

J. E. WHITTEN
State Engineer

C. C. HEZMALHALCH
Deputy



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.
December 15-1959

SUBJECT:

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

Dear Sir:

Herewith are final tabulations of Water Commissioners Annual Ditch and Reservoir Reports for 1959.

This completes the annual report from Division 7 with the exception of La Plata Compact Report which will be submitted at a later date.

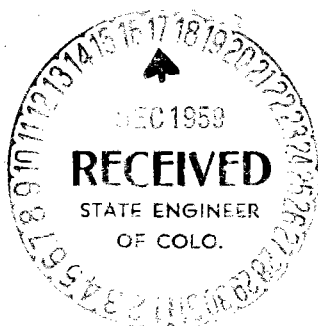
The irrigation season of 1959 in this division was one of the poorest ever experienced from a water supply aspect.

The value of stored water in reservoirs was never more apparent than this year.

Administration was exacting and at times difficult as there were many conflicts. Am pleased to report that the Water Commissioners and I came thru with our skins intact by some miraculuos providence.

Respectfully yours,

J. R. Williams
J. R. Williams
Division Engineer



IRRIGATION DIVISION NO. 7
PRELIMINARY REPORT FOR 1959.

Water Supply

On April 1st, the water content of snow on San Juan, Animas and Dolores Rivers was about fifty percent of average. On May 1st, the condition had not changed. In fact, it was more apparent that we were to have a low water season. There were a few exceptions to low water content of the snow. For example: On Red mountain, on May 1st, the snow depth was 76 ins. and water content 30.7 ins. as compared with an eight-year average of 32.8. This snow must have blown over from the Curay side as the good snow cover did not extend very far down country.

Total precipitation at Durango for the October - April period was 6.23 ins. which was about seventy percent of average. Total for the March-June period was 2.15 ins. or forty-four percent of mean. So the spring and early summer moisture did not increase the water supply. Beneficial rains commenced on July 21th, and continued thru August. Total rainfall at Durango for August was 4.82 ins. which was plus 2.47. Most in one day was 1.93 on the 5th, which caused some flooding in the City and damage to residential property. A similar heavy rain on that date hit a small area south of Marvel. Deputy Water Commissioner reported six inches of rain in about two hours. Run-off amounted to about 1400 s.f. at state line on the La Plata from this rain.

Stream Flow.

Animas at Durango

Year	Months & Period							
	April	May	June	Total 3 Mos.	July	Aug.	Sept.	Total 6 Mos.
1959	22860	69800	94000	186660	21750	23460	12850	244720
Mean	51100	143600	173100	367800	71580	31740	23240	494360
% of Mean								
1959	45	48	54	51	30	74	55	50
1934	43100	75000	23500	141600	13000	12700	13200	180500
1959 % of 1934	53	93	400	132	168	186	99	135

Comparisons are made with 1934 because it seemed from the start this year that the water supply was about like 1934 which was the lowest water year of recent history.

Stream Flow

Dolores River at Dolores

Year	Months & Period							Total 6 Mos.
	April	May	June	3 Mos.	July	Aug.	Sept.	
1959	10840	40860	25960	77660	7640	8860	4670	98830
Mean 1937-58	47940	112300	89980	250220	27160	14080	9240	300700
1959 % of Mean	22	36	29	31	31	63	50	33
1934	28100	34900	6430	69430	3430	3190	2510	78540
1959 % of 1934	38	117	405	112	224	280	186	* 125

La Plata
at Hesperus

Year	Months & Period							Total 6 Mos.
	April	May	June	3 Mos.	July	Aug.	Sept.	
1959	1850	5650	3230	10730	655	945	406	12740
Mean 1924-57	5200	10850	9000	25050	2740	1520	1080	30460
1959 % of Mean	35	52	36	43	24	59	38	42
1934	4040	1400	1980	2530	758	743	571	11600
1959 % of 1934	46	128	300	112	86	127	70	110

Pine River

Year	Months & Period							Total 6 Mos.
	April	May	June	3 Mos.	July	Aug.	Sept.	
1959	8670	35730	38920	83620	7620	11110	5580	108000
Mean 1937-58	27200	69500	71200	164000	30700	13500	11400	219000
1959 % of Mean	32	51	55	51	25	82	49	49

* When 5010 acre feet of water from Grand Hog Reservoir is deducted from the flow at Dolores for 1959 it makes the relation to 1934 only 118 percent and 14250 acre feet more than occurred in 1934.

The La Plata and Dolores were the lowest in percent of mean runoff. From snow measurements the forecast on all the basin streams was fifty percent which held true on most streams.

Use of Water

Water Commissioners records are not complete as of this date. Most are being copied, so the final report will be made at a later date.

Following is a tabulation of use from major reservoirs.

Name of Reservoir	Capacity	Max. Am't. Stored	Percent of Capacity Stored	Amount Used	Amt. in Res. Oct. 1	Number Acres Irr'gtd.
Vallecito	126,280	68,230	54	51,520	16,720	44,630
Jackson Gulch	10,000	5,540	55	4,330	790	5,875
Summit	4,800	2,150	45	1,780	320	5,000
Ground Hog	21,710	8,350	38	5,040	2,990	(35,000)
Narraguinepp	19,050	17,900	94	18,180	2,000	(35,000)
Red Mesa	1,200	1,050	90	870	70	500
Totals	183,040	103,220	56	81,720	22,890	91,005

omit → The same reservoirs in 1958 had a maximum of 169,000 acre feet in storage. Used 117,000 and had 50,000 remaining on October 1. 35,000 ac. ft. more was used and there was 37,000 more in 1958 than in 1959. Some water was stored during October and is continuing in November in Jackson Gulch and Vallecito Reservoirs.

The summation of use of water under separate projects are included in this report and are of more interest than the total tabulations for water districts.

The total use of water from Pine River below Vallecito Reservoir was 150,830 acre feet or 3.38 acre feet per acre on 44,626 acres. This was close to an adequate supply although the average use in good water years is much greater. Reservoir water was apportioned under Vallecito Reservoir at the rate of 1.50 acre feet per acre. Actual diversion by Non-Indian ditches was 1.45 a.f. per acre. This caused by the Directors of the District and the Bureau of Reclamation caused additional bookkeeping and administrative work. This started on June 16 and ended Sept. 30th. Summations were made every ten days to determine the total amounts of reservoir water used by each ditch and then the regulation or closing of headgates when a ditch was out of priority water and reservoir water. The Utes used only 462 acre feet of reservoir water and had about ten thousand left in the reservoir as of October 1. They own one sixth of the amount in storage each year.

water was released from G. River to users "in demand" at rate
 Under Jackson Gulch Reservoir the Directors and Bureau released water to users on demand at the rate of sixty five percent of the amount contracted. This caused an increase in the cost of water to about five dollars per acre foot. There was a reduction of about 500 thousand acres in the amount of land irrigated from storage as compared with 1950. This caused 2

which caused
 and this percentage deduction caused an

The Montezuma Valley Irr. Company were only about twenty percent short of their average annual diversion. Total diversion was 2.40 acre feet as compared with an average of 3.10 per acre.

The Summit System was ^{most} ~~most~~ short of any where a fair reservoir capacity exists. They stored only 2,150 acre feet and used a total of 1,950 on about 5,000 acres.

Crops.

Where there was not adequate storage the hay and grass crops were terribly short. This was particularly true in the San Juan River areas and on the La Plata.

Winter wheat made a fair yield on the La Plata and Florida areas and was much better than was expected. The Florida Canal diverted 10,900 acre feet for 7,500 acres. The Florida Farmers Ditch diverted 10,100 a.f. for about 6,400 acres.

Low points of flow occurred in July and in September. The Florida River got down to 1.5 c.f. at the gage which is below the City Intake. The La Plata had a minimum of five c.f. and the Mancos about four c.f. of natural flow. It began to look like a tough go for stockmen in September and then it rained. Heavy rain the last of Sept., and first few days of October brought stream flow up so that stock ponds were filled. The heavy snow in the high country melted in mid October. Another good storm came in early November with resultant increase in stream flow. So all the stock ponds are filled. There is however short forage and hay crops. Considerable hay was carried over in most areas from last year.

Dams

It appears at this time that the Florida Reservoir Project will be approved and perhaps construction started within a year. This will provide thirty two thousand acre feet storage for a total of eighteen thousand acres. Other Bureau projects, Animas- La Plata is postponed to 1964 and Dolores to 1962.

Inspection of all dams in the division was made during the spring and early summer and reports made. The Game and Fish Department finally got the outlet valve open which has been rusted shut for years. All that remains now to do is to place a good valve wheel on it with lock. Archie Tenor kept an eye on the Mullin Dam on Williams Creek. The reservoir did not completely fill. All reports were that the dam is apparently in good condition. This fall it is reported that a beaver colony has moved into or around the outlet of Bauer No. 2 reservoir near Mancos. Owners have been advised to get them out.

The tabulation of Water Commissioners reports will be submitted at a later date to complete this report.

Respectfully Yours,

J. R. Williams
Division Engineer.

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STATE OF COLORADO
OFFICE OF STATE ENGINEER
DIVISION OF WATER RESOURCES

Durango, Colo. November 18-1959

SUMMATION OF USE OF WATER FROM PINE RIVER BELOW VALLECITO
RESERVOIR FOR SEASON OF 1959. IN ACRE FEET.

SUBJECT:

By J. R. Williams
Division Engineer

<u>River Water</u>			
Subject	Amount Diverted	Water Area Irrigated	Water Duty
Use Indian	34,063	9,528	3.58
Non-Indian	65,240	35,098	1.86
Total	99,303	44,626	2.22
<u>Reservoir Water</u>			
Use Indian	442	9,528	0.05
Non-Indian	51,082	35,098	1.45
Total	51,524	44,626	1.35
<u>Total Diversion</u>			
Use Indian	34,505	9,528	3.63
Non-Indian	116,302	35,098	3.31
Total	150,807	44,626	3.38

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OFFICE OF STATE ENGINEER
DIVISION OF WATER RESOURCES

GENEVY

Durango, Colo. Nov. 22-1959

Summation of Jackson Gulch Reservoir Operation in Acre Feet for 1959
By. J. R. Williams

SUBJECT:

Date	Amount in Reservoir	Gain	Loss
March 1	4,080		
April 1	4,260	200	
May 1	5,350	1,070	
May 1	5,500	150	
June 1	4,920		580
July 1	3,670		1,290
Aug. 1	1,580		2,050
Sept. 1	1,070		510
Oct. 1	790		280
Nov. 1	700		10
Total	5,500	1,420	4,720

Recorded Release From Storage.

Outlet to West Mancos River	2,800	(From Storage)
" " Crystal Creek Ditch	468	
" " Chicken Creek	1,115	
Total	4,383	

Delivery to Canals.

Name of Ditch	First Day	Last Day	No. Days	Acre Feet	Total Acres
Root & Ratliff	May 22	Sept. 25	126	538	800
Willis	June 30	Aug. 27	59	121	150
Smith	July 7	July 13	7	6.8	40
Lee & Burke	July 25	Oct. 2	16	32	20
No. 6	June 19	Sept. 15	40	66	160
Henry Bolen	July 1	" 18	57	198	300
Beaver	May 7	Aug. 21	97	290	500
Boss & Velts	July 9	Oct. 2	86	132	400
Franks	May 28	Aug. 9	67	104	110
Sheek	July 3	Sept. 18	47	127	300
Lee	June 18	Aug. 21	65	189	180
Webber No. 1	May 7	Oct. 2	149	1,136	1,615
Carpenter-Mitchell	May 27	Sept. 9	70	198	250
Kron	May 23	June 14	23	29	50
East Mancos Hilline	May 19	June 8	21	99	160
Crystal Creek	May 13	Aug. 25	96	651	600
Smouse	May 15	May 27	13	17	40
Williams	June 1	June 12	12	36	50
Mancos Pipe Line	July 22	Oct. 1	41	96	Ann.
Halla	May 11	Aug. 4	65	222	150
Mesa Verde Exch.	May 17	Sept. 30	137	45	Dom.

Total

4,333

5,875

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OFFICE OF STATE ENGINEER
DIVISION OF WATER RESOURCES
DENVER 2

Operation of Canal & Reservoir Operation by Montezuma
Valley Irrigation Company, Use of Water in Acre Feet
for 1959 season.

SUBJECT:

By J. R. Williams
Division Engineer

Name of Canal or Reservoir	Total Amount Diverted From River	Amount Diverted To Storage	Net Amount Used From River	Number Acres Irrigated	Grade Duty Per Acre
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Montezuma	37,160	0	37,160		
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Montezuma	50,250	20,200	30,050		
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TOTAL			67,510		
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Less Amount From Ground Hog Reservoir			5,040		
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Net Amount From River			62,470		
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Less Estimated Amount to Town of Cortez of Priority Water			1,500		
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Net Company Use			60,970	35,000	1.74
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USE FROM STORAGE

Ground Hog Reservoir			5,040		
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Harragwinapp			18,180		
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Total			23,220	35,000	0.66
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Total Use			84,190	35,000	2.40
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DIVISION OF WATER RESOURCES

Durango, Colo. Nov. 18-1959

Summit of Summit Reservoir ^{and} Ditch Company Operation ⁵⁷
In Acre Feet For 1959 Season. ²⁸

SUBJECT:

By J. R. Williams
Division Engineer

Summit Reservoir Operation ²⁶					Inflow			Outflow	
Date	Days	in	Storage	Gain	Loss	Turkey	Summit	Total	Summit
						Creek	Ditch	Inflow	Outlet
April 1:	5.0:	210 :				April:	71 :	1010 :	1003 :
May 1:	12.2:	1150 :	910 :			May :	53 1/2 :	1128 :	1562 :
May 20:	16.7:	2150 :	1000 :			June :	81 :	26 :	107 :
June 1:	14.9:	1710 :		440 :		July :			
July 1:	12.0:	1110 :		600 :		Aug. :			
Oct. 1:	6.0:	320 :		790 :		Sept.:			
Totals	16.7	2150	1910	1830		686	216 1/2	2050	1775

Estimated Total Use

Release From Summit Reservoir----- 1775
 Est. Share Use From Turkey Cr. Ditch----- 140 (29.5 Shares)
 " " " To Willis Smith ----- 35
 Total 1950

Remarks: On approximately 5000 acres of land in the project the use per acre was 0.4 acre Feet. A large percent of release from Summit Reservoir was for domestic use. Actually the release for irrigation of crops was mostly during May and June and amounted to about two light irrigations. Total use for irrigation was about twenty percent of average.

Tabulation of Water Commissioners Annual Reservoir Reports

1959

Dist. No.	: Number of Reservoirs Reported	: Area of High Water Line (Acres)	: Capacity in Acre Feet	: Quantity in Storage May 1st. (Acre Feet)	: Quantity in Storage Nov. 1st. (Acre Feet)
29	: 5	: 670	: * 1,500	: * 700	: * 200
30	: 5	: (a) 938	: (a) 25,310	: (a) 3,305	: (a) 11,431
31	: 3	: 3,093	: 128,240	: 51,410	: 23,970
33	: 1	: 50	: 1,200	: 1,050	: 70
34	: 9	: 1,407	: 36,847	: 26,295	: 3,422
69	: 4	: (b) 700	: 22,210	: 6,471	: 3,088
Totals	27	6,858	214,947	89,231	42,181

Continued

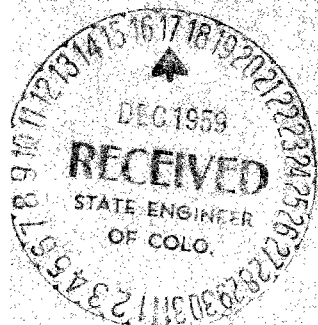
Dist. No.	: First Day Water Was Used From Storage	: Last Day Water Was Used From Storage	: No. of Days Used	: Average Daily Amount in S.F.	: Number of Acre Feet Used	: Number of Acres Irrigated
29	:	:	:	:	: * 500	: * 500
30	: July 1	: Aug. 31	: 23	: 4.9	: (c) 224	: 210
31	: June 16	: Sept. 30	: 106	: 245	: 51,524	: 35,098
33	: May 6	: July 26	: 63	: 6.9	: 868	: 458
34	: Apr. 1	: Oct. 2	: 162	: 22	: 7,159	: 13,015
69	: June 12	: Aug. 4	: 48	: 1.7	: 167	: 61
Totals	Apr. 1	Oct. 2	162	188	60,442	49,342

Note: * No report for Dist. 29. Amounts estimated by Division Engineer.

(a) Includes capacity and amounts in Electra Lake which is used for power only.

(b) Includes Ground Hog Reservoir from which 5,040 acre feet was used in Dist. 34

(c) Amount used for irrigation only.

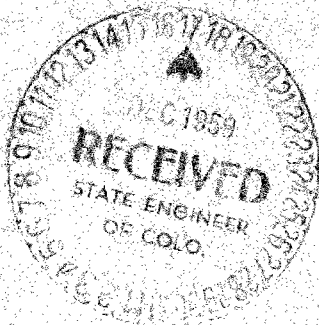


Tabulation of Water Commissioners Annual Ditch Reports

1959

Dist. No.	: Amount : : Approp- : : riated : : in S. F. :	Total : : Capacity : : of Canals : : in S.F. :	First : : Day : : Water : : Was Used :	Last : : Day : : Water : : Was Used :	No. : : Days : : Used :	Aver. : : Daily : : Am't. : : S.F. :	Number : : Acre : : Feet : : Used :	Number : : Acres : : Irrig- : : ated. :
29	: 589 :	639	: * :	* :	:	:	: 15000 :	15000 :
30	: 591 :	1075	: Mar. 30 :	Nov. 15 :	230 :	207 :	95210 :	22637 :
31	: 710 :	848	: Apr. 20 :	Oct. 31 :	195 :	271 :	106080 :	46664 :
33	: 273 :	462	: Mar. 9 :	Oct. 31 :	237 :	21 :	9950 :	6517 :
34	: 787 :	1224	: Apr. 1 :	Oct. 31 :	214 :	209 :	88580 :	48491 :
69	: 115 :	83	: Apr. 18 :	Sept. 9 :	145 :	10 :	3030 :	934 :
Totals	3065	4331	Mar. 9	Nov. 15	252	636	317850	140243

Note: * Indicates no report by Water Commissioner of Dist. No. 29.
Totals were estimated by Division Engineer.



<u>1959</u>	
Max. Stored	used
103	82
<u>1958</u>	
169	117

The above indicates that 37,000 ^{A.F.F.} more ^{WERE} filled in 58 ~~than~~ ^{than} 59

+ some water stored during Oct ¹⁹⁵⁹ in Jackson Gulch and Vallecito Reservoir and is continuing!

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 81228
 21500

Williams

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