

MEMORANDUM

**Subject: Bear River Basin Plan
Key Structures and Diversions
ROCKY MOUNTAIN & BLYTHE DIVERSION**

Date: May 6, 2002

Diversion Description: The headgate structure consists of a broken concrete headwall constructed in 1918. There is a steel slide gate with a 30-inch culvert. There is a secondary downstream gate controlling flow across interstate-80 that is used.



Diversion Location: Diversion is located immediately upstream of Evanston at the north end of the Bear River State Park as shown in the location map hereafter.

Rocky Mountain & Blythe

Latitude N 41° 15' 86.1"
Longitude W 110° 56' 28.7"

Conveyance Description: Open channel canal, approximately 15,840 feet in length.¹

Direct Flow Water Rights:²

Priority Date	Permit Number	Permitted Use	Permitted Acres	Flow (CFS)	Cumulative (CFS)	Comments
-1875	TERR	Irrigation	20	0.28	0.28	(John Felter)
-1875	TERR	Irrigation	129	1.84	2.12	(John Felter)
-1875	TERR	Irrigation	11	0.15	2.27	(John Felter)
-1878	TERR	Irrigation, Storage	18	0.25	2.52	(Faulkner Terr)
05-05-1882	TERR	Irrigation	30	0.42	2.94	(John Fielding)
05-05-1882	TERR	Irrigation	82.75	1.18	4.12	(John Fielding)
04-01-1889	TERR	Irrigation	64.80	0.92	5.04	(Crompton Irr)
07-16-1891	TERR	Irrigation	6	0.08	5.12	(Barnes)
05-14-1896	1213	Irrigation	58.40	0.83	5.95	(Dunford-Danks)

05-14-1896	1213	Mun	25.60	0.37	6.32	<i>(Dunford-Danks)</i>
03-20-1897	1488	Irrigation	40	0.57	6.89	<i>(Longdon)</i>
05-24-1897	1607	Irrigation, Domestic, Storage	7.50	0.11	7.00	<i>(Lyndon)</i>
11-17-1897	1662	Irrigation	19	0.27	7.27	<i>(Danks)</i>
10-13-1898	378E	Irrigation	63	0.90	8.17	
05-10-1902	831E	Irrigation	70	1.00	9.17	
05-10-1902	831E	Irrigation	35	0.50	9.67	
07-28-1908	1418E	Irrigation, Domestic	6	0.08	9.75	<i>(Trouble Enl Felter)</i>
12-04-1914	3078E	Irrigation	19	0.27	10.02	<i>ENL CROMPTON</i>
12-04-1914	3079E	Irrigation	12	0.17	10.19	
12-04-1914	3079E	Supplemental Supply	61			<i>Wardle No. 1 (Pleasant Valley or Sulphur Cr.)</i>
06-11-1920	4169E	Irrigation	40	0.57	10.76	
11-13-1934	5019E	Reservoir Supply		79.46 A/f		<i>(1st Enl Crompton Res)</i>

Associated Storage Rights:

Reservoir	Shareholder	Volume (Acre- ft)	Est. % of Volume Used this Diversion ³	Comments
Sulphur Creek	Gary Ellingford	25	100%	
Sulphur Creek	James Crompton	58	100%	
Sulphur Creek	Ila Crompton	58	100%	
Sulphur Creek	Lowham Ranches	444	5%	
Sulphur Creek	Painter Co.	274	100%	
Sulphur Creek	Ranold Phillips	7	100%	

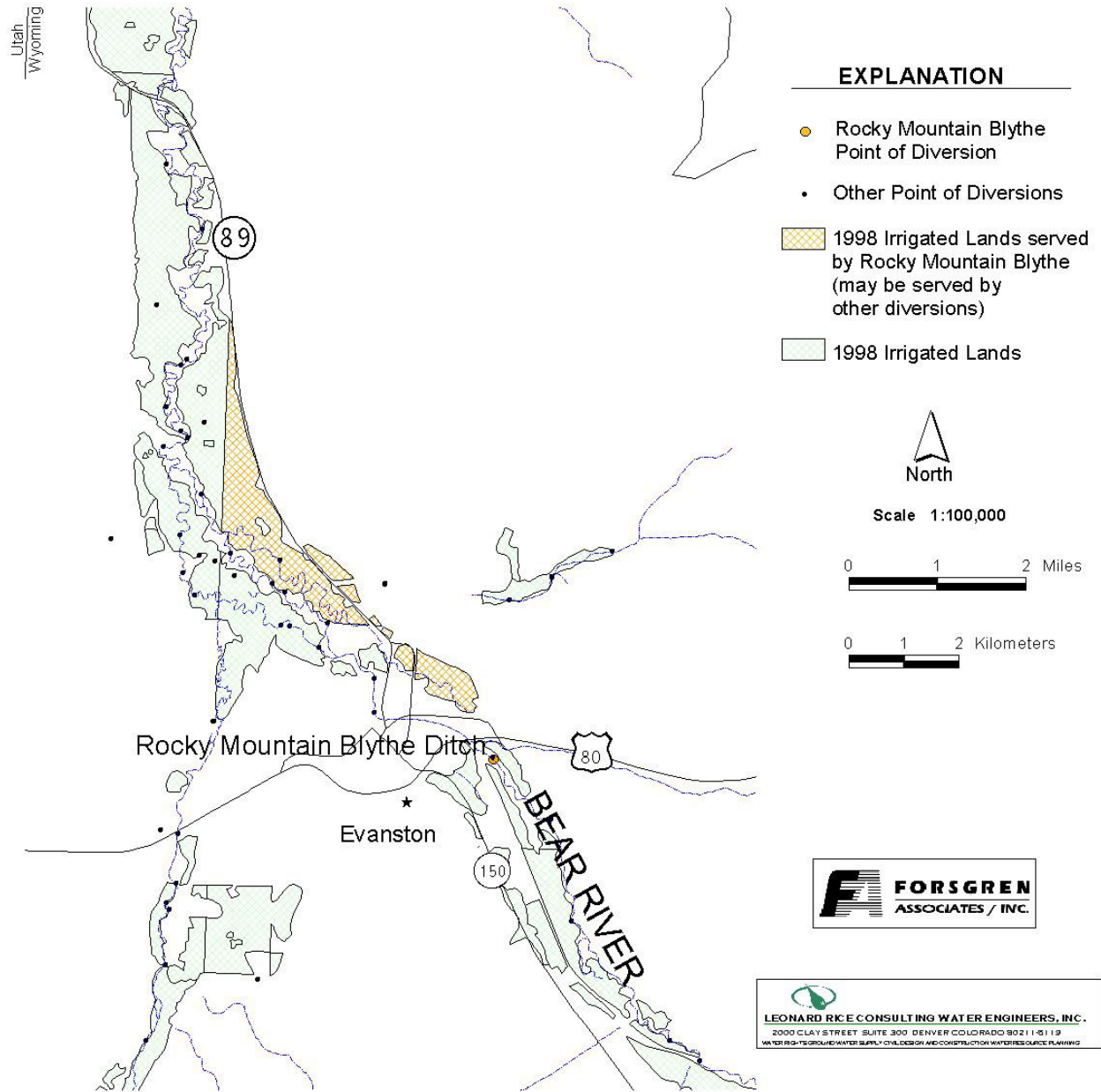
Irrigation Practices: Land is all flood irrigated.³

Estimated Diversion Efficiency: Most of the water is used in the top third of the canal. The largest losses tend to occur in the bottom two-thirds. The city of Evanston is planning on using this canal to irrigate their cemetery, and will likely clean and repair the canal in the near future.³

Calculated Diversion Efficiency = Conveyance Efficiency X Application Efficiency:

Conveyance Efficiency:	65%
Application Efficiency:	<u>55%</u>
Overall Diversion Efficiency:	36%

Rocky Mountain Blythe Point of Diversion Bear River Basin, Wyoming



Conveyance Efficiency is estimated based on total length of main canal. Application Efficiency for Flood 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, Orchard Grass, etc.³

Return Flows: Excess return flow is primarily split between the John Simms Canal (approx. 70%) and the SP Ramsey Canal (approx. 30%)

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 Rocky Mountain & Blythe also delivers water to the Crompton Reservoir.

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 Don Shoemaker, Water Superintendent – October 29, 1999.*
- 4) *State of Utah Natural Resources, Water Budget Studies – Utah, Bear River study Area, September 1994*

**BEAR RIVER WYOMING DIVERSIONS
MONTHLY DIVERSION RECORDS**

ROCKY MOUNTAIN & BLYTH

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	267	8.6	529.6	494	16.5	979.8	224	7.2	444.3	258	8.3	511.7	99	3.3	196.4
1972	322	10.4	638.7	458	15.3	908.4	194	6.3	384.8	159	5.1	315.4	172	5.7	341.2
1973	169	5.5	335.2	509	17.0	1009.6	244	7.9	484.0	148	4.8	293.6	189	6.3	374.9
1974	256	8.3	507.8	339	11.3	672.4	203	6.5	402.6	104	3.4	206.3	161	5.4	319.3
1975	70	2.3	138.8	190	6.3	376.9	264	8.5	523.6	162	5.2	321.3	263	8.8	521.7
1976	102	3.3	202.3	321	10.7	636.7	222	7.2	440.3	119	3.8	236.0	117	3.9	232.1
1977	185	6.0	366.9	229	7.6	454.2	124	4.0	246.0	71	2.3	140.8	36	1.2	71.4
1978	396	12.8	785.5	463	15.4	918.3	342	11.0	678.3	180	5.8	357.0	144	4.8	285.6
1979	308	9.9	610.9	343	11.4	680.3	228	7.4	452.2	136	4.4	269.8	88	2.9	174.5
1980	31	1.0	61.5	349	11.6	692.2	276	8.9	547.4	193	6.2	382.8	37	1.2	73.4
1981	171	5.5	339.2	336	11.2	666.4	243	7.8	482.0	112	3.6	222.1	95	3.2	188.4
1982	264	8.5	523.6	491	16.4	973.9	343	11.1	680.3	189	6.1	374.9	284	9.5	563.3
1983	59	1.9	117.0	80	2.7	158.7	517	16.7	1025.5	549	17.7	1088.9	353	11.8	700.2
1984	13	0.4	25.8	317	10.6	628.8	667	21.5	1323.0	354	11.4	702.1	101	3.4	200.3
1985	283	9.1	561.3	603	20.1	1196.0	323	10.4	640.7	169	5.5	335.2	214	7.1	424.5
1986	82	2.6	162.6	335	11.2	664.5	156	5.0	309.4	249	8.0	493.9	300	10.0	595.0
1987	257	8.3	509.8	306	10.2	606.9	264	8.5	523.6	178	5.7	353.1	162	5.4	321.3
1988	280	9.0	555.4	286	9.5	567.3	138	4.5	273.7	185	6.0	366.9	124	4.1	246.0
1989	890	28.7	1765.3	885	29.5	1755.4	270	8.7	535.5	142	4.6	281.7	30	1.0	59.5
1990	160	5.2	317.4	394	13.1	781.5	251	8.1	497.9	90	2.9	178.5	76	2.5	150.7
1991	484	15.6	960.0	473	15.8	938.2	268	8.6	531.6	115	3.7	228.1	161	5.4	319.3
1992	283	9.1	561.3	300	10.0	595.0	165	5.3	327.3	80	2.6	158.7	68	2.3	134.9
1993	47	1.5	93.2	667	22.2	1323.0	389	12.5	771.6	69	2.2	136.9	88	2.9	174.5
1994	218	7.0	432.4	263	8.8	521.7	136	4.4	269.8	85	2.7	168.6	121	4.0	240.0
1995	29	0.9	57.5	205	6.8	406.6	325	10.5	644.6	165	5.3	327.3	289	9.6	573.2
1996	478	15.4	948.1	510	17.0	1011.6	294	9.5	583.1	144	4.6	285.6	131	4.4	259.8
1997	170.1	5.5	337.4	253.4	8.4	502.6	255.7	8.2	507.2	160.7	5.2	318.7	50.2	1.7	99.6
1998	149.1	4.8	295.7	153	5.1	303.5	363.6	11.7	721.2	69.4	2.2	137.7	73	2.4	144.8
1999	265	8.5	525.6	425	14.2	843.0	263	8.5	521.7	233	7.5	462.1	291	9.7	577.2

AVERAGES **7.4** **457.4** **12.6** **750.8** **8.8** **543.9** **5.4** **333.0** **5.0** **295.3**

Notes: *1. No published records are available for this diversion for 1970
 2. This canal ultimately feeds into Crompton Reservoir.