

1945

STATE OF COLORADO

IRRIGATION DIVISION NO. 4

MONTROSE

December 1 1945.

FRED S. HOTCHKISS
IRRIGATION DIVISION ENGINEER
ROOM 7, COURT HOUSE
P. O. BOX 15

Mr. M. C. Hinderlider,
State Engineer,
Denver, Colo.

Dear Sir:

Herewith I enclose my annual report for 1945.

Soil moisture conditions in the fall of 1944 were below normal. Snowfall as determined by surveys on the watersheds of the tributaries of the Colorado River in this Division were normal or slightly below the average for the months of February and March, but the May 1 report showed an excellent improvement, and while the snow depths did not equal those of the record year of 1944 they were much above the average of the period of record.

Precipitation as indicated by reports from the Montrose station was erratic, as shown by the following table for the months of January through October:

Month.	Precipitation, Ins.	
	1945	Mean
January	0.40	0.60
February	0.55	0.57
March	0.35	0.80
April	2.01	0.93
May	0.91	0.90
June	0.09	0.44
July	0.32	0.83
August	1.52	1.30
September	0.26	1.08
October	1.14	0.97

The most heavily burdened watershed area so far as storage demands are concerned is Grand Mesa, where the large number of storage reservoirs always takes a large percent of the early runoff. Fortunately the runoff per square mile is among the highest of any in the State, and probably averages two or three times as much as that in the watershed of Taylor Park, or other areas near the Continental Divide.

The Taylor Park Reservoir, largest in this Division, with a storage capacity of 106,200 acre feet, had a holdover of about half its capacity, with a storage of 56,000 acre feet on February 1, so there was never any question of its filling to capacity. Total carryover of the reservoirs in Water District No. 40 was nearly 7400

acre feet, a little more than 18 percent. That in Water District No. 42 may be said to have been nominal only, as demand in that area is always for the full storage. The Taylor Park Storage was not used at all until the last of July, but the amount of release was very small until early September when it was increased to 625 second feet for about two weeks, then cut down progressively until October 10, when all release for irrigation was discontinued, leaving a holdover of about 76,000 acre feet, with a net release for the season of about 30,000 acre feet.

The following very comprehensive report of Manager Jesse R. Thompson of the Uncompahgre Valley Water Users' Association gives a very clear statement of the operation of Uncompahgre Valley Project, largest single irrigation system in this Division:

UNCOMPAHGRE PROJECT COLORADO.

Season 1945

Under the terms of the contract between the Bureau of Reclamation and the Uncompahgre Valley Water Users' Association approved August 4, 1931, the Operation and Maintenance of the Project was taken over by the Association on January 1, 1932.

The Project irrigation system includes 568 miles of irrigation canals and 204 miles of drainage canals.

It requires 1600 second feet of water entering the Project to meet requirements during periods of peak demand.

The water content of the snowfall on the Uncompahgre watershed on March 1, 1945 was 83.5 % of the normal content for March 1 for the period of record. On April 1, 1945 the water content was 79.2 % of the content for April 1 for the period of record. On May 1, 1945 the water content was 129.9 % of the normal content for May 1 for the period of record.

From the above record you will note that on May 1, 1945 the water content was far above normal whereas on both March 1 and April 1 the water content was well below normal. The high water content on May 1 was due mostly to cold spring weather with low runoff. The late spring runoff, coupled with excessive rains in the mountains, at the headwaters of both the Uncompahgre and Gunnison rivers during July and August, served to make 1945 one of the best years, as far as water supply was concerned, in the history of the project.

The peak discharge of the Uncompahgre River during the season of 1945 was 1820 second feet and occurred on June 22, 1945. Rains in the high watersheds the latter part of July and the first half of August kept the discharge high for that time of year, the discharge ranging from 325 to 700 second feet. Average discharge for the first 15 days of August ranged from 490 to 717 second feet. From August 15 to the end of the month there was a gradual decline in runoff, the Uncompahgre carrying 166 second feet at the end of the month,

Taylor Park Reservoir filled and water started over the spillway at 11:00 A.M. on June 18, 1945.

Water was turned through the Gunnison tunnel at 5:00 P.M. on March 6, 1945.

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The main purpose of turning water through the tunnel at this early date was to wash mud and alkali out of the concrete sections of the South Canal and thereby reduce concrete disintegration caused by alkali action. Enough water was left running to furnish stock water and meet early irrigation needs of farms supplied direct from the South Canal. Water was needed to supplement the flow of the Uncompahgre river from April 1 to the end of the irrigation season. However, rains in the high water sheds of Gunnison River increased its flow until very little supplemental storage water was needed until September 2. From September 2 to September 8 the discharge from the reservoir was increased to 625 second feet, and remained at this amount until September 21 at which time the discharge was reduced to 496 second feet. This discharge was reduced from time to time until October 10, 1945, at which time the discharge for irrigation purposes was shut off for the season. Fifty (50) second feet was left running to sustain fish life.

Due to limited capacity of the Gunnison Tunnel it was not possible to divert enough water to meet project demands throughout the irrigation season. The demand, on some canals and laterals, exceeded capacity at times and deliveries had to be made on a percentage basis. During a part of both July and August the supply did not quite meet demands and water had to be delivered on a percentage basis. Percentages were as low as 90 % for a few days, but mostly ranged from 100 % to 125 %.

Water was delivered on demand to the Water Users on an acre foot basis. The lands generally on the West side of the Uncompahgre River were furnished 5 acre feet for a minimum charge of \$2.00 per acre. Lands generally on the east side of the Uncompahgre river, which consists mostly of adobe soils, were furnished 4 acre feet for a minimum charge of \$1.60 per acre. Excess water was furnished at a rate of 12 cents per acre foot for all water received in excess of 5 acre feet per acre.

No major operation difficulties were experienced during the season of 1945.

No. 2 needle valve at Taylor Dam was dismantled, cleaned and repaired.

No operation difficulties were experienced in connection with the Gunnison tunnel. Water was out of the tunnel at 8:00 P.M. March 18 to allow maintenance crews to place bulkhead at adit at East Portal and clean fallen rock out of tunnel. Work was completed and water turned back in at 5:00 P.M. March 19. Water was again turned out of the tunnel at 7:00 P.M. June 25 to allow for inspection of the Gunnison tunnel and South Canal. No serious trouble was found and water was turned back in at 6:00 P. M. June 26. Water was cut out of the Gunnison tunnel at 6:30 A. M. August 10, to install a baffle at the West Portal rating station. The work was completed and water turned back in at 10:30 A.M. Due to heavy rains throughout the valley, the water was not needed for irrigation purposes.

Crop production in general was normal or above. Loss of onion seed due to thrip was about 60 %. Loss on dry onions about 30 %. During the peak of potato harvest, most potatoes were going on the market as seconds due to disease. Worms appearing in beans after they were shocked carried a loss of about 30 %.

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Mr. Fred Hotchkiss, Division Irrigation Engineer for the State of Colorado, in this district, handled the distribution of waters in this part of the State. We appreciate the impartial way in which he handled the distribution of these waters,

(Signed)

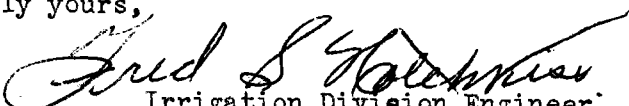
Jesse R. Thompson.
Manager- Treasurer

Crop conditions have been good, and yields in most cases excellent. A severe late freeze damaged the fruit crop, especially apricots, but the principal fruits, peaches and apples, produced well, and prices were the highest of record. First grade apples sold for \$145.00 per ton. It was formerly thought that \$30.00 was a good price. Of course wages and supplies of all sorts were scarce and high. In Delta, Montrose and Mesa Counties German prisoners of war were used, also some Jamaicans and Mexican Nationals. Notwithstanding labor shortages very little if any loss through delays in harvesting were reported. August and September rains damaged hay to some extent.

For a number of years it has been impossible to get necessary equipment and labor to repair the many small reservoir dams in some areas. These dams were in most cases built many years ago by water users who were poorly equipped and with inadequate financial backing to do the work. Usually engineering advice and supervision was conspicuous by its absence. Conduits were generally made of wood, either hewn logs or planks. Access roads were frightfully rough and steep, and local concrete aggregates were of very poor character, and any concrete materials had to be hauled long distances in wagons. The principal asset was the energy and enterprise of the builders, and what was accomplished with all these handicaps will remain as a monument to these qualities of the pioneers. But while there have been surprisingly few failures of these dams the steady deterioration of these structures has been an increasing worry to this department and there is a growing conviction among the owners that rehabilitation of these dams is necessary if disaster is to be averted. Work has already begun in a small way to do this. Systems for which plans are being made and financing being arranged are the Surface Creek Reservoirs on Grand Mesa, the Englehart Reservoir on Big Creek, the Overland Reservoir on the watershed of the North Fork of the Gunnison, and the Buckeye Reservoir which supplies water for the Paradox Valley in District 61 from streams coming from the La Salle Mountains in Utah. In all these it is proposed to enlarge to the economic limit as well as to make substantial and permanent repairs. The Gurley Reservoir which supplies water for late season use in the large and fertile area around Norwood and Redvale in District 60 is also under consideration for enlargement, either by the owners or as a Bureau of Reclamation project.

Herewith I enclose a tabulation of Water Commissioners annual reports.

Very truly yours,


Irrigation Division Engineer.
Irrigation Division No. 4.

IRRIGATION DIVISION NO. 4

TABULATED STATEMENT OF WATER COMMISSIONERS' ANNUAL DITCH REPORTS

1945

Dist. No.	Ditches Reported	Amt. of Appropriation Second Feet	Capacity of Canals or Ditches Second Feet	No. Acres can be Irrigated
28n	192	319	1,000	29,253
40	475	3,090	4,308	227,590
41	99	1,873	2,709	111,224
42	301	3,324	4,220	160,268
59n	99	680	2,109	24,031
60n	212	1,219	1,252	90,960
61	7	86	75	11,400
62n	75	313	799	18,905
68	<u>150</u>	<u>605</u>	<u>615</u>	<u>24,508</u>
Totals:	1,610	11,509	17,087	698,139

Note: Districts with suffix, "n", no commissioner's report; estimate by Division Engineer.

DISTRICT NUMBER	FIRST DAY WATER WAS USED	LAST DAY WATER WAS USED	AVERAGE NO. OF DAYS WATER WAS USED.	AVERAGE DAILY AMOUNT IN SECOND FEET	NO. ACRE FEET USED
28n	May 1	Aug. 1	86	674	111,476
40	Apr. 1	Oct. 31	129	1,657	427,433
41	Mch. 10-	Oct. 31	211	1,534	649,079
42	Mch. 10	Oct. 31	175	1,783	629,200
59n	May 1	Oct. 10	83	1,538	255,461
60n	Apr. 1	Oct. 31	124	429	106,193
61	Apr. 17	Oct. 22	156	25	7,894
62n	Apr. 15	Oct. 31	106	515	108,676
68	May 13	Oct. 20	79	<u>391</u>	<u>61,892</u>
Totals:				8,546	2,361,304

Note: Districts with suffix "n", no commissioner's report; estimate by Division Engineer.

IRRIGATION DIVISION NO. 4.

TABULATED STATEMENT OF WATER COMMISSIONERS' ANNUAL CROP REPORTS.

1945

Dist. No.	Alfalfa	Natural Grasses	Cereals	Orewards	
28n	93	29,101	31	--	
40	52,710	27,324	20,612	13,394	
41	18,854	4,013	22,087	1,000	
42	27,664	14,356	14,450	4,113	
59n	119	21,058	8		
60n	14,776	13,134	14,289		
61	880	1235	841	19	
62n	1,430	7,838	1,699	30	
68	7,140	14,753	1,061	95	
Totals:	123,846	132,810	75,065	18,651	

Dist. No	Market Gardens	Potatoes	Sugar Beets	Other Crops	Total Irrigated
28n	1	27		29,263	29,263
40	787	2,304	4,449	28,636	160,216
41	753	2,961	1,795	25,284	76,747
42	589	1,366	1,101	51,437	115,076
59n		68		118	21,368
60n	23	9		256	42,467
61				65	3,020
62n	30	1,047		2,557	14,629
68	4	111	55		23,219
Totals:	2,187	7,893	7,400	108,353	475,995

Note: n- no commissioner's report. Estimated by Division Engineer.

IRRIGATION DIVISION NO. 4

TABULATED STATEMENT OF WATER COMMISSIONERS' ANNUAL RESERVOIR REPORT

1945.

DIST. NO.	NO. IN DIST.	AREA OF HIGH WATER LINE, ACRES	CAPACITY IN ACRE FEET	QUANTITY OF WATER IN RESERVOIR MAY 1	QUANTITY OF WATER IN RESERVOIR NOV. 1
40	153	3,678	48,218	38,961	7,387
42	74	1,988	17,760	14,191	-----
59	1	2,033	106,200	75,000	76,000
60	2	392	4,861	1,200	660
Totals:	230	8,091	177,039	129,352	84,047

DIST. NO.	FIRST DAY WATER WAS USED	LAST DAY WATER WAS USED	AVERAGE NO. DAYS WATER WAS USED	AVERAGE DAILY AMT., SEC. FT.	NO. ACRE FEET CARRIED
40	June 23	Nov. 1	48	315	29,964
42	June 23	Oct. 28	57	125	14,191
59	July 29	Oct. 10	73	205	30,000
60	June 20	Oct. 6	50	42	4,200
Totals:				687	78,355

Note: Above tabulation does not include storage and releases of reservoirs used for purposes other than irrigation.