90	1.30	4.00	1.15	0.38	0.69	1.19	8.71	10.61
1997	0.58	0.28	0.13	0.34	0.13	0.13	1.59	1.90	6.13	2.22	2.53	1.85	1.53	16.16	17.75
1998	1.77	0.20	0.15	0.13	0.53	0.95	3.73	1.12	2.49	2.33	0.96	2.24	0.42	9.56	13.29
1999	3.21	1.02	0.28	0.03	0.34	0.61	5.49	2.54	2.13	2.67	0.63	0.69	2.32	10.98	16.47
2000	0.15	0.26	0.11	0.85	0.70	1.12	3.19	2.30	1.56	0.25	1.48	0.73	2.60	8.92	12.11
2001	0.69	1.33	0.25	0.08	0.33	0.23	2.91	2.18	1.52	0.90	3.45	0.49	1.41	9.95	12.86

Notes:

0.25 Indicates cell for which precipitation data was not available; values shown are average of previous five annual values; if five previous values are not available, values shown are averages of subsequent three, four, or five annual values as available

No subtotal or total precipitation was calculated for years during which data for three or more months of the semi-annual period were not available

Appendix 2.1.4.E. Study period precipitation assessment - Upper Laramie River subbasin

Subbasin: Upper Laramie River
Weather station: Centennial 1N
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972															
1973															
1974															
1975															
1976															
1977								0.87	2.18	0.09	3.73	1.61	0.50	8.98	8.98
1978	0.92	1.62	2.16	1.21	0.89	0.94	7.74	0.99	1.93	1.43	0.42	0.48	0.71	5.96	13.70
1979	0.90	1.08	2.95	1.61	0.73	0.86	8.13	0.74	1.83	0.95	0.21	2.84	0.29	6.86	14.99
1980	0.78	0.86	0.56	2.71	0.80	0.83	6.54	1.22	1.71	0.45	0.82	0.92	1.27	6.39	12.93
1981	1.18	0.43	0.25	0.18	0.38	0.79	3.21	0.88	3.64	1.02	1.30	1.80	1.73	10.37	13.58
1982	1.85	0.39	2.24	1.28	0.17	1.02	6.95	0.52	1.79	1.44	1.99	0.85	2.41	9.00	15.95
1983	0.26	0.52	0.44	0.43	0.26	1.67	3.58	2.32	0.96	1.92	2.91	2.55	0.09	10.75	14.33
1984	0.84	2.31	1.56	0.18	0.22	0.96	6.07	1.54	0.47	1.15	5.39	1.41	2.00	11.96	18.03
1985	0.43	0.40	0.83	0.55	0.25	1.14	3.60	1.75	0.92	1.12	1.59	0.61	1.65	7.64	11.24
1986	1.38	2.67	0.76	0.23	2.67	0.34	8.05	0.98	1.52	3.02	0.99	1.08	0.95	8.54	16.59
1987	1.63	2.07	0.20	0.60	0.43	0.53	5.46	0.36	2.34	1.66	2.77	1.49	0.14	8.76	14.22
1988	0.86	0.59	1.21	1.08	0.98	1.93	6.65	0.66	1.32	0.42	0.77	0.45	0.79	4.41	11.06
1989	0.16	1.11	0.53	0.74	1.99	0.87	5.40	1.45	0.90	0.71	1.58	1.40	1.55	7.59	12.99
1990	0.47	1.00	0.58	1.11	0.98	1.72	5.86	1.91	0.64	0.82	3.48	0.77	2.45	10.07	15.93
1991	1.38	0.78	1.12	0.59	0.33	1.09	5.29	1.19	2.28	2.43	2.92	1.66	0.43	10.91	16.20
1992	0.24	2.38	0.28	0.48	0.28	1.23	4.89								
1993	0.62	0.67	0.88	0.53	0.97	0.76	4.43	1.30	1.09	2.90	0.37	0.91	1.17	7.74	12.17
1994	1.36	1.47	0.00	1.50	3.54	0.70	8.57	1.14	0.49	0.59	0.25	0.61	0.26	3.34	11.91
1995	0.39	0.55	0.33	0.37	0.95	1.10	3.69	1.87	5.83	2.03	0.73	0.43	2.00	12.89	16.58
1996	0.66	1.61	0.94	2.79	0.88	0.88	7.76	1.38	1.79	0.68	1.34	1.32	0.97	7.48	15.24
1997	0.56	1.34	2.59	1.32			5.81	2.49	0.90	1.18	1.93	2.71	2.96	12.17	17.98
1998	1.47	0.73				3.01					1.56		0.72		
1999				3.08	0.56	0.60	4.24	3.99	2.07	1.31	1.19	1.13	1.02	10.71	14.95
2000	0.26	0.80	0.62	1.61	0.67	0.82	4.78	1.59	2.65	0.73	0.82	0.67	2.38	8.84	13.62
2001	0.45	0.59	1.51	0.06	0.66	0.47	3.74	1.78	1.47	0.00	1.45	0.61	0.66	5.97	9.71

Appendix 2.1.4.E. Study period precipitation assessment - Upper Laramie River subbasin

Weather station: Laramie FAA Airport
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972	0.08	0.27	0.09	0.26	0.24	0.30	1.24	1.57	1.11	1.96	0.82	1.53	0.37	7.36	8.60
1973	2.28	1.00	1.41	0.57	0.09	1.88	7.23	2.33	1.06	1.49	2.50	0.71	2.04	10.13	17.36
1974	0.09	1.71	1.34	1.01	0.20	0.64	4.99	1.47	0.17	1.09	1.34	1.08	0.65	5.80	10.79
1975	1.25	0.20	0.12	0.25	0.19	0.85	2.86	0.52	2.24	0.84	2.47	0.60	0.46	7.13	9.99
1976	0.90	0.48	0.87	0.13	0.53	0.38	3.29	0.79	0.82	0.79	1.73	1.15	0.09	5.37	8.66
1977	0.17	0.14	0.14	0.16	0.25	1.98	2.84	0.93	0.85	0.59	4.00	1.31	0.56	8.24	11.08
1978	0.17	0.27	0.07	0.34	0.49	0.84	2.18	0.42	2.54	0.48	0.46	0.62	0.29	4.81	6.99
1979	0.78	0.36	0.85	0.51	0.86	1.27	4.63	0.31	0.64	0.58	0.51	2.25	0.49	4.78	9.41
1980	0.68	0.75	0.16	0.89	0.44	1.17	4.09	0.45	1.69	0.31	1.31	0.66	0.72	5.14	9.23
1981	1.43	0.65	0.04	0.32	0.09	0.79	3.32	0.84	3.32	0.60	1.85	1.39	0.28	8.28	11.60
1982	1.04	0.16	0.48	0.21	0.12	0.35	2.36	0.54	2.12	0.80	0.84	1.04	1.65	6.99	9.35
1983	0.35	0.91	1.87	0.17	0.08	2.43	5.81	3.71	1.26	1.99	0.94	1.22	0.44	9.56	15.37
1984	0.56	2.62	0.38	0.09	0.52	0.96	5.13	1.47	0.35	0.80	3.55	2.01	0.95	9.13	14.26
1985	0.80	0.13	0.24	0.38	0.21	0.30	2.06	1.35	1.06	0.98	3.76	0.38	0.88	8.41	10.47
1986	1.34	0.83	0.11	0.03	0.29	0.32	2.92	1.55	0.84	2.71	1.06	1.15	0.43	7.74	10.66
1987	1.46	0.74	0.22	0.26	0.41	0.33	3.42	1.37	3.27	0.79	1.17	1.25	0.05	7.90	11.32
1988	0.55	1.69	0.86	0.56	0.43	1.25	5.34	0.59	1.95	2.18	0.30	0.40	1.30	6.72	12.06
1989	0.09	0.53	0.35	0.32	1.41	0.37	3.07	0.27	1.12	0.43	0.35	1.38	1.90	5.45	8.52
1990	0.33	0.23	0.38	0.33	0.80	1.98	4.05	1.08	0.74	0.25	3.37	2.05	1.89	9.38	13.43
1991	1.28	0.88	0.46	0.57	0.29	0.37	3.85	1.07	2.48	4.75	2.68	2.21	0.97	14.16	18.01
1992	0.23	0.91	0.07	1.05	0.39	0.80	3.45	0.71	3.24	2.04	1.46	1.19	0.15	8.79	12.24
1993	0.30	1.20	1.08	0.40	1.58	0.76	5.32	0.77	1.59	2.50	0.77	1.72	2.16	9.51	14.83
1994	1.46	1.02	0.14	0.31	0.91	0.37	4.21	0.97	0.50	0.53	0.63	0.85	0.12	3.60	7.81
1995	0.61	0.35	0.27	0.13	0.35	0.22	1.93	0.91	3.62	2.42	1.03	0.74	2.36	11.08	13.01
1996	0.86	0.24	0.09	0.39	0.18	0.33	2.09	0.85	1.38	0.75	0.66	0.98	1.47	6.09	8.18
1997	0.61	0.31	0.14	0.66	0.36	0.32	2.40	0.99	2.05	1.72	0.17	1.96	2.15	9.04	11.44
1998	0.32	0.18	0.47	0.04	0.36	0.57	1.94	0.55	0.72	3.49	4.43	1.03	0.52	10.74	12.68
1999	2.69	0.30	0.58	0.47	0.02	0.28	4.34	1.21	1.51	1.02	0.81	0.90	1.33	6.78	11.12
2000	0.18	0.15	0.21	0.18	0.21	0.35	1.28	1.38	3.85	0.76	1.00	1.08	1.82	9.89	11.17
2001	1.24	0.07	0.15	0.07	0.08	0.25	1.86	1.11	0.92	0.07	0.95	1.04	0.64	4.73	6.59

Appendix 2.1.4.E. Study period precipitation assessment - Upper Laramie River subbasin

Average precipitation - both weather stations - Upper Laramie subbasin

Year							Average Oct-Mar							Average Apr-Sep	Average annual
1972	0.08	0.27	0.09	0.26	0.24	0.30	1.24	1.57	1.11	1.96	0.82	1.53	0.37	7.36	8.60
1973	2.28	1.00	1.41	0.57	0.09	1.88	7.23	2.33	1.06	1.49	2.50	0.71	2.04	10.13	17.36
1974	0.09	1.71	1.34	1.01	0.20	0.64	4.99	1.47	0.17	1.09	1.34	1.08	0.65	5.80	10.79
1975	1.25	0.20	0.12	0.25	0.19	0.85	2.86	0.52	2.24	0.84	2.47	0.60	0.46	7.13	9.99
1976	0.90	0.48	0.87	0.13	0.53	0.38	3.29	0.79	0.82	0.79	1.73	1.15	0.09	5.37	8.66
1977	0.17	0.14	0.14	0.16	0.25	1.98	2.84	0.90	1.52	0.34	3.87	1.46	0.53	8.61	10.03
1978	0.55	0.95	1.12	0.78	0.69	0.89	4.96	0.71	2.24	0.96	0.44	0.55	0.50	5.39	10.35
1979	0.84	0.72	1.90	1.06	0.80	1.07	6.38	0.53	1.24	0.77	0.36	2.55	0.39	5.82	12.20
1980	0.73	0.81	0.36	1.80	0.62	1.00	5.32	0.84	1.70	0.38	1.07	0.79	1.00	5.77	11.08
1981	1.31	0.54	0.15	0.25	0.24	0.79	3.27	0.86	3.48	0.81	1.58	1.60	1.01	9.33	12.59
1982	1.45	0.28	1.36	0.75	0.15	0.69	4.66	0.53	1.96	1.12	1.42	0.95	2.03	8.00	12.65
1983	0.31	0.72	1.16	0.30	0.17	2.05	4.70	3.02	1.11	1.96	1.93	1.89	0.27	10.16	14.85
1984	0.70	2.47	0.97	0.14	0.37	0.96	5.60	1.51	0.41	0.98	4.47	1.71	1.48	10.55	16.15
1985	0.62	0.27	0.54	0.47	0.23	0.72	2.83	1.55	0.99	1.05	2.68	0.50	1.27	8.03	10.86
1986	1.36	1.75	0.44	0.13	1.48	0.33	5.49	1.27	1.18	2.87	1.03	1.12	0.69	8.14	13.63
1987	1.55	1.41	0.21	0.43	0.42	0.43	4.44	0.87	2.81	1.23	1.97	1.37	0.10	8.33	12.77
1988	0.71	1.14	1.04	0.82	0.71	1.59	6.00	0.63	1.64	1.30	0.54	0.43	1.05	5.57	11.56
1989	0.13	0.82	0.44	0.53	1.70	0.62	4.24	0.86	1.01	0.57	0.97	1.39	1.73	6.52	10.76
1990	0.40	0.62	0.48	0.72	0.89	1.85	4.96	1.50	0.69	0.54	3.43	1.41	2.17	9.73	14.68
1991	1.33	0.83	0.79	0.58	0.31	0.73	4.57	1.13	2.38	3.59	2.80	1.94	0.70	12.54	17.11
1992	0.24	1.65	0.18	0.77	0.34	1.02	4.17	0.71	3.24	2.04	1.46	1.19	0.15	8.79	12.24
1993	0.46	0.94	0.98	0.47	1.28	0.76	4.88	1.04	1.34	2.70	0.57	1.32	1.67	8.63	13.50
1994	1.41	1.25	0.07	0.91	2.23	0.54	6.39	1.06	0.50	0.56	0.44	0.73	0.19	3.47	9.86
1995	0.50	0.45	0.30	0.25	0.65	0.66	2.81	1.39	4.73	2.23	0.88	0.59	2.18	11.99	14.80
1996	0.76	0.93	0.52	1.59	0.53	0.61	4.93	1.12	1.59	0.72	1.00	1.15	1.22	6.79	11.71
1997	0.59	0.83	1.37	0.99	0.36	0.32	4.11	1.74	1.48	1.45	1.05	2.34	2.56	10.61	14.71
1998	0.90	0.46	0.47	0.04	0.36	1.79	1.94	0.55	0.72	3.49	3.00	1.03	0.62	10.74	12.68
1999	2.69	0.30	0.58	1.78	0.29	0.44	4.29	2.60	1.79	1.17	1.00	1.02	1.18	8.75	13.04
2000	0.22	0.48	0.42	0.90	0.44	0.59	3.03	1.49	3.25	0.75	0.91	0.88	2.10	9.37	12.40
2001	0.85	0.33	0.83	0.07	0.37	0.36	2.80	1.45	1.20	0.04	1.20	0.83	0.65	5.35	8.15

Notes:

0.25 Indicates cell for which precipitation data was not available; values shown are average of previous five annual values; if five previous values are not available, values shown are averages of subsequent three, four, or five annual values as available

No subtotal or total precipitation was calculated for years during which data for three or more months of the semi-annual period were not available

Appendix 2.1.4.E. Study period precipitation assessment - Lower Laramie River subbasin

Subbasin: Lower Laramie River
Weather station: Wheatland 4N
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972	0.74	0.11	0.01	0.55	0.00	0.46	1.87	1.62	1.75	0.67	1.16	1.87	0.98	8.05	9.92
1973	0.42	0.14	0.15	0.02	0.13	1.55	2.41	1.81	0.44	0.42	2.94	0.22	4.12	9.95	12.36
1974	0.05	0.90	0.40	0.40	0.04	0.06	1.85	0.88	1.10	1.77	1.36	0.52	0.94	6.57	8.42
1975	0.51	0.12	0.02	0.29	0.34	0.26	1.54	0.46	2.04	1.40	1.92	1.23	0.60	7.65	9.19
1976	0.90	0.00	0.45	0.09	0.32	0.29	2.05	2.19	2.62	0.36	1.62	0.44	0.56	7.79	9.84
1977	0.33	0.03	0.06	0.08	0.00	0.33	0.83	2.32	0.95	4.00	3.17	0.99	0.00	11.43	12.26
1978	0.22	0.17	0.14	0.67	0.64	0.13	1.97	0.84	3.86	0.73	0.78	2.67	0.82	9.70	11.67
1979	0.80	0.55	0.35	0.35	0.08	0.31	2.44	0.58	1.34	2.59	0.49	2.09	0.03	7.12	9.56
1980	0.95	1.47	0.35	1.15	0.58	1.71	6.21	0.78	2.62	0.04	0.55	1.24	0.30	5.53	11.74
1981	1.24	0.39	0.10	0.04	0.07	1.02	2.86	0.96	4.09	0.63	3.29	1.32	0.35	10.64	13.50
1982	0.91	0.19	0.21	0.17	0.10	0.20	1.78	0.89	3.45	1.65	2.21	2.16	4.61	14.97	16.75
1983	0.71	0.67	0.39	0.06	0.02	2.05	3.90	1.44	2.30	3.44	1.30	1.66	0.25	10.39	14.29
1984	0.88	2.07	0.20	0.13	0.28	0.74	4.30	2.99	0.69	0.42	5.92	1.16	1.23	12.41	16.71
1985	0.85	0.00	0.45	0.28	0.17	0.26	2.01	1.14	1.16	1.26	2.34	0.74	2.39	9.03	11.04
1986	1.09	0.72	0.44	0.08	0.33	0.22	2.88	1.49	1.74	5.60	0.80	0.29	1.31	11.23	14.11
1987	1.32	0.77	0.02	0.12	0.48	0.82	3.53	0.53	1.89	1.68	0.68	1.19	0.75	6.72	10.25
1988	0.11	0.35	0.90	0.13	0.16	0.57	2.22	0.70	1.55	0.68	2.68	1.03	0.29	6.93	9.15
1989	0.06	0.20	0.22	0.00	0.72	0.25	1.45	2.56	1.99	1.30	0.11	0.89	2.24	9.09	10.54
1990	0.42	0.19	0.25	0.10	0.54	1.94	3.44	1.36	1.79	0.83	3.43	1.72	1.20	10.33	13.77
1991	0.80	1.27	0.04	0.11	0.08	0.30	2.60	1.43	6.01	5.27	1.26	1.99	0.55	16.51	19.11
1992	0.65	0.56	0.00	0.00	0.25	1.86	3.32	0.15	1.87	1.42	2.84	1.03	0.20	7.51	10.83
1993	0.40	0.39	0.37	0.28	1.05	0.39	2.88	2.29	0.95	4.60	0.75	1.21	1.60	11.40	14.28
1994	1.34	0.89	0.25	0.37	0.29	0.10	3.24	0.91	1.59	3.05	2.01	0.31	0.47	8.34	11.58
1995	2.25	0.57	0.69	0.05	0.37	0.11	4.04	0.91	6.93	4.72	1.00	0.08	2.50	16.14	20.18
1996	2.25	0.46	0.65	0.60	0.06	0.12	4.14	1.17	3.37	1.01	0.85	0.45	0.60	7.45	11.59
1997	0.87	0.51	0.20	0.42	0.07	0.21	2.28	1.15	2.90	1.91	2.02	2.41	1.51	11.90	14.18
1998	1.89	0.15	0.13	0.19	0.44	1.26	4.06	1.43	2.91	2.50	2.35	3.25	0.70	13.14	17.20
1999	2.77	0.84	0.42	0.24	0.02	0.26	4.55	2.93	2.17	3.44	1.44	1.37	2.86	14.21	18.76
2000	0.28	0.11	0.09	0.10	1.21	0.29	2.08	1.97	2.64	0.60	0.69	1.34	1.62	8.86	10.94
2001	0.19	0.93	0.53	0.30	0.21	0.21	2.37	2.24	2.57	0.74	3.91	0.55	1.45	11.46	13.83

Notes:

0.25 Indicates cell for which precipitation data was not available; values shown are average of previous five annual values; if five previous values are not available, values shown are averages of subsequent three, four, or five annual values as available

No subtotal or total precipitation was calculated for years during which data for three or more months of the semi-annual period were not available

Appendix 2.1.4.E. Study period precipitation assessment - Horse Creek subbasin

Subbasin: Horse Creek
Weather station: LaGrange
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972	0.78	0.08	0.04	0.76	0.09	0.93	2.68	3.34	1.13	2.50	1.53	2.20	0.73	11.43	14.11
1973	0.68	0.61	0.35	0.88	0.19	3.23	5.94	1.73	1.14	0.54	4.08	0.18	4.60	12.27	18.21
1974	0.23	0.92	1.38	1.14	0.23	1.10	5.00	1.82	0.21	2.40	1.28	0.12	1.01	6.84	11.84
1975	0.34	0.34	0.06	0.31	0.41	0.82	2.28	1.36	2.67	0.63	1.29	0.54	0.50	6.99	9.27
1976	0.79	0.08	0.60	1.11	0.38	0.36	3.32	2.03	2.66	1.01	2.05	1.19	0.76	9.70	13.02
1977	0.29	0.54	0.09	0.81	0.12	2.14	3.99	3.05	2.52	1.45	2.56	0.85	0.11	10.54	14.53
1978	0.10	1.15	0.49	0.82	1.02	0.51	4.09	1.04	3.17	1.16	2.33	1.45	0.10	9.25	13.34
1979	0.35	0.96	1.69	0.72	0.00	3.60	7.32	0.91	2.04	3.94	1.45	3.40	0.33	12.07	19.39
1980	1.73	3.74	1.14	0.87	0.64	1.51	9.63	0.64	3.60	0.19	2.61	1.75	0.95	9.74	19.37
1981	0.50	0.78	0.80	0.44	0.35	0.76	3.63	1.32	4.68	2.31	2.92	1.21	0.64	13.08	16.71
1982	0.67	0.20	0.24	0.21	0.03	0.81	2.16	0.62	4.36	1.81	3.78	2.75	2.27	15.59	17.75
1983	1.83	1.14	1.57	0.03	0.20	5.62	10.39	1.96	4.86	4.13	2.26	1.11	0.24	14.56	24.95
1984	0.46	2.23	0.35	0.16	1.86	0.67	5.73	4.32	0.93	3.47	3.36	0.51	2.48	15.07	20.80
1985	1.04	0.15	0.47	0.43	0.21	0.34	2.64	1.27	2.99	4.09	1.38	0.50	2.82	13.05	15.69
1986	1.03	0.38	0.56	0.69	1.31	0.35	4.32	4.49	1.56	4.05	1.25	0.43	1.21	12.99	17.31
1987	3.91	0.84	0.83	0.04	1.58	1.58	8.78	1.80	2.94	1.87	1.41	2.17	0.23	10.42	19.20
1988	0.18	0.94	2.34	1.45	0.31	2.30	7.52	2.79	4.51	0.80	1.68	0.83	1.68	12.29	19.81
1989	0.00	0.81	0.44	0.00	1.30	0.32	2.87	1.01	3.27	1.65	1.84	3.74	2.03	13.54	16.41
1990	0.95	0.46	0.75	0.26	0.80	3.02	6.24	1.35	3.44	1.12	7.16	2.24	0.66	15.97	22.21
1991	0.65	1.45	0.65	0.24	0.13	0.70	3.82	0.99	4.48	4.36	0.55	0.80	1.72	12.90	16.72
1992	0.57	0.98	0.02	0.81	0.40	1.51	4.29	0.33	2.24	1.96	2.31	2.67	0.20	9.71	14.00
1993	0.83	1.18	0.95	0.30	0.81	1.10	5.17	1.91	2.07	4.25	2.06	1.10	2.02	13.41	18.58
1994	2.51	0.98	0.40	0.70	0.54	0.21	5.34	1.55	0.38	1.05	1.20	1.23	0.43	5.84	11.18
1995	2.38	0.42	1.25	0.09	0.85	0.24	5.23	1.85	4.54	3.70	0.46	0.26	2.88	13.69	18.92
1996	1.42	0.90	0.65	0.61	0.00	1.01	4.59	1.72	3.08	1.40	2.22	0.98	1.12	10.52	15.11
1997	1.19	0.64	0.20	0.43	0.34	0.37	3.17	2.16	2.96	4.13	2.27	5.52	1.31	18.35	21.52
1998	2.89	0.19	0.73	0.10	0.64	1.44	5.99	1.40	1.93	1.88	4.27	0.71	0.71	10.90	16.89
1999	3.11	0.73	0.92	0.19	0.10	0.58	5.63	3.07	1.95	2.21	1.26	1.67	1.79	11.95	17.58
2000	0.20	0.17	0.56	0.82	0.64	1.75	4.14	1.55	1.47	1.29	0.57	0.50	2.54	7.92	12.06
2001	0.79	0.81	0.60	0.46	0.61	0.51	3.78	3.47	2.74	1.02	1.60	0.61	2.95	12.39	16.17

Notes:

0.25 Indicates cell for which precipitation data was not available; values shown are average of previous five annual values; if five previous values are not available, values shown are averages of subsequent three, four, or five annual values as available

No subtotal or total precipitation was calculated for years during which data for three or more months of the semi-annual period were not available

Appendix 2.1.4.E. Study period precipitation assessment - South Platte subbasin

Subbasin: South Platte River
Weather station: Cheyenne WSFO AP
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972	1.16	0.05	0.07	0.36	0.02	0.79	2.45	0.80	2.76	1.71	1.35	1.83	1.01	9.46	11.91
1973	0.42	0.59	0.40	0.23	0.07	1.85	3.56	1.75	0.31	1.20	5.01	0.27	4.52	13.06	16.62
1974	0.06	1.25	1.06	0.48	0.03	1.24	4.12	0.50	0.11	2.81	1.41	1.29	0.50	6.62	10.74
1975	0.91	0.49	0.10	0.40	0.17	1.17	3.24	0.47	2.27	1.49	2.62	0.39	0.52	7.76	11.00
1976	0.49	0.20	0.52	0.32	0.71	0.32	2.56	1.79	2.07	0.68	2.39	1.40	0.77	9.10	11.66
1977	0.15	0.28	0.10	0.14	0.08	1.21	1.96	1.86	2.50	2.44	3.49	1.07	0.19	11.55	13.51
1978	0.08	0.35	0.24	0.58	0.78	0.35	2.38	0.52	3.98	0.63	0.98	1.38	0.12	7.61	9.99
1979	0.50	0.45	0.54	0.27	0.14	1.34	3.24	0.77	2.90	3.32	1.83	1.86	0.32	11.00	14.24
1980	0.46	2.48	1.50	2.71	0.73	1.36	9.24	0.93	2.39	0.07	2.00	1.55	0.97	7.91	17.15
1981	0.51	0.46	0.08	0.30	0.20	0.70	2.25	0.73	5.67	1.66	2.85	2.90	0.31	14.12	16.37
1982	0.85	0.09	0.45	0.41	0.19	0.17	2.16	0.53	3.56	4.52	2.71	1.81	2.87	16.00	18.16
1983	1.20	0.43	0.83	0.02	0.00	2.96	5.44	4.45	2.31	2.81	2.12	1.95	0.78	14.42	19.86
1984	0.49	2.34	0.46	0.54	0.84	1.28	5.95	3.71	0.78	2.43	2.57	2.84	0.65	12.98	18.93
1985	1.55	0.11	0.34	0.66	0.19	0.36	3.21	1.10	1.05	1.59	3.99	6.64	1.78	16.15	19.36
1986	0.94	0.84	0.80	0.13	0.50	0.54	3.75	2.26	1.03	2.42	1.04	1.55	2.47	10.77	14.52
1987	1.78	0.66	0.18	0.09	0.90	1.25	4.86	0.68	4.43	1.80	2.04	1.23	0.93	11.11	15.97
1988	0.33	0.76	0.85	0.52	0.65	1.34	4.45	1.84	3.09	2.03	1.79	1.79	1.66	12.20	16.65
1989	0.09	0.42	0.53	0.27	1.26	0.49	3.06	0.48	1.37	2.51	1.70	1.79	1.62	9.47	12.53
1990	0.41	0.14	0.69	0.35	0.69	3.65	5.93	1.66	3.37	1.03	3.64	1.98	0.80	12.48	18.41
1991	1.35	0.72	0.39	0.36	0.12	0.43	3.37	1.15	3.84	4.56	3.39	1.49	1.87	16.30	19.67
1992	0.44	0.87	0.13	1.18	0.11	1.75	4.48	0.34	1.86	2.11	1.87	1.90	0.01	8.09	12.57
1993	0.46	1.69	0.49	0.35	0.81	0.63	4.43	2.49	1.92	3.32	0.64	2.21	3.16	13.74	18.17
1994	1.85	1.23	0.30	0.66	0.88	0.55	5.47	1.45	2.05	1.44	2.13	1.49	0.38	8.94	14.41
1995	1.55	0.34	0.57	0.12	1.02	0.19	3.79	1.49	6.00	4.58	1.08	0.89	3.39	17.43	21.22
1996	0.78	0.37	0.18	0.50	0.07	1.50	3.40	1.51	2.24	1.79	3.10	1.79	2.34	12.77	16.17
1997	0.50	0.45	0.01	0.39	0.31	0.44	2.10	1.68	2.47	3.48	2.80	4.33	2.06	16.82	18.92
1998	1.09	0.20	0.59	0.07	0.29	0.69	2.93	1.09	2.35	1.63	1.21	0.96	0.49	7.73	10.66
1999	1.27	0.31	0.46	0.35	0.13	0.46	2.98	5.02	2.04	2.13	2.38	0.78	2.11	14.46	17.44
2000	0.27	0.25	0.19	0.35	0.59	1.48	3.13	0.58	1.38	0.46	2.64	1.87	2.64	9.57	12.70
2001	0.69	0.30	0.75	0.41	0.33	0.56	3.04	2.49	2.24	1.45	3.31	0.74	1.18	11.41	14.45

Appendix 2.1.4.E. Study period precipitation assessment - South Platte subbasin

Weather station: Pine Bluffs 5W and Pine Bluffs
Units: inches of precipitation

	Before growing season							During growing season							
Year	Oct	Nov	Dec	Jan	Feb	Mar	Total Oct-Mar	Apr	May	Jun	Jul	Aug	Sep	Total Apr-Sep	Annual total
1972	0.61	0.08	0.05	0.49	0.01	0.51	1.75	1.17	2.62	3.27	1.75	5.96	1.23	16.00	17.75
1973	0.33	1.52	0.78	0.49	0.09	2.88	6.09	1.70	0.71						
1974															
1975															
1976															
1977															
1978															
1979												2.87	0.29		
1980	0.57	1.29	0.50	1.14	0.57	1.53	5.60	0.86	2.99	0.61	2.44	1.40	0.72	9.02	14.62
1981	0.30	0.18	0.06	0.23	0.31	1.52	2.60	0.73	4.37	1.51	8.87	3.43	0.41	19.32	21.92
1982	0.50	0.08	0.11	0.34	0.09	0.43	1.55	0.80	1.95	4.70	2.63	3.39	2.10	15.57	17.12
1983	1.08	0.86	0.56	0.02	0.03	2.47	5.02	2.32	4.16	4.04	5.17	3.68	0.46	19.83	24.85
1984	0.33	1.00	0.30	0.37	0.47	1.11	3.58	2.98	0.92	3.04	3.02	1.25	1.08	12.29	15.87
1985	1.64	0.10	0.53	0.44	0.00	0.26	2.97	0.86	0.90	1.24	1.80	0.55	2.45	7.80	10.77
1986	0.69	0.94	0.94	0.40	0.42	0.34	3.73	3.09	1.17	2.98	1.25	0.80	0.93	10.22	13.95
1987	2.07	0.35	0.20	0.13	1.06	0.96	4.77	0.80	3.66	1.10	2.67	2.32	1.52	12.07	16.84
1988	0.49	0.84	0.68	0.28	0.35	0.93	3.57	1.92	2.90	1.15	1.35	0.55	1.74	9.61	13.18
1989	0.06	0.34	0.20	0.19	0.50	0.32	1.61	0.56	1.21	3.29	1.94	4.34	1.31	12.65	14.26
1990	0.47	0.20	0.22	0.37	0.12	2.33	3.71	0.80	2.12	1.12	3.68	1.30	1.82	10.84	14.55
1991	0.71	0.57	0.01	0.12	0.16	0.39	1.96	0.51	2.91	4.86	2.12	2.11	1.20	13.71	15.67
1992	0.26	0.54	0.01	0.24	0.16	1.21	2.42	0.10	1.07	2.42	4.40	2.13	0.82	10.94	13.36
1993	0.13	0.27	0.19	0.12	0.50	0.57	1.78	2.12	1.33	2.61	2.03	2.13	1.59	11.81	13.59
1994	2.08	0.65	0.23	0.19	0.23	0.18	3.56	0.45	0.55	0.80	2.34	0.79	0.21	5.14	8.70
1995	2.03	0.31	0.34	0.07	0.39	0.09	3.23	1.31	4.30	4.11	2.75	0.14	2.27	14.88	18.11
1996	0.39	0.53	0.23	0.23	0.01	1.11	2.50	0.59	4.22	1.81	1.13	2.26	2.99	13.00	15.50
1997	0.47	0.25	0.00	0.18	0.19	0.23	1.32	1.06	3.91	2.55	1.79	2.46	1.25	13.02	14.34
1998	1.17	0.11	0.20	0.02	0.60	0.65	2.75	1.42	3.07	1.57	4.10	1.51	1.26	12.93	15.68
1999	2.68	0.18	0.22	0.05	0.00	0.34	3.47	2.31	2.70	1.58	4.24	2.79	2.10	15.72	19.19
2000	0.31	0.17	0.08	0.17	0.28	0.56	1.57	0.44	0.91	0.34	2.70	1.24	1.58	7.21	8.78
2001	0.25	0.44	0.49	0.32	0.10	0.29	1.89	1.98	2.92	0.85	3.68	0.20	2.50	12.13	14.02

Appendix 2.1.4.E. Study period precipitation assessment - South Platte subbasin

Average precipitation - both weather stations - South Platte subbasin

Year							Average Oct-Mar							Average Apr-Sep	Average annual
1972	0.89	0.07	0.06	0.43	0.02	0.65	2.10	0.99	2.69	2.49	1.55	3.90	1.12	12.73	14.83
1973	0.38	1.06	0.59	0.36	0.08	2.37	4.83	1.73	0.51	1.20	5.01	0.27	4.52	13.06	16.62
1974	0.06	1.25	1.06	0.48	0.03	1.24	4.12	0.50	0.11	2.81	1.41	1.29	0.50	6.62	10.74
1975	0.91	0.49	0.10	0.40	0.17	1.17	3.24	0.47	2.27	1.49	2.62	0.39	0.52	7.76	11.00
1976	0.49	0.20	0.52	0.32	0.71	0.32	2.56	1.79	2.07	0.68	2.39	1.40	0.77	9.10	11.66
1977	0.15	0.28	0.10	0.14	0.08	1.21	1.96	1.86	2.50	2.44	3.49	1.07	0.19	11.55	13.51
1978	0.08	0.35	0.24	0.58	0.78	0.35	2.38	0.52	3.98	0.63	0.98	1.38	0.12	7.61	9.99
1979	0.50	0.45	0.54	0.27	0.14	1.34	3.24	0.77	2.90	3.32	1.83	2.37	0.31	11.00	14.24
1980	0.52	1.89	1.00	1.93	0.65	1.45	7.42	0.90	2.69	0.34	2.22	1.48	0.85	8.47	15.89
1981	0.41	0.32	0.07	0.27	0.26	1.11	2.43	0.73	5.02	1.59	5.86	3.17	0.36	16.72	19.15
1982	0.68	0.09	0.28	0.38	0.14	0.30	1.86	0.67	2.76	4.61	2.67	2.60	2.49	15.79	17.64
1983	1.14	0.65	0.70	0.02	0.02	2.72	5.23	3.39	3.24	3.43	3.65	2.82	0.62	17.13	22.36
1984	0.41	1.67	0.38	0.46	0.66	1.20	4.77	3.35	0.85	2.74	2.80	2.05	0.87	12.64	17.40
1985	1.60	0.11	0.44	0.55	0.10	0.31	3.09	0.98	0.98	1.42	2.90	3.60	2.12	11.98	15.07
1986	0.82	0.89	0.87	0.27	0.46	0.44	3.74	2.68	1.10	2.70	1.15	1.18	1.70	10.50	14.24
1987	1.93	0.51	0.19	0.11	0.98	1.11	4.82	0.74	4.05	1.45	2.36	1.78	1.23	11.59	16.41
1988	0.41	0.80	0.77	0.40	0.50	1.14	4.01	1.88	3.00	1.59	1.57	1.17	1.70	10.91	14.92
1989	0.08	0.38	0.37	0.23	0.88	0.41	2.34	0.52	1.29	2.90	1.82	3.07	1.47	11.06	13.40
1990	0.44	0.17	0.46	0.36	0.41	2.99	4.82	1.23	2.75	1.08	3.66	1.64	1.31	11.66	16.48
1991	1.03	0.65	0.20	0.24	0.14	0.41	2.67	0.83	3.38	4.71	2.76	1.80	1.54	15.01	17.67
1992	0.35	0.71	0.07	0.71	0.14	1.48	3.45	0.22	1.47	2.27	3.14	2.02	0.42	9.52	12.97
1993	0.30	0.98	0.34	0.24	0.66	0.60	3.11	2.31	1.63	2.97	1.34	2.17	2.38	12.78	15.88
1994	1.97	0.94	0.27	0.43	0.56	0.37	4.52	0.95	1.30	1.12	2.24	1.14	0.30	7.04	11.56
1995	1.79	0.33	0.46	0.10	0.71	0.14	3.51	1.40	5.15	4.35	1.92	0.52	2.83	16.16	19.67
1996	0.59	0.45	0.21	0.37	0.04	1.31	2.95	1.05	3.23	1.80	2.12	2.03	2.67	12.89	15.84
1997	0.49	0.35	0.01	0.29	0.25	0.34	1.71	1.37	3.19	3.02	2.30	3.40	1.66	14.92	16.63
1998	1.13	0.16	0.40	0.05	0.45	0.67	2.84	1.26	2.71	1.60	2.66	1.24	0.88	10.33	13.17
1999	1.98	0.25	0.34	0.20	0.07	0.40	3.23	3.67	2.37	1.86	3.31	1.79	2.11	15.09	18.32
2000	0.29	0.21	0.14	0.26	0.44	1.02	2.35	0.51	1.15	0.40	2.67	1.56	2.11	8.39	10.74
2001	0.47	0.37	0.62	0.37	0.22	0.43	2.47	2.24	2.58	1.15	3.50	0.47	1.84	11.77	14.24

Notes:

	Indicates cell for which precipitation data was not available; values shown are average of previous five annual values; if five previous values are not available, values shown are averages of subsequent three, four, or five annual values as available
0.25	

No subtotal or total precipitation was calculated for years during which data for three or more months of the semi-annual period were not available