
MEMORANDUM

Subject: **Bear River Basin Plan**
 Key Structures and Diversions
 MYERS IRRIGATION DIVERSION

Date: August 7, 2000

Diversion Description: The headgate structure consists of a concrete headwall with a 36-inch CMP squash pipe inlet and a steel slide gate. The structure is located immediately off the riverbank.



Myers Irrigation diversion headwall

Diversion Location: Diversion is on the Upper Bear in Wyoming as shown on the location map hereafter.

Latitude N 41° 08' 57.0"
Longitude W 110° 52' 47.0"

Conveyance Description: Open Channel Canal.

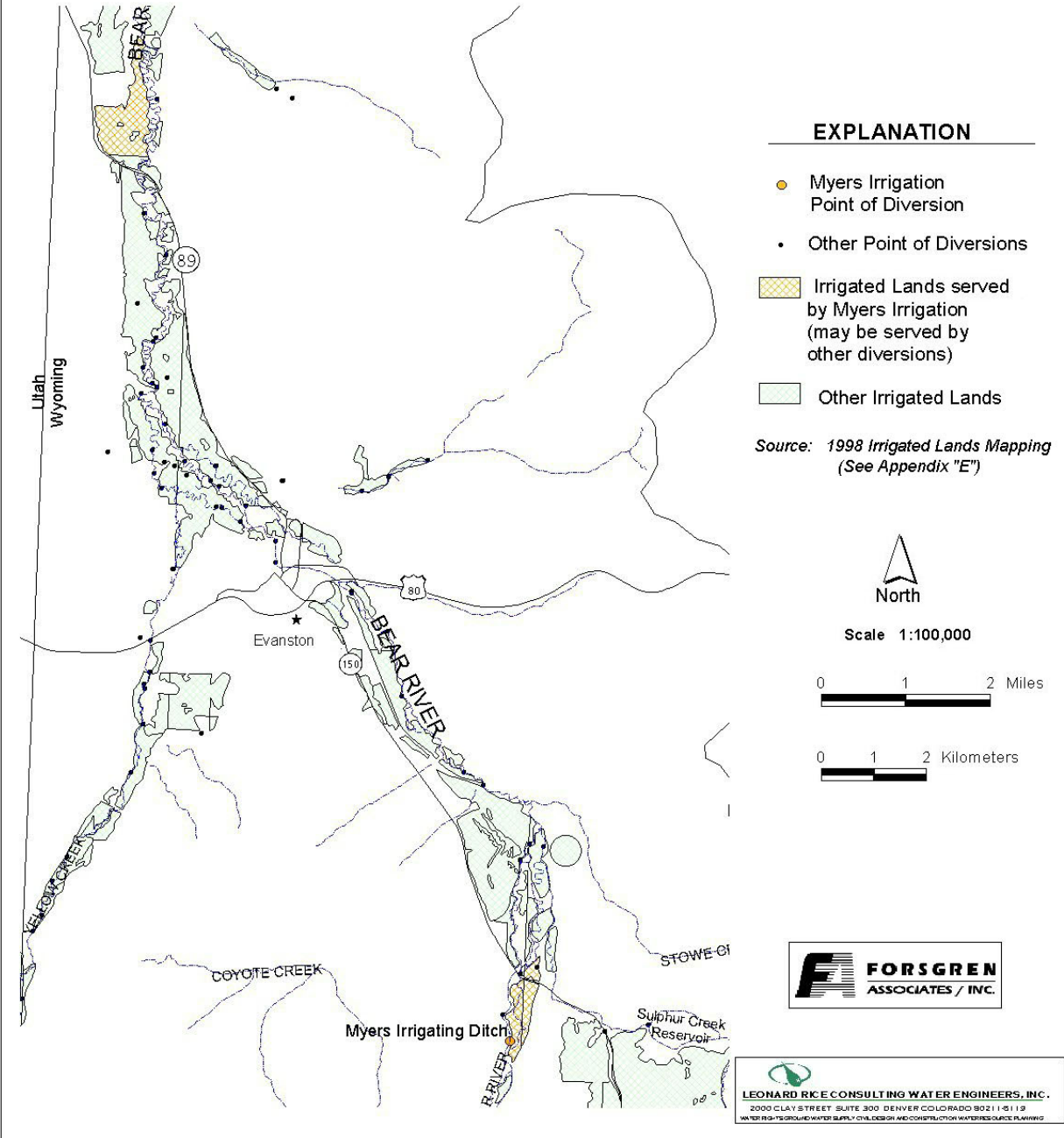
Direct Flow Water Rights:²

| Priority Date | Permit Number | Permitted Use | Acres | Flow (CFS) | Cumulative (CFS) | Comments |
|---------------|---------------|---------------|-------|------------|------------------|----------|
| 05-01-1862 | TERR | Irrigation | 280 | 4.00 | 4.00 | |

Associated Storage Rights: None

Irrigation Practices: Land is all flood irrigated..³

Myers Irrigation Point of Diversion Bear River Basin, Wyoming



Estimated Diversion Efficiency: Canal losses are relatively high due to porous nature of soils in the higher reaches of the Upper Bear.

Calculated Diversion Efficiency = Conveyance Efficiency X Application Efficiency:

| | |
|--------------------------------------|------------|
| Conveyance Efficiency: | 55% |
| Application Efficiency: | <u>55%</u> |
| Overall Diversion Efficiency: | 30% |

Conveyance efficiency is estimated based on total length of main canal. Application efficiency for food irrigation and sprinkler irrigation is estimated at 55% and 85% respectively.

Crop Types / Consumptive Use: Water is used entirely to irrigate mixed meadow grasses, primarily Meadow Foxtail, Redtop, etc.³

Return Flows: Return flow is primarily intercepted by the Anel Canal.

The following return flow pattern was adopted for modeling in this study are as follows:

| <u>Month</u> <u>(after initial Diversion)</u> | <u>Percent of Return</u> |
|--|--------------------------|
| 0 | 70% |
| 1 | 20% |
| 2 | 10% |
| 3 | <u>0%</u> |
| | 100% |

Other Operational Information: The Myers Irrigation ditch has the oldest water right in Wyoming. As a result, it is heavily used without regulation.³

References:

- 1) *USDA -Soil Conservation Service Economic Research Service-Forest Service in Cooperation with the States of Idaho, Utah, Wyoming, Irrigation Conveyance Systems, Working Paper for the Bear River Basin Type IV Study, Idaho-Utah-Wyoming, April 1976*
- 2) *Water rights summary obtained from State Engineer Interstate Reglist – revised April 14, 1999*
- 3) *Irrigation practices based on field investigation and interview with Mr. Don Shoemaker, Water Hydrographer-Commissioner – November 12,1999.*
- 4) *State of Utah Natural Resources, Water Budget Studies – Utah, Bear River Study Area, September 1994*

**BEAR RIVER WYOMING DIVERSIONS
MONTHLY DIVERSION RECORDS**

MEYERS IRRIGATION

| YEAR | MAY | | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | | |
|-------|------------------------------|-------------|---------------------|------------------------------|-------------|---------------------|------------------------------|-------------|---------------------|------------------------------|-------------|---------------------|------------------------------|-------------|---------------------|
| | Total of Daily Ave for Month | Average CFS | Monthly Total Ac-Ft | Total of Daily Ave for Month | Average CFS | Monthly Total Ac-Ft | Total of Daily Ave for Month | Average CFS | Monthly Total Ac-Ft | Total of Daily Ave for Month | Average CFS | Monthly Total Ac-Ft | Total of Daily Ave for Month | Average CFS | Monthly Total Ac-Ft |
| *1970 | | | | | | | | | | | | | | | |
| 1971 | 12 | 0.4 | 23.8 | 193 | 6.4 | 382.8 | 230 | 7.4 | 456.2 | 102 | 3.3 | 202.3 | 39 | 1.3 | 77.4 |
| 1972 | 15 | 0.5 | 29.8 | 83 | 2.8 | 164.6 | 133 | 4.3 | 263.8 | 234 | 7.5 | 464.1 | 144 | 4.8 | 285.6 |
| 1973 | 0 | 0.0 | 0.0 | 198 | 6.6 | 392.7 | 106 | 3.4 | 210.2 | 94 | 3.0 | 186.4 | 0 | 0.0 | 0.0 |
| 1974 | 0 | 0.0 | 0.0 | 254 | 8.5 | 503.8 | 164 | 5.3 | 325.3 | 118 | 3.8 | 234.0 | 24 | 0.8 | 47.6 |
| 1975 | 0 | 0.0 | 0.0 | 62 | 2.1 | 123.0 | 254 | 8.2 | 503.8 | 0 | 0.0 | 0.0 | 90 | 3.0 | 178.5 |
| 1976 | 43 | 1.4 | 85.3 | 233 | 7.8 | 462.1 | 134 | 4.3 | 265.8 | 69 | 2.2 | 136.9 | 118 | 3.9 | 234.0 |
| 1977 | 92 | 3.0 | 182.5 | 64 | 2.1 | 126.9 | 137 | 4.4 | 271.7 | 84 | 2.7 | 166.6 | 72 | 2.4 | 142.8 |
| 1978 | 5 | 0.2 | 9.9 | 130 | 4.3 | 257.9 | 158 | 5.1 | 313.4 | 165 | 5.3 | 327.3 | 28 | 0.9 | 55.5 |
| 1979 | 120 | 3.9 | 238.0 | 179 | 6.0 | 355.0 | 149 | 4.8 | 295.5 | 75 | 2.4 | 148.8 | 0 | 0.0 | 0.0 |
| 1980 | 0 | 0.0 | 0.0 | 222 | 7.4 | 440.3 | 135 | 4.4 | 267.8 | 51 | 1.6 | 101.2 | 0 | 0.0 | 0.0 |
| 1981 | 192 | 6.2 | 380.8 | 90 | 3.0 | 178.5 | 146 | 4.7 | 289.6 | 117 | 3.8 | 232.1 | 42 | 1.4 | 83.3 |
| 1982 | 26 | 0.8 | 51.6 | 169 | 5.6 | 335.2 | 88 | 2.8 | 174.5 | 107 | 3.5 | 212.2 | 44 | 1.5 | 87.3 |
| 1983 | 0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 | 102 | 3.3 | 202.3 | 82 | 2.6 | 162.6 | 0 | 0.0 | 0.0 |
| 1984 | 0 | 0.0 | 0.0 | 87 | 2.9 | 172.6 | 265 | 8.5 | 525.6 | 187 | 6.0 | 370.9 | 0 | 0.0 | 0.0 |
| 1985 | 36 | 1.2 | 71.4 | 162 | 5.4 | 321.3 | 146 | 4.7 | 289.6 | 113 | 3.6 | 224.1 | 89 | 3.0 | 176.5 |
| 1986 | 0 | 0.0 | 0.0 | 129 | 4.3 | 255.9 | 115 | 3.7 | 228.1 | 72 | 2.3 | 142.8 | 42 | 1.4 | 83.3 |
| 1987 | 149 | 4.8 | 295.5 | 130 | 4.3 | 257.9 | 137 | 4.4 | 271.7 | 146 | 4.7 | 289.6 | 79 | 2.6 | 156.7 |
| 1988 | 211 | 6.8 | 418.5 | 152 | 5.1 | 301.5 | 132 | 4.3 | 261.8 | 137 | 4.4 | 271.7 | 41 | 1.4 | 81.3 |
| 1989 | 22 | 0.7 | 43.6 | 146 | 4.9 | 289.6 | 157 | 5.1 | 311.4 | 102 | 3.3 | 202.3 | 19 | 0.6 | 37.7 |
| 1990 | 101 | 3.3 | 200.3 | 136 | 4.5 | 269.8 | 101 | 3.3 | 200.3 | 71 | 2.3 | 140.8 | 19 | 0.6 | 37.7 |
| 1991 | 0 | 0.0 | 0.0 | 97 | 3.2 | 192.4 | 175 | 5.6 | 347.1 | 115 | 3.7 | 228.1 | 2 | 0.1 | 4.0 |
| 1992 | 125 | 4.0 | 247.9 | 130 | 4.3 | 257.9 | 83 | 2.7 | 164.6 | 0 | 0.0 | 0.0 | 7 | 0.2 | 13.9 |
| 1993 | 128 | 4.1 | 253.9 | 259 | 8.6 | 513.7 | 132 | 4.3 | 261.8 | 99 | 3.2 | 196.4 | 31 | 1.0 | 61.5 |
| 1994 | 47 | 1.5 | 93.2 | 90 | 3.0 | 178.5 | 15 | 0.5 | 29.8 | 0 | 0.0 | 0.0 | 0 | 0.0 | 0.0 |
| 1995 | 0 | 0.0 | 0.0 | 112 | 3.7 | 222.1 | 90 | 2.9 | 178.5 | 104 | 3.4 | 206.3 | 23 | 0.8 | 45.6 |
| 1996 | 13 | 0.4 | 25.8 | 223 | 7.4 | 442.3 | 68 | 2.2 | 134.9 | 65 | 2.1 | 128.9 | 0 | 0.0 | 0.0 |
| 1997 | 56 | 1.8 | 111.1 | 320 | 10.7 | 634.7 | 146.8 | 4.7 | 291.2 | 42.4 | 1.4 | 84.1 | 43.1 | 1.4 | 85.5 |
| 1998 | 72.4 | 2.3 | 143.6 | 136.7 | 4.6 | 271.1 | 242.9 | 7.8 | 481.8 | 132 | 4.3 | 261.8 | 62.9 | 2.1 | 124.8 |
| 1999 | 31 | 1.0 | 61.5 | 211 | 7.0 | 418.5 | 42 | 1.4 | 83.3 | 1 | 0.0 | 2.0 | 1 | 0.0 | 2.0 |

AVERAGES

1.7 102.3

5.1 300.8

4.4 272.5

3.0 183.6

1.2 72.5

Notes: *1. No published records are available for this diversion for 1970