

J. E. WHITTEN
State Engineer

C. C. HEZMALHALCH
Deputy



1955
L. T. BURGESS
Chief Hydrographer

HARRY L. SITTSER, Jr.
Office Engineer

STATE OF COLORADO
OFFICE OF STATE ENGINEER
DIVISION OF WATER RESOURCES
DENVER 2

Durango, Colorado.
November 22, 1955.

SUBJECT:

Mr. J. E. Whitten
State Engineer
Denver, Colorado.

Dear Sir:

This is to submit the preliminary report of Division Engineer, Irrigation Division Number 7 for 1955.

A more detailed and complete report will be made when all the data is assembled.

Respectfully yours,

J. R. Williams
Division Engineer.

Preliminary Annual Report of Division Engineer
Irrigation Division 7- 1955

The past season was the third consecutive low water year. Lack of snow cover in the mountains, deficient rainfall during the summer except for the month of August, and cold weather during the early months all contributed to deficient water supply. More than the average amount of water was used from storage but use from natural flow was very deficient. Crops were not more than fifty percent of average except on lands having adequate storage water for late use.

Stream Flow

River & Station	: April- July : Flow in A.F. :	Mean Flow	: Percent of Mean : 1955
Animas- Durango	: 275,000	: 450,880	: 61
Dolores-Dolores	: 155,000	: 286,800	: 54
La Plata-Hesperus:	15,380	: 28,650	: 54
Pine-Vallecito Res.	134,350	: 201,140	: 67

Amounts of Water in Storage and Used in Acre Feet.

Name of Reservoir	: Capacity:	Max. Am't.:	Amount	: Amount	: No. Acres:
	: in Res'vr.:	Used	: on Nov.15:	Irr'gtd.:	
Vallecito	: 126,280:	111,250	: 72,010	: 39,240	: 35,000
Ground Hog	: 21,710:	12,070	: 8,680	: 4,380) 35,000
Narraguinepp	: 8,750:	8,750	: *10,790	: 200	
Summit	: 4,800:	5,050	: 5,000	: 50	: 5,000
Jackson Gulch	: 10,000:	7,820	: 6,200	: 1,600	: 7,000
Red Mesa	: 1,200:	800	: 800	: 0	: 700
Total	172,740	145,740	103,480	45,470	82,700

The total amount in storage was 84 % of capacity. Numerous small reservoirs not herein reported make total capacity 205,000 a.f. in

J. E. WHITTEN
State Engineer

C. C. HEZMALHALCH
Deputy



STATE OF COLORADO
OFFICE OF STATE ENGINEER
DIVISION OF WATER RESOURCES
DENVER 2

Durango, Colo.
January 26-1956

L. T. BURGESS
Chief Hydrographer

HARRY L. SITTSER, Jr.
Office Engineer



SUBJECT:

Mr. J. E. Whitten
State Engineer
Denver, Colo.

Dear Sir:

Herewith is Annual Report of Division Engineer, Irrigation
Division Seven for 1955.

This will supplant the preliminary report which was given
you in November.

Very truly yours,

J. R. Williams
Division Engineer.

ANNUAL REPORT OF DIVISION ENGINEER - IRRIGATION DIVISION 7

1955

The accumulated snow depth and water content as measured at several snow courses on the several water sheds at the beginning of the irrigation season was as follows:

River	No. of Courses	Snow Depth : Ins.	Water Content : Ins.	Aver. Water Content : Ins.	No. Years Record	1955 Percent of Av. %	1955 Flow Forecast : Apr. 1: May 1:	1955 Flow : Aver. % of
San Juan at Rosa	3	60	20.2	33.2	19	61	56 : 52	
Pine at Val. Dam	* 1	0	0	6.0	14	0	74 : 70	67
Animas at Durango	7	38	11.9	14.9	5-4	80	72 : 63	61
La Plata Hesperus	1	29	10.1	14.1	5	72	69 : 52	54
Dolores at Dolores	3	31	7.2	12.8	19	56	70 : 60	54

* The snow course at Granite Peaks had no snow as of April 1st. Pine River Flow is estimated in relation to Animas and San Juan.

The 1955 Flow is from preliminary estimates from April-September period.

Precipitation:

Station	Records of Precipitation at Weather Bureau Stations											
	: Periods, Amounts of Prec., Departures and Percentages											
	Jan. to March			April to June			July to Sept.			Total (Ins)		
	Amt.	Dep.	%	Amt.	Dep.	%	Amt.	Dep.	%	Amt.	Dep.	%
Cascade	7.41	-2.65	74	5.62	0.39	107	5.77	-1.56	79	18.80	-3.82	83
Cortez	2.37	-1.69	47	2.56	-0.36	88	4.49	-0.36	93	9.42	-2.41	80
Durango	4.18	-0.75	85	3.96	0.51	113	8.12	2.08	126	16.26	0.84	113
Ft. Lewis	4.48	-1.83	71	2.56	-0.76	77	6.77	0.51	108	13.81	-2.08	87
Ignacio	2.70	-0.98	73	4.38	1.05	124	5.96	0.48	108	13.04	0.55	104
Pagosa Springs	2.51	-3.37	43	3.28	-0.74	82	5.11	-1.59	76	10.90	-5.70	66
Rico	5.90	-2.14	73	3.00	-2.00	60	7.19	-1.01	88	16.09	-5.15	76
Silverton	2.99	-3.27	48	4.40	-0.40	92	No Record					
Val. Dam	5.25	-1.43	79	5.49	1.15	121	6.57	0.30	105	17.31	0.02	100
Wolf Cr. Pass	14.44	-5.45	73	7.45	-1.08	87	5.38	-2.79	66	27.27	-9.32	77

All stations in the division reported above average rainfall during August. Greatest monthly total was 5.13 ins. at Durango. Maximum was 1.82 ins. in 24 hours at Cortez on August 14.

The preceding tables prove that the records obtained by snow surveys now enable the forecasters to get within small limits of actual stream flow for the periods of snow melt. The maximum error in respect to forecasted flow in this area was six percent for Dolores River at Dolores. The precipitation records do not give an accurate guide to run-off. Probably because of evaporation and ground absorption factors. The prevailing temperatures and winds also have a bearing on stream flow. The average monthly temperatures at Durango during the snow melt period were:

	Month				
	: April	: May	: June	: July	:
Aver. Mo. Temp. at Durango	: 42.6	: 51.5	: 59.5	: 65.1	:
Departure	: - 2.5	: - 0.9	: - 1.1	: - 1.8	:

The only published record of wind velocities is at Vallecito Dam which is well protected as compared with the mesa farm areas. There is no figure available to compare with average but from memory, it was a cold windy spring with more than the usual number of dust storms which originate in New Mexico, Arizona and Utah and which bring in a good sample each time of the top soil from the desert areas in those states.

The frost free period, greater than 28 degrees, was from early June to the very last of September. Cold weather retarded the early crops of hay and grain and in areas without storage water for second crops, the total harvest was decidedly short.

The total use of water from natural streams was 406,870 acre feet. This amount was 22,760 acre feet less than was used in 1954. The total use of reservoir water 100,570 acre feet which compared with 91,940 a.f. used in 1954.

The amount remaining in storage on Nov. 1st. was 67,160 a.f. as compared with 84,510 a.f. a year ago. Reservoir water was used until Nov. 15 th. owing to dry fall weather. The first snow of any consequence came on Nov. 15 which stopped the use of water except for domestic purposes.

There were no major irrigation projects started. The further development of land and water use in this area now depends on the approval of the Upper Colorado River Development Plan which failed in last session of Congress to obtain approval.

The tabulated statements of Water Commissioners Ditch and Reservoir Reports conclude this report.

Irrigation Division 7

 Tabulation of Water Commissioners Annual Ditch Reports for 1956

Dist. No.	: Amount in S.F.:	Capacity in S.F.:	First Day:	Last Day:	Number of Days:	Aver. Daily A'mt. Used:	Number of Acres Irrigated:	Total Number of Acres Irrigated:
29	: 589	: * 639	:	:	:	:	: * 30,000	: * 15,000
30	: 590	: 1070	: Apr. 1	: Nov. 15	: 229	: 196	: 89,970	: 24,400
31	: 723	: 877	: Apr. 16	: Oct. 31	: 189	: 306	: 115,600	: 47,639
33	: 271	: 491	: Mar. 29	: Oct. 25	: 211	: 32	: 13,740	: 10,417
34	: 837	: 1288	: Mar. 25	: Oct. 31	: 220	: 276	: 121,220	: 56,135
69	: 92	: 88	: Mar. 20	: Sept. 11	: 75	: 35	: 5,220	: 979
Totals	3102	4453	Mar. 20	Nov. 15	240	783	375,570	154,570

* No Report by Water Commissioner. Estimated by Division Engineer.

 Tabulation of Water Commissioners Annual Reservoir Reports- 1956

Dist. No.	: Number of Reservoirs:	Area of High Water Line in Acres:	Capacity in Feet:	Quantity in Reservoirs:	Quantity in Reservoirs:	First Day:	Last Day:	No. of Days:	Aver. Daily Am't Used:	No. of Acres Irrigated:	Total Number of Acres Irrigated:
29	: 5	: * 670	: * 1500	: * 1000	: * 100	:	:	:	:	: * 1000	: * 1500
30	: 5	: 935	: 25170	: 6940	: 13900	: 7/20	: 8/19	: 19	: **280	: 220	: 130
31	: 3	: 3093	: 128236	: 60710	: 15880	: 6/16	: 10/31	: 137	: 330	: 90300	: 33510
33	: 1	: 50	: 1200	: 1200	: 0	: 5/18	: 8/20	: 59	: 7	: 800	: 725
34	: 9	: 1214	: 26166	: 20540	: 1460	: 5/4	: 10/30	: 179	: 100	: 35820	: 49200
69	: 2	: 706	: 22635	: 6970	: 1030	: 7/7	: 9/14	: 68	: 1	: 120	: 24
Totals	25	6668	204907	97360	32370	5/4	10/30	179	358	128260	87085

* No Report by Water Comm'r. Estimated by Division Engineer. ** For irrigation only. Does not include storage or used amounts in or from Cascade Reservoir which is used for power. (a) Includes 11820 A.F. from Ground Hog Reservoir in Dist. 69.