

1945

Durango, Colo.
February 27, 1946.

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

Dear Sir:

Herewith is the annual report for 1945 with the
tabulations of water commissioners annual ditch and reservoir
reports.

Respectfully yours,

J. R. Williams
Irrigation Division Engineer.

ANNUAL REPORT OF DIVISION ENGINEER.

IRRIGATION DIVISION NO. 7.

1945.

WATER SUPPLY.

On April 1, 1945 the water content in accumulated snow on the San Juan and Dolores River watersheds was respectively 15.5 ins. and 12.8 ins., which in both areas was almost exactly equal to the average for the period of record of ten years snow study by the Department of Agriculture and Cooperating Agencies. On the first day of May the water content was respectively 16.4 and 7.5 ins. which was twenty percent above the mean for that time of year.

PRECIPITATION.

Tabulation.

(Station)

Month	Durango		Fort Lewis		Cortex		Ignacio		Pagosa Sprgs	
	Prec.:	Dep.:	Prec.:	Dep.:	Prec.:	Dep.:	Prec.:	Dep.:	Prec.:	Dep.:
	Ins.:	Ins.:	Ins.:	Ins.:	Ins.:	Ins.:	Ins.:	Ins.:	Ins.:	Ins.:
April	1.12	-0.40	1.24	-0.19	0.62	-0.91	1.03	-0.21	1.45	-0.36
May	T.	-1.09	0.15	-0.88	0.05	-0.86	0.00	-0.94	0.14	-1.19
June	0.18	-0.64	0.28	-0.52	0.17	-0.45	0.04	-0.86	0.20	-0.89
July	0.57	-1.43	0.86	-1.34	1.19	-0.44	0.83	-1.12	0.73	-1.75
August	1.52	-0.58	1.55	-0.69	1.27	-0.45	1.25	-0.83	2.82	+0.30
Sept.	0.80	-1.17	0.22	-1.76	0.60	-1.21	1.06	-0.62	0.74	-1.34
Total	4.19	-5.31	4.30	-5.38	3.90	-4.32	4.21	-4.58	6.08	-5.23
% Dep.		-56		-56		-53		-52		-46
Mean Departure	-52 percent.									

In the beautiful San Juan country it didn't rain to speak of from the 28th. day of April until the 2d. day of August, a period of ninety five days. During the May- June period the average rainfall as recorded at the U. S. Weather Stations shown in the preceding table

was approximately ten percent of the average. For the May- July period it was nineteen percent at Durango with an average of twenty seven percent and as shown the average over the area was forty eight percent for the entire growing season.

TEMPERATURES.

The month of June was exceedingly cold. The departure from normal was minus six degrees. It froze ice twenty three nights during the month in the farm areas near Durango. The latest freeze was on June 30th.

STREAM FLOW.

From an expectancy of adequate supply or stream discharge as indicated by snow measurements, owing to the lack of precipitation and adverse or low temperatures combined with windy days the situation changed adversely. Depletion of ground water tables during the late summer and fall of 1944 also affected the surface runoff in 1945. The result was a deficiency of twenty percent during the May- July period and a greater deficiency during the balance of the summer. In areas not having supplemental water in storage the water situation became critical and in many areas was not sufficient to replenish or fill stock water tanks or cisterns for household use.

CROPS.

Owing to reasons already assigned as contributing to deficient stream flow the crop growth was seriously retarded. First cuttings of alfalfa were short. Grain yields were generally about fifty percent of average. Pastures and ranges suffered. The situation was somewhat better during August because of rains but was again very dry during September. In areas where adequate reservoir water was available for late use, particularly the Pine River and Montezuma Valleys, the late crops were good.

USE OF WATER.

There was diverted from the streams a total of 498,000 acre feet of water for irrigation of which 50,000 acre feet was released to the streams from reservoirs above the points of diversion. The total use from storage was 70,070 acre feet.

ACRES IRRIGATED.

From streams and reservoirs there was irrigated a total of 154,400 acres of which 6,960 acres were served by storage only. This was an increase of about 7,000 acres over the preceding year. The increase as reported by water commissioners was in alfalfa and wheat crops principally in Water District No. 31 where there was an increase of 6,500 acres under the Vallecito Reservoir. Such lands received water by enlargements and extensions of existing laterals.

REPAIRS AND IMPROVEMENTS.

Because of continuing labor and material shortages, only necessary repairs were made to diversion structures. Under cooperative engineering and supervision by this office the Sullivan Ditch Co. replaced a wood flume with 120 feet of thirty inch metal pipe. The La Plata River and Cherry Creek Ditch Company built a concrete wasteway and control with two thirty six inch steel headgates installed for regulation. Other principal repairs consisted of repair of the plank face of Cascade Dam by The Western Colo. Power Company. A section one hundred feet in length and twenty feet in height was replaced this year. There remains three hundred fifteen feet of facing to repair on this dam of a total length of seven hundred and twenty five feet. In the Mancos area the Bauer Lakes Water Company have entered into a contract with the U. S. Soil Conservation Service for the repair of earth dikes at Bauer Lake Dams Nos. 1 and 2. Such work is being done in accordance with plans approved by the State Engineer some years past. The same governmental agency built several small water tanks with

earth dams, rebuilt the East Mancos Hiline Ditch and installed concrete headgate structure and measuring flume, installed headgate and measuring flume for the Beaver Ditch, have assisted many ditch owners in construction of controls for diversion and channel control. They also plan to consolidate all canals taking water from the Mancos Rivers near Mancos into about three main canals.

NEW CONSTRUCTION.

A small earth dam with rock face was built on Elbert Creek near Durango known as The Keeler Dam ~~was~~ to impound 490 acre feet of water for irrigation, domestic use and fish culture. Overall height is forty one feet, depth of water on outlet tube is thirty feet.

The owners of Red Mesa Ward Reservoir Dam commenced placing an earth blanket on the downstream face of the existing dam which will raise the dam fifteen feet and allow additional storage of six hundred fifty acre feet and will make the estimated capacity eleven hundred fifty acre feet. This additional water will be applied to lands in the Red Mesa area.

Both of these dams have been financed locally.

The Jackson Gulch Dam near Mancos which has been under construction for some years under supervision of The Bureau of Reclamation made some progress. The section for inlet canal was cleared and a part of the outlet tube placed. This project will probably be completed in the near future.

Tabulated Statement of Water Commissioners Annual Ditch Reports.

1945

Dist. No.	Amount Appropriated in Cu. Ft. Per Second	Capacity of Ditches (S.F.)	First Day Water Was Used From Natural Stream	Last Day Water Was Used From Natural Stream	Number of Days Water Was Used Natural Stream
29	* 589	* 639	No Report		
30	589	835	April 5	Nov. 15	224
31	767	925	May 1	Nov. 4	188
33	270	372	April 17	Sept. 30	137
34	806	840	April 1	Nov. 27	241
69	114	117	April 5	Oct. 3	154
Total	3135	3728	April 1	Nov. 27	241

Continued.

Dist. No.	Average Daily Amount Used (S.F.)	Number of Acre Feet Used	Total Number of Acres That Can Be Irrigated	Crops Irrigated (Acres)		
				Natural Alfalfa	Grasses	Cereals
29		* 75,000	* 43,000			
30	205.9	92,260	59,670	10,187	4,154	6,721
31	448.8	168,760	68,910	12,471	18,272	8,858
33	67.7	18,550	20,640	4,508	1,474	5,287
34	285.0	137,360	51,020	12,428	14,602	9,217
69	15.4	5,760	3,470	986	794	715
Total	1,033	497,690	246,730	40,580	39,296	30,798

* Estimated by Division Engineer.

Continued.

Dist. No.	Crops Irrigated (Acres)						Total Irrigated
	Orchards	Gardens	Potatoes	Beans	Clover	Other	
29	:	:	:	:	:	:	* 25,000
30	630	6	477	410	:	:	22,585
31	12	197	53	:	1,440	367	41,670
32	:	:	:	:	:	:	* 3,000
33	55	96	38	:	60	:	11,518
34	838	3	500	3,000	:	377	40,965
69	19	:	45	:	:	113	2,672
Total	1,554	302	1,113	3,410	1,500	832	147,410

* Estimated by Division Engineer.

Tabulated Statement of Water Commissioners Annual Reservoir Reports
1945.

Dist. No.	Number of Reservoirs	Area of High Water Line (Acres)	Capacity in Acre Feet	Quantity in Reservoirs		First Day Water Was Used From Reservoirs	Last Day Water Was Used From Reservoirs
				May 1st. (A. F.)	Nov. 1st. (A. F.)		
29	3	:	3620	No Report		:	:
			* 7765	* 238	* 174	:	:
30	3	899	**23,380	** 4,350	** 17,280	* July 20	Sept. 15
31	2	3,077	128,050	8,130	43,160	June 27	Oct. 31
33	1	37	560	560	0	June 27	Aug. 18
34	7	980	16,140	13,130	2,660	April 9	Oct. 22
69	2	672	21,810	9,020	8,540	July 17	Sept. 30
Total	18	5,665	191,325	35,428	71,814	April 9	Oct. 31

* For irrigation. ** For Power only at Cascade Dam.

Reservoir Reports Continued.

Dist. No.	Number of Days Used	Average Daily Amount Used	Number of Acres	Feet Used	Crops Irrigated (Acres)				
					Natural:	Alfalfa	Grasses	Cereals	Orchards
29	:	:	(a) 620	:	No Report	:	:	:	:
30	* 20	* 7.5	* 300	(b) 295	:	(b) 265	:	(b) 19	:
31	127	166	42,220	(c) 12,030	(c) 16,863	(c) 8,544	:	(c) 12	:
33	24	8.7	417	(c) 222	:	(c) 84	:	(c) 15	:
				(b) 2,300	(b) 775	(b) 2,388	:	(b) 177	:
34	130	71.1	18,500	(c) 8,200	(c) 12,000	(c) 5,750	:	(c) 700	:
69	50	80.1	8,010	(c) 70	(c) 30	(c) 120	:	:	:
Total	130	269	70,067	(b) 2,595	(b) 775	(b) 2,653	:	(b) 196	:
				(c) 20,522	(c) 28,893	(c) 14,498	:	(c) 727	:
				23,117	29,668	17,151	:	923	:

Continued.

Dist. No.	Crops Irrigated (Acres)					
	Gardens	Potatoes	Beans	Clover	Other	Total Irrigated
30	:	(b) 15	:	:	:	(b) 594
31	(c) 194	(c) 51	:	(c) 1,395	(c) 307	(c) 39,396
33	(c) 26	(c) 3	:	:	:	(c) 350
		(b) 80	(b) 650	:	:	(b) 6,370
34	:	(c) 400	(c) 3,000	:	:	(c) 30,050
69	:	:	:	:	:	(c) 220
Total	(b) 0	(b) 295	(b) 650	:	:	(b) 6,964
	(c) 220	(c) 454	(c) 3,000	(c) 1,395	(c) 307	(c) 70,016
	220	549	3,650	1,395	307	76,980

Note: (a) Estimated by Division Engineer.

(b) Crops irrigated from storage only. (c) Crops receiving supplemental water from storage reservoirs.