

M. C. HINDERLIDER
STATE ENGINEER
C. C. HEZMALHALCH
DEPUTY



L. T. BURGESS
CHIEF HYDROGRAPHER
W. T. BLIGHT
OFFICE ENGINEER

STATE OF COLORADO
OFFICE OF STATE ENGINEER
DIVISION OF WATER RESOURCES

DENVER 2

November 20, 1947

SUBJECT:

Mr. M. C. Hinderlinder
State Engineer
20 Capitol Building
Denver, Colorado

Dear Sir:

I herein transmit my annual report as Division Engineer of Irrigation Division No. 1 for the year 1947.

The irrigation season of 1947 will probably be recorded as one of the wettest ever known in this area. Following a fall and winter of extremely heavy snow fall, the irrigation supply was more than ample in almost every section of this Division, with the result that very few shortages occurred. The most senior demand made was for priority of date July 8, 1876.

Due to the excessive runoff on the eastern slope, there was less demand than usual for transmountain water, which resulted in a much smaller draft from this source, as shown by the accompanying tabulation of transmountain diversions.

Temperatures were subnormal during the early part of the season, which retarded crop growth considerably; however, normal temperatures later in the season promoted growth to the extent that above-normal yields resulted. The dry lands again produced an excellent yield of small grains. Heavy precipitation during October retarded sugar beet harvest to some extent.

Nearly all reservoirs were filled to capacity by July 1st and little of this storage was used until the latter part of August. The carry-over storage in reservoirs on November 1st of this year was 514,000 acre feet, or about 60% of present capacity, and it is to be expected that considerable water will be lost during the coming season due to inadequate storage space.

Work is progressing on construction of the Colorado - Big Thompson project, upon completion of which considerable more water and storage capacity will be made available in this Division.

There were 4,610 acre feet of water diverted through the Adams Tunnel this summer under a temporary agreement, which is the first diversion made by this new project. Under the temporary arrangement, diversion through the Adams Tunnel was by-passed from the east portal of the tunnel to the Big Thompson River by means of a pipe line which was purchased by the Big Thompson Mutual Pipe Line and Irrigation Company of Loveland. The construction of this pipe line is a temporary measure, pending completion of the various units of the project by the U. S. Bureau of Reclamation.

Diversion through the Adams Tunnel was resumed November 7th at the rate of 16.5 second feet, after having been closed since September 18th.

Mr. Clark E. Schnurr was employed as Special Deputy State Engineer this year to assist in the administration in this Division and is located at Loveland, Colorado. The advent of the Colorado - Big Thompson project made additional administrative assistance imperative.

The Laramie River decrees were administered in the same manner as has been done since 1942, with the exception that, due to Colorado Supreme Court confirmation of the District Court ruling, the water officials are technically enjoined from being party to the agreement entered into by the various water users from the Laramie River. The diversion record was kept by the water officials for each diversion, as in the past, to the end that Colorado's share of water from the Laramie River, amounting to 39,750 acre feet annually, as determined by the United States Supreme Court, be not exceeded.

There was only one case of consequence involving the failure of a dam in this Division. This was a major slip of Marshall Lake dam, similar in character to the slip which occurred in this dam two years ago. The lake was at a depth of 64 feet above the outlet when the slip started; immediately thereafter the lake was drawn down to 58 feet depth, and complete failure was avoided. Repair of this dam has not been started up to this time.

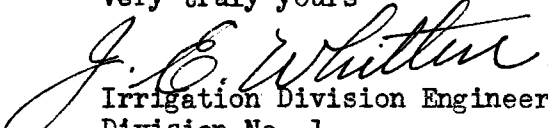
The Empire Reservoir dam showed signs of trouble due to excessive seepage, but no serious slips have occurred and some drainage work seems to have stabilized the condition.

The administrative cost of this Division, exclusive of general office expense, was 3.2 cents per acre irrigated, or 2.4 cents per acre, based upon the total present irrigable area.

There were no controversies of major importance and very few others during the past year. Consequently, there were very few demands made upon the Division Engineer relative to such matters.

A tabulation of the Water Commissioners' crop reports accompanies and forms a part of this report.

Very truly yours


Irrigation Division Engineer
Division No. 1

JEW:FF

TRANS-MOUNTAIN DIVERSION

Irrigation Division No. 1

1947

<u>Name of Diversion</u>	<u>From Dist.</u>	<u>To Dist.</u>	<u>Source of Supply</u>	<u>First Day</u>	<u>Last Day</u>	<u>Acre Feet</u>
Adams Tunnel	51	4	Colorado River	8-11	9-18	4,610
Berthoud Pass	51	7	Colorado River	7-2	8-8	165
Bob Creek	48	3	Laramie River	5-16	6-23	524
Cameron Pass	47	3	North Platte	-	-	0
Columbine	48	3	Laramie River	5-25	6-23	188
Deadman	48	3	Laramie River	6-2	6-25	(1,008)
Eureka	51	4	Colorado River	6-28	8-30	175
Grand River	51	3	Colorado River	5-12	9-18	25,000
Laramie Poudre Tunnel	48	3	Laramie River	5-9	8-7	14,342
Lost Lake	48	3	Laramie River	-	-	0
Michigan	47	3	North Platte	5-31	8-26	3,264
Moffat Tunnel	51	7	Colorado River	5-6	11-6	25,272
Sand Creek	48	3	Sand Creek	5-4	6-24	5,341 *
Skyline	48	3	Laramie River	5-9	6-12	3,812
Williams Fork Tunnel	51	7	Colorado River	8-1	9-4	2,070
Total						84,763

* Includes Deadman Ditch diversion.

LARAMIE RIVER

MEADOWLAND DIVERSIONS

1947

AMOUNT DIVERTED
SECOND FEET

NAME OF DITCH

Bliler - Boswell.....	477.20
British Creek No. 1.....	24.98
Brown - Nunn Creek.....	335.22
Brown - Porter Creek.....	71.52
Ben Warren and Enlargement.....	.08
Brinker.....	11.49
Comet.....	225.98
Cabin.....	51.76
Detro No. 1.....	74.49
Detro No. 2.....	0
Davy.....	202.10
Ferguson.....	0
Forrester - Brown.....	111.88
Forrester No. 1.....	135.63
Forrester No. 2.....	0
Glendevy.....	20.63
Grace Creek and Enlargement.....	690.24
Grant - Upper.....	79.96
Grant Lower.....	85.37
Hills.....	90.32
Upper Hills.....	89.76
Homestead.....	80.85
Homestead No. 1.....	135.92
Homestead No. 2.....	105.89
Hance.....	0
Jim - Jimmy Creek - Old.....	145.30
Jim No. 2 - Jimmy Creek - New.....	37.81
Jimmy and Enlargement - Jimmy Creek.....	119.22
Jimmy Creek - Laramie River.....	283.18
La Garde and Enlargement.....	262.93
La Garde No. 1.....	.48
Lamb.....	504.26
Link No. 1.....	311.55
Link No. 2.....	0
Lone Tree.....	107.33
Mansfield and Enlargement.....	430.92
Mansfield No. 2.....	408.93
Martin No. 1.....	328.88
Martin No. 2 and Enlargement.....	423.80
McIntyre.....	197.57
Nellie.....	177.19
Ollie.....	285.85
Pachie.....	329.31
Parker.....	0
Pine Creek and Enlargement.....	67.85
Roaring Creek.....	0
Stuck.....	175.12

Smith - Brown.....	172.59
Stuart No. 1.....	77.79
Stuart No. 2.....	30.46
Stubb.....	58.63
Schnitger.....	215.34
Trollope.....	65.94
Talmadge No. 1.....	18.02
Talmadge No. 2.....	0
Timothy.....	322.05
Warren.....	0
Ward No. 1.....	167.38
Ward No. 2.....	150.33
Wright.....	383.24
Yelton.....	321.68

Total..... 9682.20

Total..... 19,204 Acre Feet

TRANSMOUNTAIN DIVERSIONS - LARAMIE RIVER

<u>NAME OF DIVERSION</u>	<u>AMOUNT DIVERTED ACRE FEET</u>
Bob Creek.....	524
Columbine.....	188
Deadman.....	1008
Laramie-Poudre Tunnel.....	14,342
Lost Lake.....	0
Skyline.....	3812
Total.....	19,874

ACRE FEET IN STORAGE - IRRIGATION DIVISION NO. 1

District	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1	96,255	108,512	118,158	130,271	137,219	139,975	135,749	115,629	61,516	31,313	49,292	89,145
2	67,639	74,174	80,553	86,238	89,545	95,266	95,226	79,618	54,447	34,658	38,366	47,039
3	41,785	46,490	50,738	60,306	72,001	101,594	145,891	122,854	70,312	45,960	54,333	64,149
4	15,454	16,246	16,924	31,220	39,597	60,154	89,203	86,465	65,738	51,057	53,977	55,677
5	14,261	15,829	16,570	19,100	23,449	30,885	32,260	30,507	20,930	15,310	16,265	18,408
6	12,872	13,623	13,888	15,736	22,315	35,744	33,818	34,661	28,133	23,894	24,313	24,639
7	(7,275)	6,258	5,403	4,570	5,328	12,957	15,161	14,771	13,896	12,444	12,685	11,831
	(R.5,632)	(R.4,737)	(R.3,921)	(R.2,918)	(R.2,069)	(R.8,827)	(R.10,922)					
8	16,302	15,858	17,100	17,721	17,425	17,868	17,613	15,150	17,936	13,511	15,442	16,519
9	5,418	5,418	5,700	7,313	8,000	8,823	8,820	7,582	5,917	4,815	5,531	5,971
23	153,939	153,388	151,984	156,520	166,192	185,973	186,465	186,031	184,908	181,104	183,895	183,895
64	71,487	89,446	103,991	121,054	123,366	121,068	122,044	108,322	61,172	40,595	59,811	76,162
TOTALS	502,687	545,242	581,009	650,049	704,437	810,307	882,250	801,590	584,905	454,661	513,910	593,435
City of Denver	173,773	171,773	170,805	173,859	181,936	208,168	210,500	208,034	210,000	201,559	206,150	206,565
Balance for Irrigation	328,914	373,469	410,204	476,190	522,501	602,139	671,750	593,556	374,905	253,102	307,760	386,870

RESERVOIR STORAGE

Irrigation Division No. 1

Values in Thousands of Acre Feet

Means for Period 1926 - 1947

	<u>Oct. 1</u>	<u>Nov. 1</u>	<u>Dec. 1</u>	<u>Jan. 1</u>	<u>Feb. 1</u>	<u>Mar. 1</u>	<u>Apr. 1</u>	<u>May 1</u>	<u>June 1</u>	<u>July 1</u>
Antero	11.4	9.6	9.8	9.6	9.8	10.2	10.8	12.4	12.7	12.4
Cheesman	55.7	53.5	54.3	53.3	52.3	51.7	53.6	58.5	63.4	63.4
Marston	13.7	15.4	15.4	14.9	14.6	15.0	15.5	15.7	16.0	15.8
Barr	3.1	4.8	9.7	13.0	15.0	17.5	19.2	21.7	22.0	17.5
Horse Creek	2.3	2.4	3.4	4.7	5.7	7.3	8.3	9.0	9.4	7.6
Prospect	.3	.4	.4	1.0	1.2	2.0	2.5	2.8	2.9	2.6
Milton	3.4	4.0	5.5	6.2	6.9	9.4	11.6	13.4	14.3	12.8
Lower Latham	2.1	2.7	3.7	4.3	4.6	4.9	5.6	5.8	5.6	5.3
Empire	3.0	4.4	7.5	13.1	18.8	24.3	28.9	28.8	27.2	23.2
Riverside	5.2	12.8	20.0	31.2	37.6	42.9	44.8	45.4	46.2	39.0
Jackson	5.2	7.3	15.1	23.0	27.6	30.9	33.4	33.8	32.1	29.0
North Sterling	6.3	10.1	19.4	27.6	35.9	43.2	51.1	54.6	52.9	43.0
Prewitt	5.2	6.8	8.7	12.8	16.7	20.1	22.1	21.8	20.6	18.5
Julesburg	7.8	12.1	15.3	18.0	19.1	24.1	21.7	22.2	21.4	19.0
Standley	3.1	2.9	3.4	5.2	7.2	9.8	10.6	13.0	13.6	11.1
Marshall	1.2	1.3	1.4	1.8	2.1	2.4	3.0	4.6	6.4	5.7
Lake Loveland	5.1	5.2	4.1	3.8	4.0	4.1	4.1	5.4	8.6	10.6
Fossil Creek	1.5	2.5	4.0	5.3	6.3	7.0	8.0	8.6	7.2	7.0
Boyd	13.1	12.3	13.1	12.2	12.4	13.5	13.1	14.1	16.1	17.0
Halligan	.1	.7	1.4	2.0	2.8	3.3	3.4	3.7	4.9	4.8

Compiled from Records of
STATE ENGINEER'S OFFICE

By J. E. Whitten
Division Engineer

WATER COMMISSIONERS' ANNUAL REPORTS
IRRIGATION DIVISION NO. 1
FOR THE IRRIGATION SEASON OF 1947

WATER DIST. NO.	FIRST DAY WATER USED FROM NATURAL STREAM	LAST DAY WATER USED FROM NATURAL STREAM	ACRE FEET	TOTAL NO. OF ACRES THAT CAN BE IRRIGATED	ALFALFA	NATURAL GRASSES	CEREALS	ORCHARDS	MARKET GARDENS	POTATOES	SUGAR BEETS	BEANS	PEAS	CABBAGE	CORN	OTHER	TOTAL IRRIGATED
1.	4-11-47	10-17-47	418,077	180,782	33,731	17,705	33,945	121	125	2,390	21,547	20,583					167,093
2	4-22-47	10-14-47	429,612	228,266	37,853	10,813	78,450	270	12,500	12,013	35,872	20,923	1,027	69	25,193	11,684	221,343
3	5-3-47	10-20-47	321,854	380,000	56,460	4,933	75,670	1,696	4,672	23,792	43,129	10,040	624	2,548	8,087	987	264,160
4	5-7-47	10-31-47	171,334	145,420	44,985	375	57,880	1,610	1,320	7,790	11,935	5,040	2,155	343	2,000	801	135,675
5	5-5-47	10-22-47	100,455	112,235	41,040	8,855	42,460	90	1,005		16,735			445		140	111,135
6	5-1-47	10-31-47	106,163	195,335	30,022	58,485	44,430	639	2,760	370	5,313	915	615	182	19,818	3,748	167,297
7	4-1-47	10-25-47	133,853	116,233	12,858	955	62,351	1,251	10,894	95	845	1,001	319	1,218	12,681	4,064	108,532
8	4-1-47	10-31-47	148,055	107,878	9,242	1,590	4,831	12	1,372		396	59		25	2,603	2,134	22,239
9	5-4-47	10-14-47	25,613	18,583	5,318	1,630	5,703	74	315	0	168	0	0		808	325	14,366
23	4-10-47	10-15-47	119,010	48,044		42,034											42,034
47	4-15-47	10-10-47	E.144,000	80,000		48,000											48,000
48	5-2-47	10-28-47	19,204	5,000		4,600											4,600
64	3-17-47	10-31-47	271,447	197,722	37,571	30,568	41,771	115	658	3,994	23,595	6,252	0	175	22,061	5,533	172,293
65	5-18-47	10-19-47	15,934	8,898 *	1,092	240	518	26	61		84				1,116	375	3,512
TOTALS			2,414,611	1,824,396	310,172	230,783	448,009	5,904	35,682	50,444	159,619	64,813	4,740	5,005	136,367	30,741	1,482,279

* 5,000 acres in Nebraska.
2,069 acres in Nebraska.