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Durango, Colorado.

November 21-1961

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

Dear Sir:

This is to submit the annual report for Irrigation
Division 7 for the 1961 season.

I think that this is the first time, at least in
recent years, when I have been able to complete the report
with tabulations of Water Commissioners Ditch and Reservoir
Reports within the prescribed time.

Respectfully Submitted,

J. P. Williams
Division Engineer.
Irr. Division 7

Annual Report

Irrigation Division 7 - 1961

By. J. R. Williams
Division Engineer

Water Supply

The winter of 1960-61 was mild and less than average snowfall in November, January and February.

As of May 1st, the water content of snow on the Animas River was about average. Stream flow forecast was 450,000 acre feet for April-September period. Preliminary estimates indicate that the flow was ~~392 thousand~~ ^{392,000} or 81 percent of the long time average.

Monthly Flow of Animas River at Durango

Month & Period Flow (in Acre Feet)

	April	May	June	3 Mos.	July	Aug.	Sept.	6 Mos.	
1961	:41140	:139240	:120650	:301030	:29760	:28600	:32770	:392160	
Mean									
23 Yrs.	:49870	:140420	:169680	:359970	:69410	:31380	:22770	:483530	
%									
1961	82	99	71	84	43	91	144	81	

Seasonal Precipitation at Durango

Month & Amounts in Ins. & Departure

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1961	3.83	: .90	: 2.02	: .60	: .56	: 4.08	: .87	: .35	: .05	: 1.91	: 3.12	: 2.22
23 Yrs.	2.23	-.02	.39	-.82	-.72	2.57	-.38	-.83	-.86	.08	.77	.34

Total was 20.5 ins. which was 13 percent above the long time average.

My personal and unpublished forecast for the April-June runoff at Durango was 89 percent, which was 5 percent off. But on the La Plata River at Hesperus for the same period, an estimate based on the precipitation at Fort Lewis for the preceding October-December period was almost perfect. Estimate was 23,240 acre feet. Runoff was 23,170. A copy of the method is available to any one interested and while this may have been an accident on the first try, it is to be pursued on other streams.

Use of Water.

In general, the stream flow was ^{through} adequate to meet irrigation requirements in April and May. Flow decreased rapidly after June 15 and was quite deficient ^{through} July. Above average rainfall during August and September abated the requirement. Use of reservoir water commenced in June but generally was not continued after August 17. Some reservoir water was used from storage from Ground Hog Reservoir in September and from the Vallecito until October 12.

Less than average amounts were used from storage, and there is a good carry over for next year.

Use by Principal Projects in Acre Feet

Project	: Amount:	Number:	Amount:	Number:	Total	Total	Gross
	: River	: Acres	: Res.	: Acres	: Amount:	: Number:	: Duty
	: Water	: From	: Water	: From	: Used	: Acres	: Per
	: River	: River	: Res.	: Res.	: Acre		
Pine River:	116100:	46620	: 56200	: 35500	: 172300:	46620	: 3.7
Mancos	: 21770:	11730	: 4830	: 5971	: 26600:	11730	: 2.3
M.V.Irr.	: 100740:	35000	: 24180	: 35000	: 124920:	35000	: 3.6
Summit	: :		: 6310	: 5000	: 6310:	5000	: 1.26

Completion of the Puett Reservoir in 1960 gave the Summit System an additional two thousand acre feet storage capacity. The Summit and Puett reservoirs stored to about ninety percent of capacity. The Ground Hog Reservoir reached 10,850 acre feet in storage or fifty one percent of capacity. All other reservoirs filled. The Vallecito reached 120 thousand on June 12, which is about six thousand acre feet more than is usually stored.

Crops.

Hay and grain crops over the division were average to good and, of course, better in areas having reservoir water for late use. Some difficulty was experienced in harvesting hay during late summer because of rain. Fall wheat, planted in August and September, looks good. Ground moisture is good.

Development.

The Lemon Dam on Florida River has been under construction since July, and good progress has been made. It is planned to bore the outlet tunnel during the winter months. If completed, this will allow spring runoff to be passed ^{through} the tunnel. Otherwise they will have trouble next spring with water. This project will bring twenty thousand acres under firm water supply.

The Morrison Creek Dam in District 69 was completed. This will create a small reservoir of about one hundred acre feet. Such small reservoirs all contribute to the conservation of water and are a good thing to have, except that there are generally more administrative problems related to small reservoirs than with large ones.

All dams were examined and found in good condition in the spring, except a poor outlet condition on the Big Pine reservoir which is a part of the Summit System. The gate could not be completely closed, so some storage was lost but was picked up in the Summit reservoir. The gate was repaired this fall.

A recent examination of the Red Mesa Ward Reservoir Dam (after it was completely drained) disclosed a fracture in the gate tower about thirty feet down from the top. Tower is 49 ft. high. The fracture is at a previous joint with old work. The tower is leaning about 8 inches to the south. I have recommended that the owners place a concrete block at base of the exposed tower and place some braces against the tower as a temporary measure.

Administration.

With the exception of some trouble with New Mexico on the La Plata we had little difficulty.

We are getting some headgates and flumes installed on ditches taking water from the Florida this fall, and more will be placed next spring. Several headgates need replacing with steel and concrete on La Plata Ditches. It looks as though compliance with the orders will occur next spring.

All ditches on the Dolores need headgates and flumes. They were wiped out in the spring floods of 1957 and have just this year *started* got back in operation after considerable help to owners by the Soil Service and the Army Engineers. Examination has been made of each ditch heading to determine just what will be needed, but orders will not be sent out until we see what the effect of spring floods will be.

A separate report will be made of the La Plata Compact operation.

Tabulations of water commissioners annual ditch and reservoir reports complete this report.

Tabulation of Water Commissioners Annual Ditch Reports

Dist. No.	Amt. : Approp-riated : in S.F.:	Total : Capacity: : of Canals : in S.F.:	First : Day : : Was : Used	Last : Day : : Was : Used	No. : Days : : Used	Aver. : Daily : : Amt. : : Used	Number : Acre : : Feet : Used	Number : Acres : : Irr. From : Natural : Stream
29	589	639	:	:	:	:	* 45000	* 15000
30	586	986	Apr.1	Nov. 15	229	194	88783	21548
31	695	899	May 1	Oct. 20	173	358	123813	**48324
33	273	347	Mar. 20	Oct. 31	226	48	21705	12412
34	826	1366	Apr. 17	" 31	197	364	131280	49140
69	112	82	" 2	Aug. 16	106	16	3494	985
Total	3081	4319	Apr. 1	Nov. 15	229	904	414075	147409

Note: * No Report. Estimated by Division Engineer.

** Includes 9932 acres Indian Land of which 404 acres is under non-indian ditches. Also includes 1595 acres of Non-Indian Land under Indian Ditches.

Tabulation of Water Commissioners Annual Reservoir Reports

Part 2

Dist. No.	First Day : Water Was : : Used : From : Storage	Last Day : Water Was : : Used : From : Storage	Number : Days : : Used	Aver. : Daily : : Amt. : : Used : in S.F.	Number : Acre : : Feet : Used	Number : Acres : : Irrigated : From Storage
29	:	:	:	:	* 1500	* 1500
30	July 3	Aug. 20	620	6.0	232	125
31	May 16	Oct. 12	141	200	56198	35569
33	" 25	Sept. 27	91	6.1	1118	615
34	" 2	" 23	114	137	31154	48111
69	June 25	Aug. 20	57	2.2	255	98
Total	May 2	Oct. 12	155	292	90457	86018

Note: * No Report. Estimated by Division Engineer .

Tabulation of Water Commissioners Annual Reservoir Reports

Part 1

Dist. No.	Number of Reservoirs Reported	Area of High Water Line in Acres	Capacity in Acre Feet	Amount in Storage on May 1st. Acre Feet	Amount in Storage on Nov. 1st. Acre Feet
299	5	670	* 1500	* 1500	
30	5	938	(a) 25310	(a) 7670	(a) 20680
31	3	3093	128236	60200	65090
33	1	50	1200	1200	0
34	9	1501	38450	30470	16050
69	4	670	22281	8480	5110
Total	27	6922	216977	109470	106930

Note: * No Report for Dist. 29. Estimated by Division Engineer.

(a) Includes Cascade Reservoir which is used for power only.