

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



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OFFICE ENGINEER

STATE OF COLORADO
OFFICE OF STATE ENGINEER
DIVISION OF WATER RESOURCES

DENVER 2

November 23, 1949

SUBJECT:

Mr. M. C. Hinderlider
State Engineer of Colorado
State Capitol Building
Denver, Colorado

Dear Sir:

I hereby transmit my Annual Report on Irrigation Division No. 1 for the year 1949.

The fall of 1948 was very dry and snowfall during the winter months was sub-normal, stream flow was also low. The result of the above conditions was sub-normal storage of water during the fall and winter; however, spring precipitation came in time and in such quantity as to alleviate all shortage of water, and nearly all reservoirs were filled. The reservoir storage on October 1, 1948 was 34% of capacity and only 54% on March 1, 1949. Spring storage increased the amount to 99% of present capacity. The carry-over in storage on October 1, 1949 was 46% of capacity or 418,417 acre feet.

At this time, it appears that the storage reservoirs will be filled before the next irrigation season.

Water to supply demands for direct irrigation was generally ample until late in the season when shortages developed in most districts, however, most crops were harvested or well matured before serious water shortage developed.

Crops were above normal in yield in most sections. Sugar beet acreage was somewhat below normal while small grain and beans showed an increase in acreage. Hay production in the mountain areas was above normal.

Precipitation for the period January 1 to November 1, 1949, amounted to 16.44 inches, most of which fell during the period March 24 to July 1. There were few floods this year, however, on June 12 and 13, rains of cloudburst proportions (8 in. and 4 in., respectively) occurred on Lost Creek above The Lord Reservoir causing floods which caused the failure of the Lord Reservoir Dam. Some damage to the Town of Roggen and to the Burlington railroad resulted from the failure of the Lord Reservoir Dam. That the damage was not more extensive was due to several factors:

1. The storms while intense were of short duration thus resulting in a comparatively low volume of runoff;
2. The Lord Reservoir capacity is only about 1,000 acre feet;

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Mr. M. C. Hinderlider
Denver, Colorado

3. There is a large expanse of relatively level land below the dam over which the flood had opportunity to spread without causing appreciable damage.

There were no other failures of dams in the division. Extensive repairs were made on Horse Creek Reservoir Dam and the Pleasant Valley Dam. Several other dams have been repaired to some extent. Work is now in progress on the raising of the Welch Lakes dam to provide adequate freeboard. Some damage resulted from the overflow of the South Platte river during the late spring runoff.

The diversion of water from the Western Slope was below normal due to the adequate supply in the streams on the eastern slope during the early part of the season. The total diversion of water from other water sheds into the South Platte amounted to 87,957 acre feet.

Construction is progressing on the various units of the Colorado-Big Thompson diversion project. Lake Estes was completed, and filled during the early summer. A more detailed report on the aforementioned project has been made by Special Deputy C. E. Schnurr.

Special Deputy A. R. Owens assisted with the administration of the Laramie River decree and other matters.

The department had the misfortune to lose from its staff, Mr. R. A. Mosier who passed away October 11, 1949. Mr. Mosier had served as Water Commissioner of Water District No. 48 for some thirty years.

There were no controversies of major importance and the usual local complaints were quite generally handled by the local Water Commissioners.

The proposed construction of the Narrows dam across the South Platte river near Orchard, Colorado, has caused some apprehension among the water users in that area and, at present, plans are underway to investigate a site some 20 miles upstream from the Narrows which seems to meet with more favor among those concerned.

A land slide occurred on West Creek, some 8 miles above Deckers on or about May 25th which formed a small lake covering about $7\frac{1}{2}$ acres in area and impounding about 35 acre feet of water. The slide obliterated about $1/4$ mile of highway which later was re-routed around the lake.

I believe the dates of reporting reservoir storage on annual Water Commissioners reports would better show the true picture if such reports were made as of June 1st and October 1st instead of May 1st and November 1st as the peak storage is generally reached about June 1st and the low about October 1st.

Tabulations of the Water Commissioners annual reports, trans-mountain diversions, Laramie river diversions, and amount of water in storage by months accompany and form a part of this report.

Respectfully submitted,

J. C. Whitton
Irrigation Division Engineer
Irrigation Division No. 1

JEW/a
Att.

TRANS-MOUNTAIN DIVERSIONS
Irrigation Division No. 1
1 9 4 9

<u>Name of Diversion</u>	<u>From District</u>	<u>To District</u>	<u>Source of Supply</u>	<u>First Day</u>	<u>Last Day</u>	<u>Acre Feet</u>
Deadman	48	3	Laramie River	5-30	7-16	1,084
Laramie-Poudre Tunnel	48	3	" "	5-20	8-6	10,766
Skyline	48	3	" "	6-5	8-28	7,853
Lost Lake	48	3	" "	-	-	0
Columbine	48	3	" "	6-13	6-30	28
Bob Creek	48	3	" "	5-29	6-12	176
Sand Creek	48	3	Sand Creek	5-2	7-17	3,683
Michigan	47	3	North Platte	6-3	8-6	2,354
Cameron Pass	47	3	" "	6-22	7-13	149
Grand River	51	3	Colo. River	5-22	9-19	17,194
Moffat	51	6	" "	4-27	11-2	24,841
Williams Fork	51	7	" "	6-1	9-16	1,896
Berthoud Pass	51	7	" "	6-26	8-26	416
Eureka	51	4	" "	6-21	9-10	106
Adams Tunnel	51	4	" "	11-13-1948	9-14-1949	27,317
Boreas Pass	36	23	" "	7-4	7-25	94
Total						87,957

DIVERSIONS FROM LARAMIE RIVER BY DITCHES IN COLORADO
FOR THE YEAR OF 1949

Records of the Office of the State Engineer of Colorado

<u>Name of Ditch</u>	<u>Amount Diverted Second Feet</u>
Eller - Boswell	544.30
British Crk. No. 1	35.90
Brown - Nunn Creek	332.32
Brown - Porter Creek	63.22
Ben Warren & Hulg.	0
Brinker	16.44
Comet	217.11
Cabin	41.14
Detro No. 1	115.84
Detro No. 2	0
Davy	209.12
Ferguson	0
Forrester-Brown	58.14
Forrester No. 1	191.52
Forrester No. 2	0
Grace Creek & Hulg.	711.46
Grant	47.67
Hills	0
Upper Hills	117.26
Homestead	(McIntyre) 30.93
Homestead No. 1	(Big Jenkins) 317.05
Homestead No. 2	(Little Jenks) 93.51
Hance	0
Jim	(Jimmy Crk) 133.23
Jimmy & Hulg.	(Jimmy Crk) 126.02
Jimmy Creek	(Laramie River) 307.58
LeGarde & Hulg.	206.91
LeGarde No. 1	0
Lamb	625.12
Link No. 1	263.63
Link No. 2	0
Lone Tree	127.34
Mansfield & Hulg.	473.59
Mansfield No. 2	383.69
Martin No. 1	284.02
Martin No. 2 & Hulg.	686.51
McIntyre	89.31
Nellie	81.27
Ollie	304.62
Pache	284.97
Parker	0
Pine Creek & Hulg.	34.05
Stuck	182.40

The following is a statement of water in storage in Irrigation Division No. 1, from January 1 to December 1, 1949, tabulated by districts. Does not include North Park District No. 47, nor the Laramie River Basin District No. 48, as there is very little storage in either of these districts.

Dist. No.	Values in Acre Feet											
	Jan, 1st	Feb, 1st	Mar, 1st	April 1st	May 1st	June 1st	July 1st	Aug. 1st	Sept. 1st	Oct. 1st	Nov. 1st	Dec. 1st
1	65,318	74,562	90,960	115,510	122,809	129,109	138,321	109,276	53,618	17,211	33,857	54,152
2	47,442	60,446	70,185	71,113	77,449	88,068	91,159	86,185	43,514	26,469	30,035	42,128
3	30,519	33,345	38,158	45,656	57,481	103,801	156,753	137,694	73,856	57,904	63,233	70,664
4	29,625	27,157	27,993	31,000	35,994	55,345	88,227	83,752	53,826	43,342	40,482	42,009
5	8,959	9,526	10,004	11,010	13,916	26,622	30,871	27,416	16,394	12,873	12,873	12,988
6	16,564	14,092	12,907	13,719	15,237	24,008	30,324	33,317	25,282	20,525	19,138	19,951
7	7,043	6,239	5,059	4,278	3,551	7,346	15,326	15,369	12,091	9,912	8,484	6,958
8	11,958	12,873	14,525	16,481	15,558	18,050	17,890	16,731	14,068	12,805	13,746	14,139
9	2,590	2,912	3,490	4,155	6,407	8,853	9,291	9,178	5,343	3,409	3,142	4,085
23	156,590	153,376	142,396	153,204	161,950	170,351	186,531	186,031	175,672	171,173	170,005	173,340
64	68,474	67,517	70,914	85,694	101,671	110,526	124,778	95,014	60,276	42,794	55,566	80,994
Totals	445,082	462,045	486,591	551,820	611,623	742,079	889,471	799,963	533,940	418,417	450,561	521,408
City of Denver	174,316	171,213	160,640	172,088	176,617	193,129	210,284	209,568	198,929	191,866	190,706	192,628
Total for Irrigation	270,766	290,832	325,951	379,732	435,006	548,950	679,187	590,396	335,011	226,551	259,855	328,780

TABULATION OF WATER COMMISSIONERS ANNUAL REPORTS
IRRIGATION DIVISION NO. 1
FOR THE IRRIGATION SEASON OF 1949

Water Dist. No.	First Day Water Used From		Last Day Water Used From		Acres 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
	Natural Stream		Natural Stream																
1	3-16-49		10-16-49		348,274	180,550	30,907	17,185	35,003	30	232	1,953	13,561	23,975					166,554
2	4-20-49		10-31-49		397,643	230,851	40,266	11,720	82,945	519	13,159	11,389	31,694	23,609	1,200	166	27,467	16,075	226,664
3	4-30-49		10-17-49		411,218	264,055	55,766	4,954	81,359	2,114	4,835	23,693	36,530	11,510	871	413	6,979	2,010	264,055
4	4-8-49		10-21-49		176,950	142,670	44,850	350	55,930	1,415	4,750	8,435	9,720	6,575	3,645	240	40,000	460	136,370
5	4-18-49		10-29-49		98,489	111,880	43,080	8,855	43,035	90	985	15,015	3,170	1,085	775	250	20,975	600	111,880
6	5-1-49		10-31-49		95,778	195,335	31,105	58,500	44,130	639	2,725	270	795	926	309	170	12,981	5,476	169,020
7	4-3-49		10-31-49		154,157	139,883	12,651	880	59,461	1,061	10,905	55	74	16		1,288	1,462	4,057	105,369
8	11-1-48		10-31-49		127,054	104,085	9,941	2,008	4,499	42	1,954		36			45	513	3,812	22,908
9	4-23-49		10-31-49		28,563	15,533	5,018	2,240	6,168	62	250							501	14,833
23	3-12-49		11-9-49		145,127	48,979		42,649											42,649
47	No Report				E.190,000	E.135,000		E.130,000											130,000 E
48	5-1-49		11-12-49		19,567	5,000		4,600											4,600
64	11-1-48		10-31-49		273,692	202,365	40,569	31,356	40,495	125	856	4,864	14,069	11,673	0	165	26,687	5,256	176,115
65	5-15-49		10-30-49		14,434	8,866*	1,299	230	327	16	30	14	81	1			1,117	161	3,296*
TOTALS					2,477,946	1,785,052	315,452	315,527	453,352	6,113	39,751	50,673	124,745	79,370	6,800	4,935	138,181	39,414	1,574,313

* 5,000 Acres in Weber # 1,865

R E P O R T

To: M. C. Hinderlider, State Engineer

Submitted by: A. Ralph Owens, Special Deputy State Engineer

November 25, 1949

The activities, for the past year, have again been somewhat varied. During the winter months some time was given to compiling the annual stream flow records. A portion of June was devoted to stream gaging, and late in the summer assistance was given in the repair of several gaging stations.

Early in the spring it was anticipated that trans-mountain diversions would be the maximum amounts available. Unexpectedly high May and June run-off on the eastern slope changed the picture--most trans-mountain diversions closing the greater part of June. Trans-mountain diversions visited include: Columbine, Bob Creek, Deadman, Michigan, Cameron Pass, Laramie Poudre Tunnel, Skyline Fraser, Vasquez, Berhoud Pass, and Williams Fork.

Charts from trans-mountain diversions to the South Platte were worked up and discharges recorded as rapidly as charts were received, in order to permit the Division Engineer to properly distribute the foreign water.

Further assistance was given the Division Engineer in field investigations, and in the office when he was in the field.

Water District No. 48

Several trips were made to the Laramie River for the purpose of

assisting Water Commissioner Mosier under the U. S. Supreme Court ruling. On each of these trips the individual rancher's diversion and unused balance were computed. Due to a rather wet growing season, there was a substantial unused balance; and after the hay crop was cut some fall irrigating was done. It will be interesting to observe whether this post season irrigation will have any carry over value on next seasons crop.

After Water Commissioner Mosier's death the seasons records were completed in this office.

Water District No. 51

The hay crop was probably slightly above average, and substantially better than 1948 both as to quality and quantity. Lettuce and spinach areas were about as for last year.

Generally the water supplies were adequate to above for all streams in the area. One instance of shortage was called to the attention of the Special Deputy, it being a diversion from the Fraser River downstream from the City of Denver's intake. It was found that the owner had done a small amount of work with a bull dozer at the point of diversion, and at the time of inspection was wasting several second feet of water back to the stream.

A General Adjudication Proceeding scheduled in the District Court is still pending. It is hoped that this proceeding will be heard soon, as a number of old ditches in the area have never been adjudicated.

Several ditches divert water from the Colorado River below the Granby Reservoir and above the confluence of this stream with the Fraser River. Some work has been recently performed on diversion dams for these ditches, in anticipation of the future small flow that is expected in the

Colorado River. Since these ditches will be almost entirely dependent upon releases from the reservoir, it appears that both the individual owners and the U. S. B. R. will be vitally interested in accurately measuring the amounts of water diverted. With this thought in mind an investigation of conditions of the intakes of these ditches has been made, and the results of findings are attached, together with suggested recommendations.

Two priority lists have been prepared, one from decrees on file in this office, and one which Water Commissioner Bloye has compiled, partly from decrees on file in the office of the Clerk of the District Court. These have been compared, and it appears that the file in our office is incomplete. This will be investigated fully during the next several months and our file corrected.

A water-users protective association has been formed. It is understood that Carl Breeze, Willard Taussig, and John Barnard are directors and the responsible members of the organization. It is believed that there is a definite need for such a group, to work out with the U. S. B. R. the numerous problems that will arise from their different interests. It further seems fitting for this office to work with a local association of water users where ever proper, to assist not only the association, but to aid the individual water users wherever possible. This will engender a general feeling of trust and confidence in the State Engineer.

Litigation involving water users in this district, the U. S. B. R. and the Northern Colorado Water Conservancy District has been commenced. The status of this case is not definitely known at this time.

Respectfully submitted


Special Deputy State Engineer

DIVISION OF WATER RESOURCES
OFFICE OF STATE ENGINEER OF COLORADO

FIELD SURVEY REPORT

Irr. Div. No. 1. Water Dist. No. 51

Name of Ditch Coffee McQueary

Source of Supply Colorado River Creek
River

Decree: Priority No. 187 Date 5-18-90 Amount s.f. 23.00
251 4-30-08 9.145

~~FX~~

Location Intake: S. 15 Twp. 2N R76 L. bank of stream.

Headgate: Wood, ~~Masonry, or Concrete?~~ Net width.....ft. Depth.....ft.
Condition Fair operating condition and probably adequate short distance
Locking Device Yes.....No. X below intake.

Wing-type River Cable

Diversion Dam: ~~Wood, Masonry, or Concrete?~~ Approx. Ht. 4 ft.
Length 300+ ft. Condition Substantial and probably adequate.
Waste Gates Yes.....No. X Location in Dam None

Wasteways above R.F.: Number.....Location.....ft. above R.F. None

Kind of Measuring Device: Parshall, rectangular, weir? Width.....ft. None
Location below headgate.....ft. Satisfactory Yes.....No.....
Automatic Recorder Yes.....No.....Type.....
Satisfactory Yes.....No.....

Maximum capacity of ditch 40 ⁺ s.f.

Critical Rate of Diversion 23 and possibly 32 s.f.

Anticipated amount to be diverted from:
Adams Tunnel Water.....Max. s.f.
Other Transmountain Water.....Max. s.f.
Reservoir Water.....Max. s.f.
Exchange Water.....Max. s.f.

Owner R. E. Selak, Winnifred Huggins Address A.E. Dietrich

Secretary..... Address.....

Remarks relative to other conditions: 2nd diversion below Granby Reservoir.

Recommendations: This ditch should install a Parshall measuring flume near the intake.

Report by A. Ralph Jones

Date 11-28-49

Title Special Deputy State Engineer

DIVISION OF WATER RESOURCES
OFFICE OF STATE ENGINEER OF COLORADO

FIELD SURVEY REPORT

Irr. Div. No. 1. Water Dist. No. 51

Name of Ditch Selak Larrabee

Source of Supply Colorado River Creek
River

Decree: Priority No. 174 Date 5-15-88 Amount s.f. 7.75 - 8-3-11
35 10-6-40 7.00 10-1-43

Location Intake: S 20 Twp. 2N R. 76W L. bank of stream.
and Sandbags

Headgate: Wood, Masonry, or Concrete Net width.....ft. Depth.....ft.
Condition Very poor at intake
Locking Device Yes.....No X
Wing-type River Cobble

Diversion Dam: Wood, Masonry, or Concrete? Approx. Ht. 3 ft.
Length 60 ft. Condition Substantial (some recent work)
Waste Gates Yes.....No X Location in Dam (Natural overflow in high water)

Wasteways above R.F.: Number.....Location.....ft. above R.F. None

Kind of Measuring Device: Parshall, rectangular, weir? Width.....ft. None
Location below headgate.....ft. Satisfactory Yes.....No.....
Automatic Recorder Yes.....No.....Type.....
Satisfactory Yes.....No.....

Maximum capacity of ditch 10⁺ s.f.

Critical Rate of Diversion.....s.f.

Anticipated amount to be diverted from:
Adams Tunnel Water.....Max. s.f.
Other Transmountain Water.....Max. s.f.
Reservoir Water.....Max. s.f.
Exchange Water.....Max. s.f.

Owner Winnifred Huggins-R.E.Selak Address.....

Secretary..... Address.....

Remarks relative to other conditions: A slow ditch - light grade intake,
approximately 1/4 mile below mouth of Willow Creek.

Recommendations: This ditch should install a Parshall measuring flume near the
intake, and a suitable headgate

Report by A. Ralph Owens

Date 11-28-49

Title Special Deputy State Engineer

DIVISION OF WATER RESOURCES
OFFICE OF STATE ENGINEER OF COLORADO

FIELD SURVEY REPORT

Irr. Div. No. 1. Water Dist. No. 51.

Name of Ditch Spitzer Highline

Source of Supply Colorado River Creek
River

Decree: Priority No. 216 Date 11-16-00 Amount s.f. 5.00 - 8-3-11
28 6-1-08 2.50 11-5-37

Location Intake: S. 14 Twp. 2N R. 76 ~~W~~ ^{R.} bank of stream.

Headgate: Wood, ~~masonry or concrete~~? Net width ft. Depth ft.
Condition Fair to poor condition - Probably adequate for past operation
Locking Device ~~Yes~~ ^{No} X

Wing-type of River Cobbles
Diversion Dam: ~~Wood, masonry, or concrete~~ Approx. Ht. 3 ft.
Length 300+ ft. Condition Probably fully adequate
Waste Gates Yes X ~~No~~ Location in Dam Immediately adjacent to intake

Wasteways above R.F.: Number Location ft. above R.F. None

Kind of Measuring Device: Parshall, rectangular, weir? Width ft. None
Location below headgate ft. Satisfactory Yes No
Automatic Recorder Yes No Type
Satisfactory Yes No

Maximum capacity of ditch 20 + s.f.

Critical Rate of Diversion 7.50 s.f.

Anticipated amount to be diverted from:
Adams Tunnel Water Max. s.f.
Other Transmountain Water Max. s.f.
Reservoir Water Max. s.f.
Exchange Water Max. s.f.

Owner Y.M.C.A. and others Address

Secretary Address

Remarks relative to other conditions:

Recommendations: This ditch should install a Parshall measuring flume near
the intake, and headgate structure repaired.

Report by Ralph Owens
Special Deputy State Engineer

Date 11-28-49

Title