

1741
Glenwood Springs, Colorado

November 30, 1949

Mr. M. C. Hinderlider

State Engineer

Denver, Colorado

Dear Sir:

In compliance with the provisions of law, I transmit herewith my annual report as Division Engineer for Irrigation Division No. 5 for the year ending November 30, 1949.

Major developments are being predicted for this area. The Forest Service is advertising for bids on beetle infested spruce which is excellent for the making of paper pulp. It is estimated that there is enough of this timber in the area to keep one 200 ton mill going for 20 years. The mill will cost in the neighborhood of \$18,000,000 and is to be located on the Colorado River somewhere in the vicinity of New Castle. It is believed that some 4000 to 5000 people will be attracted to the area.

In the more distant future it is estimated that some 300,000 to 350,000 people will come into the area to support the Oil Shale Industry as it develops. It is estimated that should this industry be called upon to supply 20% of the

petroleum needs of the United States, the industry will have an annual consumptive use of 2896,000 acre-feet of water and another 50,000 acre-feet will be needed for domestic purposes.

Shadow Mountain Lake was filled this season, which made it possible to divert through the Adams Tunnel the natural runoff into Grand Lake and Shadow ^{Mountain} ~~Mountain~~ Lake. This totaled 17,517 acre-feet for the season as against 9,255 acre-feet during 1948 when only the runoff into Grand Lake was divertable. Due to water being released at Green Mountain Reservoir for power purposes it was unnecessary to call for irrigation releases to compensate for the amount being diverted by the Adams Tunnel.

Water was released from Williams Fork Reservoir into the Colorado River on September 4 and continued to flow until September 15 during which time 5246 acre-feet was released. This water was used for both irrigation and power.

Livestock fared very well and the spring increase of cattle and sheep was very good with little loss resulting from the severe spring weather conditions. During August and September pastures and ranges dried rapidly. Livestock were in very good condition but due to rapidly deteriorating ranges, heavy shipments to markets had started by the last of August.

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With an unusually large apple crop throughout the nation the local growers had difficulty in selling their fruit at profitable prices this season.

About 2,150 carloads of peaches were shipped from Palisade this season. Prices ranged from \$1.75 to \$2.50 per bushel according to size. This year's crop was smaller, but of much better quality.

The Potato crop turned out better than expected, yield was about normal, but acreage was the lowest in several years.

There was a small increase in cereal acreage this season, with a yield above the normal. Some extremely high yields were reported by dry land farmers.

Alfalfa and natural grasses were about normal as to acreage and yield.

WEATHER

The weather conditions for the month of May were unfavorable for ranching and farming activities. The subnormal sunshine and low temperatures delayed plant growth. Temperatures, during the first ten days of June remained below normal therefore delaying most crops from ten days to two weeks.

Temperatures were above the normal during the month of August, and precipitation was below normal.

Due to low temperatures during May and June streams remained below normal ^{causing} many junior water rights to be without irrigation water until about the 10th of June. *causing 7/9 resulting in*

*W. C. ...
Landing*

Irrigation Division No. 5 is made up of 3 main sections so far as crops and climatic conditions are concerned: one section from DeBeque to Glenwood Springs in which alfalfa, natural grasses, cereals, sugar beets, and ~~potatoes~~ are grown; another section, from Glenwood Springs to Kremmling and Aspen in which alfalfa, natural grasses, cereals, and some vegetables are raised; the 3rd section is that above ~~6000~~ feet elevation where natural grasses, cereals, spinach and lettuce are the main crops.

The following table gives temperatures, precipitation and other data as recorded in the above described sections. Rifle is located in the lowest, Eagle is in the intermediate, and Green Mountain is in the section above 7000 feet elevation.

	TEMPERATURE					PRECIPITATION					
	Elevation	Departure from normal	Higest	Lowest	No. of Days		Total	Departure from normal	No. of Days		
					90° or above	32° or below			.01 or more	.25 or more	1.00 or more
<u>May</u>											
Green Mountain Dam	7760	-.2	78	25	0	16	1.62	.25	15	4	0
Eagle	6497	1.9	82	26	0	15	1.06	-.13	11	1	0
Rifle	5500	.2	84	33	0	0	.29	-.71	3	0	0
<u>June</u>											
Green Mountain		1.2	80	27	0	2	2.62	1.40	15	4	0
Eagle		1.7	86	27	0	2	2.52	1.75	16	5	0
Rifle		-2.0	91	36	2	0	.80	.25	9	1	0
<u>July</u>											
Green Mountain		-.90	83	39	0	0	2.29	1.16	16	2	0
Eagle		2.0	94	38	2	0	1.11	.13	8	0	0
* Rifle											
<u>August</u>											
Green Mountain		-.6	82	28	0	1	.91	-.35	12	0	0
Eagle		.5	92	31	5	2	.80	-2.80	9	0	0
Rifle		1.4	98	47	16	0	1.09	.01	6	2	0
<u>Sept.</u>											
Green Mountain		-.5	78	25	0	12	.78	-.10	12	0	0
Eagle		.6	89	21	0	15	1.27	.17	7	2	0
Rifle		-.2	90	30	1	3	1.51	.22	7	1	0

SNOW REPORT

The following table shows the snow depth and water content of 29 snow ^{courses} courses for the year 1949 in the Colorado River Drainage Basin within Irrigation Division No.5; also the water content for the first of February, March, April, and May for the years 1946, 1947, 1948, 1949, and the average for the past thirteen years.

	Snow Depth inches	Water Content				Thirteen Year Avg.
		1949	1948	1947	1946	
Feb.	41.8	11.2	9.5	8.5	9.7	8.1
Mar.	44.4	13.5	11.8	12.1	10.2	11.1
Apr.	55.5	16.8	16.1	16.4	11.6	14.3
May	33.7	12.1	14.8	17.2	6.1	13.2

STREAM FLOW FORECASTS
May 1, 1949

	Acre Feet Forecast	April-September Incl. Streamflow Measured Runoff			10 Year Avg. 1938-1947
		1948	1947	1946	
Colorado River at Glenwood	1,500,000	1,477,000	1,880,000	1,148,000	1,473,000
Roaring Fork at Glenwood	900,000	887,000	1,008,000	635,000	754,000
Totals	2,400,000	2,364,000	2,888,000	1,783,000	2,227,000

ADMINISTRATION COSTS

Cost of administration of Division No.5 for the year of 1948 was \$10,010.00 This includes salaries of all commissioners and their deputies. 145,676 acres were irrigated at a cost of .068 cents per acre for services of Water Commissioners and deputies.

DISTRICT No.	ACRES IRRIGATED	MILES TRAVELED	COM. & DEP. FEES
56	8,400	...	...
57	16,815	4,494	\$1,275.00
58	33,744	10,350	1,090.00
59	20,729	12,405	1,989.00
45	22,625	15,016	3,089.00
50	9,100	2,047	255.00
51	16,071	621	188.00
52	5,651	410	104.00
55	5,925	2,429	467.00
70	<u>8,616</u>	<u>8,654</u>	<u>1,578.00</u>
TOTALS	145,676	49,095	10,010.00

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TRANS-MOUNTAIN DIVERSIONS

Following is a report of the Trans-Mountain Diversions from
Division No.5 to Division No.1 and Division No.2 for the irrigation
Season:

TO DIVISION No.1			
Adams Tunnel	11-15-48	to 16-1-49	17,517 Acre Feet
Grand River	5-22-49	to 9-19-49	17,194 " "
Berthoud	6-26-49	to 8-26-49	416 " "
Eureka	6-21-49	to 9-10-49	106 " "
Jones Pass	6- 1-49	to 9-16-49	1,896 " "
Moffat Tunnel	4-27-49	to 11-2-49	24,841 " "
East Hoosier			0 " "
West Hoosier			0 " "
Boreas Pass	7- 4-49	to 7-25-49	94 " "
		TOTAL	<u>61,864</u> " "

TO DIVISION No.2

Twin Lakes Tunnel	39,015	Acres	Feet
Buck Ivanhoe Tunnel	4,480	"	"
Ewing Ditch	1,520	"	"
Wurts Ditch	2,771	"	"
Columbine Ditch	0	"	"
Fremont Pass Ditch	0	"	"
	<u>TOTAL</u>	<u>47,586</u>	" "
	<u>GRAND TOTAL</u>	<u>109,450</u>	" "

Very truly yours,

Irr. Division Engineer
Division No. 5

TABULATION OF WATER COMMISSIONERS ANNUAL DITCH REPORTS FOR IRRIGATION SEASON OF 1949 IRRIGATION DIVISION No.5

District No.	No. of Ditches Reported	First Day Water Was Used	Last Day Water Was Used	Average No. of Days Water Was Used	Average Daily Amt. Diverted in Sec. Ft.	No. of Acre Feet Used from Stream
56	...	...	...	...	...	...
57	181	Apr. 26	Oct. 25	182	464.15	112,661
58	115	May 1	Oct. 1	155	864.01	218,934
59	150	Apr. 1	Nov. 1	214	354.40	150,755
45	107	Apr. 15	Nov. 1	199	371.93	55,020
50	...	...	...	...	...	...
51	85	May 1	Sept. 15	138	608.29	138,514
52	...	...	...	...	...	...
55	60	May 1	Oct. 20	175	105.70	50,667
70	60	Apr. 1	Nov. 1	214	186.15	57,534
Total	756	Apr. 1	Nov. 1	182	2954.63	751,885

District No.	No. of Acres that can be Irrigated	Alfalfa	Natural Grasses	Cereals	Orchards	Market Gardens
56	11,500	...	...	...	...	...
57	19,486	9,761	3,634	2,488	...	...
58	35,754	19,368	6,505	5,883	...	...
59	26,095	10,928	3,282	4,455	483	234
45	10,600	12,036	5,021	5,090	202	26
50	21,400	...	...	...	...	...
51	12,041	...	15,457	360	...	53
52	5,811	...	...	...	...	...
55	5,925	1,170	2,875	285	...	...
70	16,775	4,865	2,072	1,537	1	...
Total	163,587	58,128	38,846	20,098	686	293

District No.	Potatoes	Sugar Beets	Other Crops	Peas
56	...	...	...	...
57	764	...	10	158
58	1,288	...	...	...
59	859	488	...	...
45	55	60	135	...
50	...	...	...	...
51	...	...	...	...
52	...	...	...	...
53	25	...	205	...
70	27	...	114	Y...
Total	8,718	548	464	158

District No.	Lettuce	Spinach	Pasture	Total Irrigated
56	8,400
57	16,815
58	33,744
59	20,729
45	22,625
50	9,100
51	181	40	...	16,071
52	3,651
53	1,365	5,925
70	8,616
Total	181	40	1,365	145,676