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**MEMORANDUM**

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**Subject: Bear River Basin Plan  
Key Structures and Diversions  
JOHN SIMS DIVERSION**

**Date:** August 7, 2000

**Diversion Description:** The headgate structure consists of an older rough-hewn wood headwall with a 5-foot wide slide gate. There is a second 5-foot opening that is typically boarded up. The river is typically diverted each year with broken concrete, rocks, etc. Erosion and flooding on the opposite side of the diversion appears to be a common occurrence.



*John Sims Ditch headgate*

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

Latitude      N 41° 17' 42.5"  
Longitude     W 110° 59' 19.6"

**Conveyance Description:** Open channel ditch, approximately 10,560 feet in length. <sup>1</sup>

**Direct Flow Water Rights:**<sup>2</sup>

Priority Date	Permit Number	Permitted Use	Acres	Flow (CFS)	Cumulative (CFS)	Comments
12-07-1871	TERR	Irrigation	160	2.28	2.28	
-1887	TERR	Irrigation	75	1.07	3.35	(Rocky Mtn & BR Co)
-1887	TERR	Irrigation	78	1.11	4.46	(Rocky Mtn & BR Co)
10-05-1990	2846	Irrigation	35	0.50	4.96	
10-05-1900	2846	Irrigation	30	0.42	5.38	
08-05-1909	2808E	Irrigation	69	0.99	6.37	(Rocky Mtn & Blythe)
09-25-1956	5869E	Irrigation, Storage	3.50	0.16	6.42	

09-25-1956	5869E	Irrigation, Storage	29	0.41	6.83	
09-25-1956	5869E	Irrigation, Storage	51.60	0.74.	7.57	
09-25-1956	5869E	Irrigation, Storage	18.50	0.26	7.83	

**Associated Storage Rights:**

Reservoir	Shareholder	Volume (Acre-ft)	Est. % of Shares Used this Diversion <sup>3</sup>	Comments
Sulphur Creek	Evanston LDS Church	143	100%	
Sulphur Creek	Kemmerer LDS Church	143	100%	
Sulphur Creek	Charles Nixon	137	33%	
Sulphur Creek	Isabelle Sims	131	100%	
Sulphur Creek	Gilda Sims	219	100%	
Sulphur Creek	Michael Sims	40	50%	

**Irrigation Practices:** Land is all flood irrigated..<sup>3</sup>

**Estimated Diversion Efficiency:**

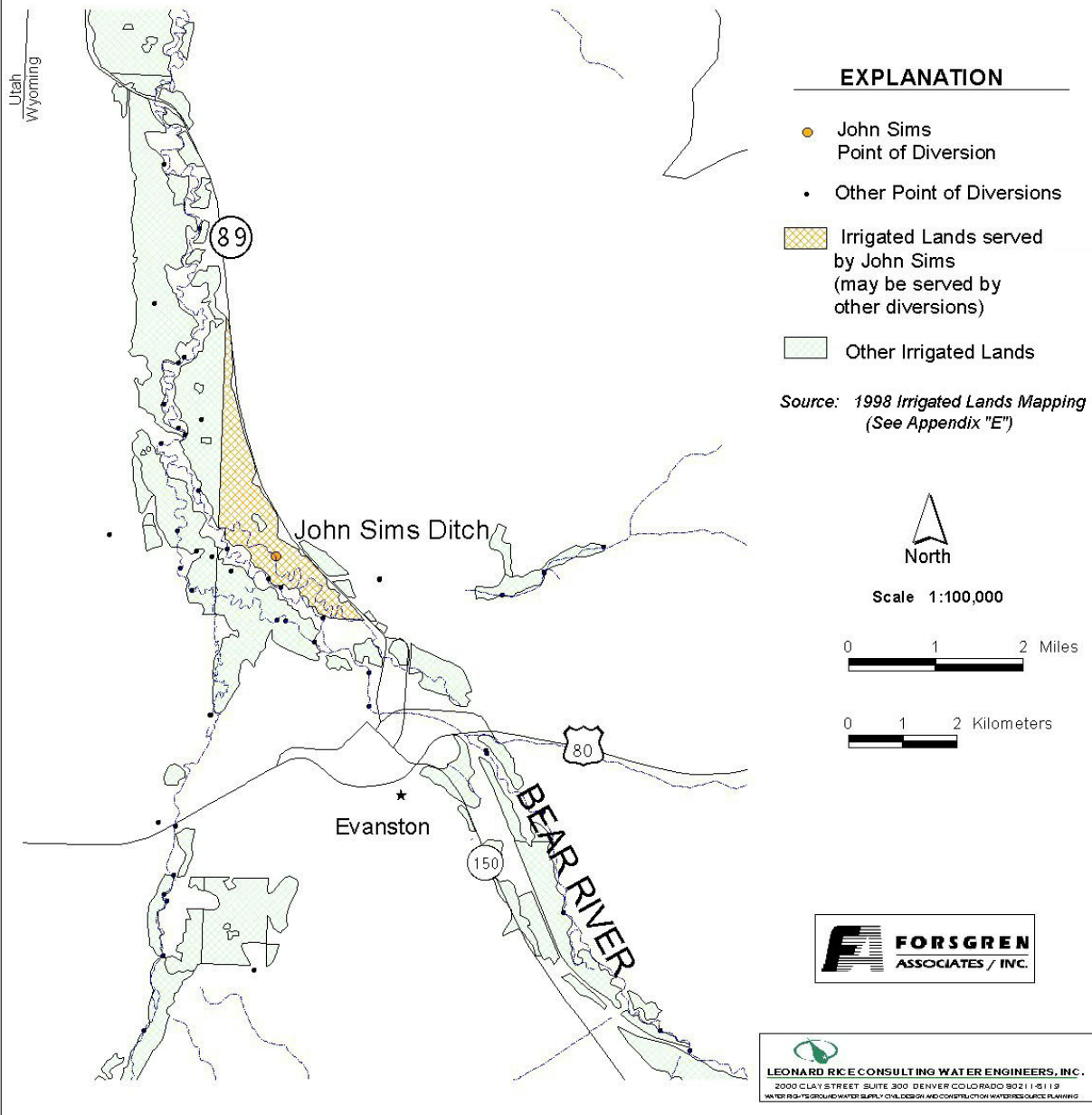
Calculated Diversion Efficiency = Conveyance Efficiency X Application Efficiency:

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

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:** Irrigated acreage was approximately 25% +/- alfalfa ten years ago w/ two cuttings. Presently, there is approximately 10% alfalfa with a single crop. Oats and grains make up about 10-12%. Remainder is meadow grasses.<sup>3</sup>

## John Sims Point of Diversion Location Map



**Return Flows:** Excess return flow is primarily split between the SP Ramsey Canal (approx. 50%) and the Bear River (approx. 50%).

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 John Sims ditch intercepts substantial return flows in the late summer from the Evanston Water Supply Canal and the Rocky Mountain & Blythe Canals.<sup>3</sup>

**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**

**JOHN SIMS**

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	288	9.3	571.2	589	19.6	1168.3	548	17.7	1086.9	392	12.6	777.5	208	6.9	412.6
1972	318	10.3	630.7	693	23.1	1374.5	282	9.1	559.3	340	11.0	674.4	198	6.6	392.7
1973	200	6.5	396.7	253	8.4	501.8	336	10.8	666.4	308	9.9	610.9	331	11.0	656.5
1974	233	7.5	462.1	888	29.6	1761.3	150	4.8	297.5	304	9.8	603.0	294	9.8	583.1
1975	64	2.1	126.9	575	19.2	1140.5	600	19.4	1190.1	298	9.6	591.1	374	12.5	741.8
1976	108	3.5	214.2	391	13.0	775.5	388	12.5	769.6	185	6.0	366.9	183	6.1	363.0
1977	118	3.8	234.0	281	9.4	557.4	216	7.0	428.4	88	2.8	174.5	76	2.5	150.7
1978	165	5.3	327.3	559	18.6	1108.8	278	9.0	551.4	347	11.2	688.3	169	5.6	335.2
1979	346	11.2	686.3	327	10.9	648.6	212	6.8	420.5	226	7.3	448.3	95	3.2	188.4
1980	116	3.7	230.1	744	24.8	1475.7	265	8.5	525.6	252	8.1	499.8	178	5.9	353.1
1981	472	15.2	936.2	471	15.7	934.2	217	7.0	430.4	221	7.1	438.3	247	8.2	489.9
1982	460	14.8	912.4	452	15.1	896.5	177	5.7	351.1	206	6.6	408.6	242	8.1	480.0
1983	213	6.9	422.5	451	15.0	894.5	203	6.5	402.6	261	8.4	517.7	77	2.6	152.7
1984	128	4.1	253.9	290	9.7	575.2	315	10.2	624.8	217	7.0	430.4	218	7.3	432.4
1985	671	21.6	1330.9	590	19.7	1170.2	213	6.9	422.5	348	11.2	690.2	200	6.7	396.7
1986	193	6.2	382.8	310	10.3	614.9	213	6.9	422.5	289	9.3	573.2	237	7.9	470.1
1987	358	11.5	710.1	220	7.3	436.4	297	9.6	589.1	254	8.2	503.8	210	7.0	416.5
1988	434	14.0	860.8	317	10.6	628.8	263	8.5	521.7	139	4.5	275.7	95	3.2	188.4
1989	732	23.6	1451.9	609	20.3	1207.9	267	8.6	529.6	195	6.3	386.8	81	2.7	160.7
1990	223	7.2	442.3	438	14.6	868.8	276	8.9	547.4	211	6.8	418.5	69	2.3	136.9
1991	402	13.0	797.4	405	13.5	803.3	155	5.0	307.4	290	9.4	575.2	143	4.8	283.6
1992	305	9.8	605.0	178	5.9	353.1	150	4.8	297.5	70	2.3	138.8	179	6.0	355.0
1993	178	5.7	353.1	204	6.8	404.6	178	5.7	353.1	11	0.4	21.8	201	6.7	398.7
1994	471	15.2	934.2	323	10.8	640.7	178	5.7	353.1	168	5.4	333.2	70	2.3	138.8
1995	220	7.1	436.4	429	14.3	850.9	349	11.3	692.2	260	8.4	515.7	283	9.4	561.3
1996	424	13.7	841.0	749	25.0	1485.6	217	7.0	430.4	143	4.6	283.6	174	5.8	345.1
1997	177	5.7	351.1	296.5	9.9	588.1	114.6	3.7	227.3	190.5	6.1	377.9	231.6	7.7	459.4
1998	147.9	4.8	293.4	363.8	12.1	721.6	199.4	6.4	395.5	29.6	1.0	58.7	371	12.4	735.9
1999	198	6.4	392.7	466	15.5	924.3	245	7.9	486.0	115	3.7	228.1	77	2.6	152.7

**AVERAGES**

**9.3 572.0**

**14.8 879.7**

**8.3 513.1**

**7.1 434.9**

**6.3 377.0**

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