

ROCK CREEK

**HALLIE DITCH DIVERSION
LAKE DESMET (M&M) DITCH DIVERSION
MOWRY BASIN DITCH DIVERSION
PRINCE ALBERT DITCH DIVERSION**

ROCK CREEK DRAINAGE INTRODUCTION

BACKGROUND

Rock Creek flows out of the east slope of the Bighorn Mountains, beginning on hydrographers' maps as the north and south forks of Rock Creek. Three other, smaller tributaries (Sayles, Johnson, and Sand creeks) join it before it terminates in Clear Creek, which in turn flows into the Powder River. The Powder River crosses the Montana state line north of Spotted Horse, Wyoming.

CHARACTERISTICS

Rock Creek travels steep slopes in its course, much of which are characterized by mountainous seams and the subsurface ducts. As a result, water commissioners estimate that losses (or "shrinkage") to releases from Willow Park and Cloud Peak reservoirs at 60 percent in a dry year to 40 percent in a wet year. (This reservoir water, used extensively in Rock Creek, is transferred to the North Fork of Rock Creek through the Rock Creek & Piney Ditch Co. Canal.)

USAGE

Rock Creek's diversions are entirely devoted to agricultural irrigation.

Regulation

Water commissioners estimate that regulation is imposed on Rock Creek drainage diversions with the following timing:

Wet Year	Average Year	Dry Year
mid-August	mid-July	mid-June

Even under regulation, Johnson Creek flows 1-2 cfs.

Agriculture

Growers in the Rock Creek drainage tend to devote approximately 60 percent of their lands to alfalfa, 40 percent to grass hay. They have the following irrigation practices:

Percentage of lands served by irrigation type:

Flood	Gated Pipe	Sprinklers
25	60	15

The typical irrigation season runs from April 15-May 1 (depending on whether the spring runoff is delayed by colder weather) to early/mid October (depending on when the first snows fall and the ground freezes). Approximately 10 percent of the irrigators using Rock Creek water (the biggest users) practice post-season irrigation, though they usually do not use their entire right to do so.

Double Appropriation

Irrigation water rights with priority dates of March 1, 1945 or earlier are entitled to an additional 1cfs per 70 acres under Wyoming's surplus water statutes. Whenever the supply in a stream exceeds to amount required to satisfy all existing appropriations established prior to March 1, 1985, the stream is said to be in an excess flow condition and water right holders with priorities between March 2, 1945 and March 1, 1985 may use an additional 1 cfs for each 70 acres irrigated.

In Rock Creek, this practice is limited primarily by the condition of ditches. Many of the ditches are not capable of carrying all of the water an irrigator could use.

% of appropriation	% of ditches in drainage capable of flow
200	20
150	60
100-150	90
0-100	90

Permitted Uses

Permits granted for water appropriation are granted for specific uses. The following pages contain tables of permits and their associated uses. The following table provides a key to those uses:

Code	Use
Chem	Chemical
Com	Commercial
Cul	Culinary
D	Domestic
Drl	Drilling
Eng	Steam Engines
Fire	Fire Protection
Fish	Fish Propagation
F.C.	Flood Control
I	Irrigation
Ind	Industrial
I.F.	Instream Flow
Mech	Mechanical
Mfg	Manufacturing
Mil	Milling

Code	Use
Min	Mining
Misc	Miscellaneous
Mun	Municipal
Oil	Oil Refining or Production
P.C.	Pollution Control
Power	Power Development
R.R.	Railroad
Rec	Recreational
Ref	Refining
Res. Supply	Supply Facility for a Reservoir
S	Stock
T	Transportation

WATER RIGHTS

Two water rights summary tables are provided for each diversion serving irrigation referenced here. The first, included in the body of the diversion synopsis, refers to the rights on record with the State Engineer's Office and is derived from that office's *Tabulation of Adjudicated Surface Water Rights of the State of Wyoming, Water Division Number Two* (Oct. 1999).

Because this rights summary is pulled directly from the SEO *Tab*, the rights cited follow the SEO's priority order:

Hierarchy	Format of right	Example
1	Day, Month, Year	05-15-1884
2	Month and Year	05-00-1884
3	Specified Season and Year	Spring 1884
4	Year Only	1884
5	Before Year	Before 1884

Board orders or court orders may also establish a specific priority.

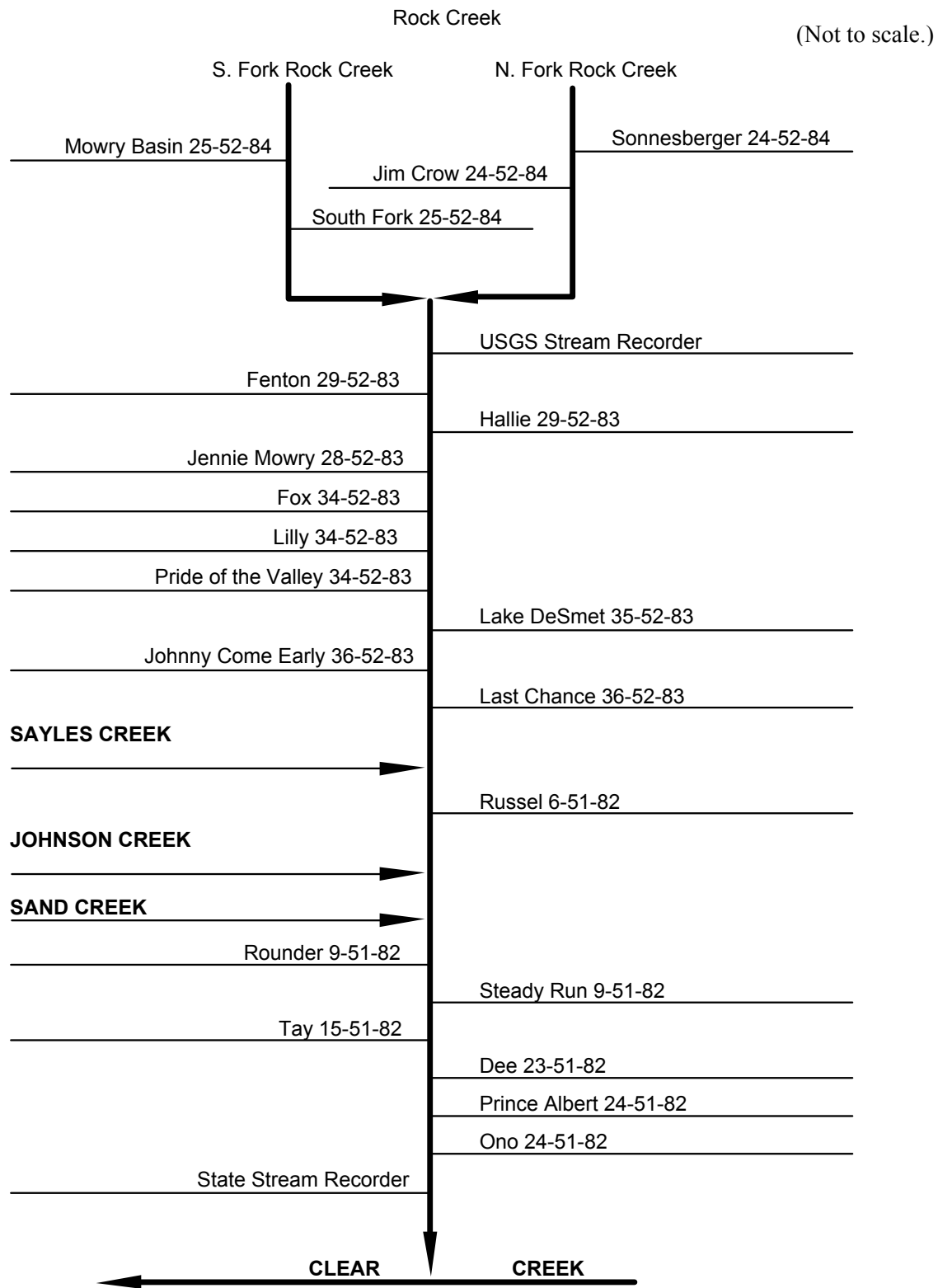
Irrigated Lands Water Rights Database

The second table, which follows the diversion synopsis, is taken from the irrigated lands water rights database developed for the basin plan. It can be used as a reference with the following caveats: It only lists water rights associated with the irrigated lands polygons mapped by HKM. The table does not include nonirrigation rights devoted to reservoir supply, municipal, fish propagation, etc. The rights on this table are associated only with those irrigated lands identified through the course of this study, both actively irrigated and currently idle.

Column Heading Key

PerNo	Permit Number	“Terr” denotes a territorial right.
PerSfx	Permit Suffix	D = direct flow E = enlargement R = reservoir
Facility Name		Parentheses denote the former means of conveyance for the water right.
Unit	Flow or volume	CFS = cubic feet per second AF = acre-feet GPM = gallons per minute
SupTyp	Supply Type	OS = original supply SS = supplement supply, for lands having an original supply from another source Sec = secondary supply, for water stored in a reservoir
Status	Status of adjudication	Adj = adjudicated Una = unadjudicated
Source	Source water	Parentheses denote the permit number of the related storage right.

Schematic of Rock Creek stream and diversions:



NOTE: HG locations by section-township-range

KEY DIVERSIONS

Diversion: HALLIE DITCH DIVERSION

Date: 18 Oct. 2000

Diversion Description: Headgate consists of a single, 4.5 x 4.8-foot steel gate in steel slides operated with a Waterman-type screw, mounted in a concrete headwall. The headgate is in good condition.



Hallie Ditch headgate

Diversion Location: The Hallie Ditch diversion is located on the main stem of Rock Creek, between the confluences of the South and North forks and the of Rock and Sayles creeks.

Headgate:

Lat. Long.
N 44° 27' 16.0" W 106° 52' 11.3"

Flume:

Lat. Long.
N 44° 27' 16.0" W 106° 52' 9.4"



Hallie Ditch flume

Conveyance Description: Open channel canal, approximately 6.1 mi. long.

Direct Flow Water Rights: The summary for direct flow rights follows:

Permit	Priority Date	Permitted Use	Acres	Flow (cfs)	Cumulative (cfs)
Terr.	04-10-1886	I	5.00	0.07	0.07
Terr.	04-10-1886	I	160.00	2.28	2.35
Terr.	04-10-1886	I	160.00	2.28	4.63
Terr.	04-10-1886	I	175.30	2.50	7.13
Terr.	04-10-1886	I	820.00	11.71	18.84
659E	05-04-1901	D,I,S	320.00	4.57	23.41
1116E	05-21-1903	I	159.00	2.27	25.68

Irrigators on the Hallie Ditch take advantage of the Double Appropriation Doctrine.

Associated Storage Rights: Irrigators on Hallie Ditch use stored water from Willow and Cloud Peak reservoirs.

Irrigation Practices: See introduction to Rock Creek drainage above.

Return Flows: Estimated percentage of total diversion developing into return flows:

Destination	Wet Yr.	Avg. Yr.	Dry Yr.
Shell Creek	5	2	0

Losses: 25 percent by the end of the ditch

References: Carmine LoGuidice, water commissioner, State Engineer's Office, interview, 18 Oct. 2000

Irrigated Lands Water Rights Database

PerNo	PerSfx	Facility Name	Priority	Acres	Amount	Unit	SupTyp	Status	Source
Terr	D	Hallie	April 10, 1886	1320.3	18.84	CFS	OS	Adj	Rock Creek
659	E	Enl. Hallie	May 4, 1901	320	4.57	CFS	OS	Adj	Rock Creek
2531	E	Enl. Kempton (Hallie)	Aug. 21, 1911	24	0.34	CFS	OS	Adj	Rock Creek

Name Hallie Ditch Diversion													
Source Rock Creek													
District 3													
Data Total monthly flow in AF													
Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1970													
1971							0.00	228.69	799.02	562.95	547.54	388.40	2526.60
1972							0.00	261.64	1104.34	642.94	615.55	635.90	3260.37
1973							0.00	258.39	1324.16	421.47	737.04	487.34	3228.40
1974							20.89	924.14	1143.71	611.48	407.03	237.26	3344.51
1975							0.00	0.00	0.00	422.24	436.76	448.54	1307.54
1976													
1977							0.00	604.40	1026.85	532.26	0.00	0.00	2163.51
1978							0.00	0.00	0.00	511.14	498.15	439.62	1448.91
1979													
1980							0.00	193.00	633.00	255.00	552.00	0.00	1633.00
1981							0.00	333.00	720.00	372.00	349.00	232.00	2006.00
1982							0.00	34.40	750.00	810.00	260.00	400.00	2254.40
1983							0.00	0.00	846.00	567.00	507.00	225.00	2145.00
1984							0.00	0.00	400.00	846.00	248.00	401.00	1895.00
1985							0.00	287.00	821.00	345.00	404.00	351.00	2208.00
1986							122.00	689.00	803.00	800.00	246.00	414.00	3074.00
1987							0.00	541.47	611.48	473.86	473.00	542.00	2641.81
1988							0.00	0.00	541.50	240.60	159.60	114.70	1056.40
1989							0.00	683.10	612.40	492.90	528.80	238.20	2555.40
1990							0.00	32.91	951.25	531.74	335.03	253.83	2104.76
1991							0.00	55.70	605.70	563.90	355.70	192.50	1773.50
1992							0.00	597.80	787.90	467.90	422.00	266.50	2542.10
1993							0.00	0.00	246.90	289.00	444.70	455.60	1436.20
1994							3.80	365.40	538.90	378.50	320.70	163.40	1770.70
1995							48.20	86.30	433.00	436.30	299.40	311.60	1614.80
1996							0.00	312.80	926.90	475.10	287.30	418.00	2420.10
1997							0.00	464.90	422.80	130.00	77.70	49.30	1144.70
1998							0.00	437.30	959.90	712.50	739.00	390.90	3239.60
1999							0.00	34.10	268.10	398.90	466.70	372.20	1540.00
Mean							7.22	275.02	676.96	492.25	396.95	312.18	2160.57
Max							122.00	924.14	1324.16	846.00	739.00	635.90	3344.51
Min							0.00	0.00	0.00	130.00	0.00	0.00	1056.40

- Notes:
1. Monthly data is from Hydrographers' Annual Reports for years 1980 and later, and from WRDS for years prior to 1980
 2. Zero flow is assumed prior to the first and after the last measurement
 3. Monthly data for May-July 1987 is derived from spot measurements in the Hydrographers' Annual Reports
 4. June & July 1974 data includes interpolated data using WRDS records.

Name	Hallie Ditch Diversion		
Source	Rock Creek		
District	3		
Data	First & Last Dates, Max. Days		
Water Year	First Date of Measurement	Last Date of Measurement	Maximum Days Missing
1970			
1971	24-May	30-Sep	0
1972	10-May	30-Sep	0
1973	22-May	30-Sep	0
1974	28-Apr	30-Sep	0
1975	7-Jul	30-Sep	0
1976			
1977	17-May	31-Jul	27
1978	11-Jul	30-Sep	0
1979			
1980	11-May	29-Aug	0
1981	1-May	30-Sep	0
1982	24-May	30-Sep	0
1983	1-Jun	30-Sep	0
1984	11-Jun	30-Sep	0
1985	23-May	30-Sep	0
1986	9-Apr	25-Sep	0
1987	14-May	30-Sep	44
1988	6-Jun	30-Sep	0
1989	10-May	30-Sep	0
1990	31-May	30-Sep	0
1991	29-May	30-Sep	0
1992	5-May	30-Sep	0
1993	14-Jun	30-Sep	0
1994	30-Apr	30-Sep	0
1995	19-Apr	30-Sep	0
1996	1-May	30-Sep	0
1997	16-May	30-Sep	0
1998	5-May	30-Sep	0
1999	26-May	30-Sep	0
Avg.	19-May	26-Sep	3
Earliest	9-Apr	31-Jul	0
Latest	11-Jul	30-Sep	44

Notes: 1. Data is from Hydrographers' Annual Reports for years 1980 and later, and from WRDS for years prior to 1980.

KEY DIVERSIONS

Diversion: LAKE DESMET (M&M) DITCH DIVERSION

Date: 18 Oct. 2000

Diversion Description: Headgate consists of two, 5.5 x 4.5-foot steel gates in steel slides operated with Waterman-type screws, mounted in a concrete headwall. The structure adjoins a rock dam. The diversion is in excellent condition.



Lake DeSmet Ditch headgate

Diversion Location: The Lake DeSmet Ditch diversion is located on the main stem of Rock Creek, between the confluence of the South and North forks and the confluence of Rock and Sayles creeks.



Lake DeSmet Ditch flume

Headgate:

Lat. Long.
N 44° 26' 6.8" W 106° 48' 55.2"

Flume:

Lat. Long.
N 44° 26' 5.3" W 106° 48' 49.2"

Conveyance Description: Open channel canal, approximately 9.2 mi. long, with approximately 400 feet in a siphon.

Direct Flow Water Rights: The summary for direct flow rights follows:

Permit	Priority Date	Permitted Use	Acres	Flow (cfs)	Cumulative (cfs)
Terr.	10-31-1884	I	25.00	0.36	0.36
Terr.	10-31-1884	I	70.00	1.00	1.36
Terr.	10-31-1884	I	100.00	1.43	2.79
Terr.	10-31-1884	I	300.00	4.28	7.07
Terr.	10-31-1884	I	520.00	7.43	14.50
Terr.	10-31-1884	I	523.00	7.47	21.97
Terr.	10-31-1884	I	3500.70	50.01	71.98
658E	04-22-1901	I	373.00	5.32	77.30
815E	04-19-1902	I	359.00	5.12	82.42
6800E	12-20-1979	Fish	0.00	10.00	92.42

Much of the water carried by this ditch is actually from South Piney Creek.

The maximum appropriation carried by the Lake DeSmet Ditch is approximately 58 percent (54 cfs). The condition of the ditch precludes larger flows.

Associated Storage Rights: Irrigators on Lake DeSmet Ditch use stored water from Willow and Cloud Peak reservoirs.

Irrigation Practices: See introduction to Rock Creek drainage above.

Return Flows: Estimated percentage of total diversion developing into return flows:

Destination	Wet Yr.	Avg. Yr.	Dry Yr.
Rock Creek	0	0	0

Losses: Approximately 5 percent by the end of the ditch

References: Carmine LoGuidice, water commissioner, State Engineer's Office, interview, 18 Oct. 2000

Irrigated Lands Water Rights Database

PerNo	PerSfx	Facility Name	Priority	Acres	Amount	Unit	SupTyp	Status	Source
Terr	D	Lake DeSmet	Oct. 31, 1884	5038.7	71.98	CFS	OS	Adj	Rock Creek
815	E	Enl. Lake DeSmet	April 19, 1902	359	5.12	CFS	OS	Adj	Rock Creek

Name Lake DeSmet (M&M) Ditch Diversion													
Source Rock Creek													
District 3													
Data Total monthly flow in AF													
Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1970													
1971							475.40	2287.73	2162.78	1372.36	1423.34	841.31	8562.92
1972							113.36	1385.51	2269.09	1630.61	1426.91	286.04	7111.52
1973							418.67	1583.48	2742.94	1591.73	1186.31	676.94	8200.07
1974							117.46	1975.81	2162.78	1619.70	1414.21	571.04	7861.00
1975							0.00	0.00	0.00	2280.73	1878.74	0.00	4159.47
1976													
1977							0.00	1496.03	1556.43	1357.43	957.04	180.04	5546.97
1978							238.31	661.65	1123.04	1257.62	1640.27	568.66	5489.55
1979													
1980							266.00	1680.00	1665.00	1230.00	1051.00	366.00	6258.00
1981							116.00	984.00	1662.00	1413.00	1032.00	505.00	5712.00
1982							190.00	700.00	1880.00	1510.00	1120.00	670.00	6070.00
1983							433.00	701.00	1760.00	1120.00	990.00	940.00	5944.00
1984							0.00	725.00	969.00	1033.00	1570.00	764.00	5061.00
1985							0.00	0.00	1451.00	1073.00	1308.00	348.00	4180.00
1986							0.00	1877.00	2001.00	1160.00	1078.00	1365.00	7481.00
1987							277.00	1992.00	1430.00	973.00	901.00	964.00	6537.00
1988							287.40	1353.70	1942.60	1401.30	633.50	120.00	5738.50
1989							160.60	424.40	1709.90	1398.10	691.90	397.30	4782.20
1990							286.60	1505.44	1692.62	1276.36	1313.49	530.39	6604.90
1991							237.90	965.70	1577.50	1020.90	954.80	406.60	5163.40
1992							210.60	1317.60	1001.40	744.00	620.30	746.70	4640.60
1993							53.50	1405.10	1209.40	526.80	601.40	393.20	4189.40
1994							80.10	1034.40	1368.30	819.40	432.80	27.70	3762.70
1995							0.00	102.70	1138.80	562.00	676.30	366.90	2846.70
1996							0.00	1188.90	1935.90	666.40	488.10	380.10	4659.40
1997							0.00	792.10	957.20	507.70	375.20	435.20	3067.40
1998							0.00	1225.60	2186.90	823.80	929.30	305.20	5470.80
1999							0.00	317.80	1333.00	614.70	982.20	466.00	3713.70
Mean							146.74	1099.36	1588.47	1147.54	1025.04	504.49	5511.64
Max							475.40	2287.73	2742.94	2280.73	1878.74	1365.00	8562.92
Min							0.00	0.00	0.00	507.70	375.20	0.00	2846.70

- Notes: 1. Monthly data is from Hydrographers' Annual Reports for years 1980 and later, and from WRDS for years prior to 1980
2. Zero flow is assumed prior to the first and after the last measurement

Water Year	First Date of Measurement	Last Date of Measurement	Maximum Days Missing
1970			
1971	4-Apr	30-Sep	0
1972	19-Apr	16-Sep	0
1973	10-Apr	30-Sep	0
1974	27-Apr	30-Sep	0
1975	1-Jul	31-Aug	0
1976			
1977	1-May	30-Sep	0
1978	18-Apr	30-Sep	0
1979			
1980	1-Apr	30-Sep	0
1981	1-Apr	30-Sep	0
1982	14-Apr	30-Sep	0
1983	1-Apr	30-Sep	0
1984	18-May	30-Sep	0
1985	6-Jun	30-Sep	0
1986	1-May	30-Sep	0
1987	10-Apr	30-Sep	0
1988	12-Apr	30-Sep	0
1989	11-Apr	30-Sep	0
1990	5-Apr	30-Sep	0
1991	2-Apr	30-Sep	0
1992	1-Apr	30-Sep	0
1993	16-Apr	30-Sep	0
1994	20-Apr	15-Sep	0
1995	19-May	30-Sep	0
1996	14-May	30-Sep	0
1997	13-May	30-Sep	0
1998	6-May	24-Sep	0
1999	7-May	30-Sep	0
Avg.	24-Apr	27-Sep	0
Earliest	1-Apr	31-Aug	0
Latest	1-Jul	30-Sep	0

Notes: 1. Data is from Hydrographers' Annual Reports for years 1980 and later, and from WRDS for years prior to 1980.

KEY DIVERSIONS

Diversion: MOWRY BASIN DITCH DIVERSION

Date: 18 Oct. 2000

Diversion Description: Headgate consists of a single, 3.5 x 1.2-foot steel gate in steel slides operated with a Waterman-type screw, mounted in a concrete headwall.



Mowry Basin headgate

Diversion Location: The Mowry Basin Ditch diversion is located on the South Fork of Rock Creek.

Headgate:

Lat. Long.
N 44° 26' 46.4" W 106° 54' 30.7"

Flume:

Lat. Long.
N 44° 26' 43.8" W 106° 54' 20.0"



Mowry Basin flume

Conveyance Description: Canal, approximately 2.4 mi. long, with approximately 450 ft. of length in pipe.

Direct Flow Water Rights: The summary for direct flow rights follows:

Permit	Priority Date	Permitted Use	Acres	Flow (cfs)	Cumulative (cfs)
Terr.	10-20-1884	I	10.00	0.14	0.14
Terr.	10-20-1884	I	70.00	1.00	1.14
Terr.	-1887	I	177.00	2.53	3.67
Terr.	-1887	I	60.00	0.86	4.53
Terr.	-1887	I	40.00	0.57	5.10
Terr.	-1887	I	35.00	0.50	5.60
2390E	07-25-1910	I	382.70	5.46	11.06
2460E	04-20-1911	I	111.60	1.59	12.65

Associated Storage Rights: Irrigators on Mowry Basin Ditch have arranged an exchange for water stored in Cloud Peak Reservoir.

Irrigation Practices: See Rock Creek summary above.

Return Flows:	Wet Yr.	Avg. Yr.	Dry Yr.
Rock Creek	10	5	2

Losses: Approximately 5 percent by the end of the ditch

References: Carmine LoGuidice, water commissioner, State Engineer's Office, interview, 18 Oct. 2000

Irrigated Lands Water Rights Database

PerNo	PerSfx	Facility Name	Priority	Acres	Amount	Unit	SupTyp	Status	Source
Terr	D	Mowry Basin (Fenton)	Oct. 20, 1884	80	1.14	CFS	OS	Adj	South Fork Rock Creek
Terr	D	Mowry Basin, 2nd App.	Dec. 31, 1887	312	4.46	CFS	OS	Adj	South Fork Rock Creek
Terr	D	Mowry Basin	Dec. 31, 1887	40	0.57	CFS	OS	Adj	South Fork Rock Creek
1900	E	Enl. Fenton (Mowry Basin)	June 1, 1908	120	1.71	CFS	OS	Adj	Rock Creek
2390	E	Enl. Mowry Basin	July 25, 1910	382.7	5.46	CFS	OS	Adj	South Fork Rock Creek
2460	E	Enl. Mowry Basin	April 20, 1911	111.6	1.59	CFS	OS	Adj	South Fork Rock Creek
4015	E	Enl. Mowry Basin	June 30, 1919	456	0		Sec	Adj	Mowry Basin (1355R)
303201	D	Love Enl. Mowry Basin	Nov. 9, 2000	0	0		OS	Una	South Fork Rock Creek

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1970													
1971													
1972													
1973													
1974													
1975													
1976													
1977													
1978													
1979													
1980													
1981								521.86	406.12	293.08	292.67	82.57	1596.30
1982								50.34	503.40	432.71	249.02	88.36	1323.83
1983								117.46	503.40	450.97	289.61	149.56	1511.00
1984								0.00	238.02	678.51	339.94	80.33	1336.80
1985													
1986								0.00	733.96	482.17	265.01	128.23	1609.37
1987								0.00	344.07	244.40	0.00	0.00	588.47
1988								0.00	48.10	221.53	175.85	73.75	519.23
1989													
1990								280.88	434.55	527.44	441.78	11.66	1696.31
1991								79.46	301.01	354.53	374.01	15.53	1124.54
1992								0.00	0.00	33.02	368.40	82.36	483.78
1993								317.42	85.51	198.81	354.18	33.80	989.72
1994								237.38	327.30	247.52	196.06	0.00	1008.26
1995								155.34	361.68	139.60	285.53	92.81	1034.96
1996								20.45	230.91	251.44	245.95	82.81	831.56
1997								128.08	214.91	149.95	155.29	0.00	648.23
1998								570.85	621.95	230.62	152.85	224.68	1800.95
1999								0.00	198.33	444.40	240.91	10.71	894.35
Mean								145.85	326.66	316.51	260.42	68.07	1117.51
Max								570.85	733.96	678.51	441.78	224.68	1800.95
Min								0.00	0.00	33.02	0.00	0.00	483.78

- Notes: 1. Monthly data is derived from spot measurements in the Hydrographers' Annual Reports for years 1980 and later, and from WRDS for years prior to 1980
2. Zero flow is assumed prior to the first and after the last measurement

Water Year	First Date of Measurement	Last Date of Measurement	Maximum Days Missing
1970			
1971			
1972			
1973			
1974			
1975			
1976			
1977			
1978			
1979			
1980			
1981	1-May	11-Sep	26
1982	29-May	11-Sep	6
1983	25-May	22-Sep	10
1984	21-Jun	12-Sep	8
1985			
1986	2-Jun	15-Sep	10
1987	12-Jun	16-Jul	4
1988	24-Jun	13-Sep	5
1989			
1990	15-May	4-Sep	16
1991	27-May	6-Sep	25
1992	27-Jul	9-Sep	7
1993	4-May	7-Sep	45
1994	16-May	30-Aug	40
1995	10-May	19-Sep	28
1996	20-May	17-Sep	32
1997	21-May	15-Aug	21
1998	17-May	22-Sep	36
1999	10-Jun	1-Sep	20
Avg.	29-May	6-Sep	20
Earliest	1-May	16-Jul	4
Latest	27-Jul	22-Sep	45

Notes: 1. Data is from Hydrographers' Annual Reports for years 1980 and later, and from WRDS for years prior to 1980.

KEY DIVERSIONS

Diversion: PRINCE ALBERT DITCH DIVERSION

Date: 18 Oct. 2000

Diversion Description: Headgate consists of a single 4 x 3.5-foot steel gate in steel slides operated with Waterman-type screws, mounted in a concrete headwall penetrated by 18 ft of three-foot-diameter corrugated metal pipe.

Diversion Location: The Prince Albert Ditch diversion is located on the main stem of Rock Creek, just upstream of the confluence Rock and Clear creeks.



Prince Albert Ditch headgate

Headgate:

Lat. Long.
N 44° 22' 16" W 106° 40' 25"

Flume:

Lat. Long.
N 44° 22' 13" W 106° 40' 20"

Conveyance Description: Open channel canal, approximately 2.5 mi. long.

Direct Flow Water Rights: The summary for direct flow rights follows:



Prince Albert Ditch flume

Permit	Priority Date	Permitted Use	Acres	Flow (cfs)	Cumulative (cfs)
Terr.	06-10-1883	I	8.00	0.11	0.11
Terr.	06-10-1883	I	520.00	7.43	7.54
Terr.	06-00-1885	I	180.00	2.57	10.11

The Prince Albert Ditch typically carries 200 percent of its allocation during the early season as per the Wyoming Double Appropriation Doctrine.

Associated Storage Rights: None

Irrigation Practices: See introduction to Rock Creek drainage above.

Return Flows: Estimated percentage of total diversion developing into return flows:

Destination	Wet Yr.	Avg. Yr.	Dry Yr.
Clear Creek	10	5	2

Losses: Approximately 15 percent by the end of the ditch

References: Carmine LoGuidice, water commissioner, State Engineer's Office, interview, 18 Oct. 2000

Irrigated Lands Water Rights Database

PerNo	PerSfx	Facility Name	Priority	Acres	Amount	Unit	SupTyp	Status	Source
Terr	D	Prince Albert	June 10, 1883	528	7.54	CFS	OS	Adj	Rock Creek

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1970													
1971													
1972													
1973													
1974								232.76	240.87	200.65	98.24	0.00	772.52
1975													
1976													
1977													
1978													
1979													
1980													
1981								523.05	338.85	330.58	11.23	0.00	1203.71
1982								202.25	417.33	375.94	462.94	115.36	1573.82
1983								94.61	567.67	468.43	307.27	0.00	1437.98
1984								0.00	0.00	480.29	333.89	0.00	814.18
1985													
1986								300.50	465.72	238.79	400.68	139.37	1545.06
1987								335.36	446.46	147.97	0.00	0.00	929.79
1988								0.00	88.99	248.50	0.00	0.00	337.49
1989													
1990								0.00	13.39	48.20	12.10	0.00	73.69
1991								0.00	14.99	308.07	284.27	107.52	714.85
1992								0.00	0.00	26.83	249.55	180.91	457.29
1993								220.09	185.66	169.40	190.80	121.37	887.32
1994								90.86	394.60	277.71	59.31	0.00	822.48
1995								79.23	191.32	430.23	190.08	94.81	985.67
1996								23.60	262.06	299.78	280.76	158.17	1024.37
1997								107.61	110.70	367.85	4.72	0.00	590.88
1998								97.75	49.87	364.40	252.29	127.57	891.88
1999								0.00	10.06	350.34	349.88	0.00	710.28
Mean								128.20	211.03	285.22	193.78	58.06	876.29
Max								523.05	567.67	480.29	462.94	180.91	1573.82
Min								0.00	0.00	26.83	0.00	0.00	73.69

- Notes: 1. Monthly data is derived from spot measurements in the Hydrographers' Annual Reports for years 1980 and later, and from WRDS for years prior to 1980
2. Zero flow is assumed prior to the first and after the last measurement

Name	Prince Albert Ditch Diversion		
Source	Rock Creek		
District	3		
Data	First & Last Dates, Max. Days		
Water Year	First Date of Measurement	Last Date of Measurement	Maximum Days Missing
1970			
1971			
1972			
1973			
1974	17-May	13-Aug	0
1975			
1976			
1977			
1978			
1979			
1980			
1981	1-May	1-Aug	16
1982	21-May	8-Sep	26
1983	27-May	24-Aug	10
1984	7-Jul	30-Aug	8
1985			
1986	16-May	13-Sep	10
1987	14-May	16-Jul	24
1988	24-Jun	24-Jul	4
1989			
1990	26-Jun	7-Aug	15
1991	21-Jun	13-Sep	13
1992	27-Jul	25-Sep	9
1993	18-May	28-Sep	14
1994	23-May	30-Aug	40
1995	10-May	19-Sep	15
1996	20-May	17-Sep	32
1997	21-May	14-Aug	23
1998	21-May	16-Sep	31
1999	3-Jun	31-Aug	26
Avg.	31-May	28-Aug	18
Earliest	1-May	16-Jul	0
Latest	27-Jul	28-Sep	40

Notes: 1. Data is from Hydrographers' Annual Reports for years 1980 and later, and from WRDS for years prior to 1980.