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Governor



A. RALPH OWENS
State Engineer

DIVISION OF WATER RESOURCES

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November 20, 1968

Mr. A. Ralph Owens,
State Engineer
Denver, Colorado

Dear Ralph:

I am enclosing my report for 1968 covering the operations in Water Division Seven.

With all the "ups and downs" I feel we had a very good year.

We had excellent cooperation from you and your staff.

Sincerely yours,


George E. Barclay

ANNUAL REPORT
WATER DIVISION 7 for 1938

GENERAL

This has been "just one of those years" when there were indications from the start it was going to be one of our better irrigation years. As far as irrigation water was concerned we would have to go back to a series of events relative to the snow pack and temperature conditions. We had a good snow pack with a very cold December when we received our heaviest snows, the precipitation was below average up to June, July was above average. The temperature was below average during the month of January, then above average in February and March. When the snow started to melt and the streams started to muddy up we had a cold dry April, this retarded the runoff and put a crust on the snow which gave us a lower peak runoff later than average.

SNOW PACK

The following is the water content at certain times at the below listed stations:

Station	date	water content in inches	1948-62 av- erage water content in.
Upper San Juan	Feb. 1	21.9	21.7
	May 15	34.7	21.6
	June 1	12.5	14.1
Wolf Creek Pass	Feb. 1	19.7	19.3
	May 15=	28.8	16.2
	June 1	9.9	6.3
Wolf Creek Sum- mit.	Feb. 1	19.2	19.1
	May 15	36.0	31.5
	June 1	30.4	24.6
Red Mountain=	Feb. 1	14.7	18.0
	May 15	41.9	30.7
	June 1	29.3	18.5

It will be noted that due to the cold month of April and the early part of May we had above average snow left at most of the recording stations.

RUNNOFF OF THE MAJOR RIVERS IN THIS DIVISION (in thousands)

River	Station	Period of Average	Amount Acre Feet Average	Amount Acre Feet 1968	Percent of Total
San Juan	Pagosa Springs	37	267	252	94
Dolores	Dolores	57	245	295	120
Animas	Durango	63	497	573	115
La Plata	State Line	38	23	16	70

TEMPERATURE

Station	Nov.(67)	Dec.(67)	January	February	March	April
Cortez Departure	41.3 +4.1	23.4 -6.1	21.9 -5.6	35.1 +3.2=	40.5 +2.0	43.0 -4.4
	May. 54.6 -1.3	June 65.3 -1.1	July 71.0 -0.3	August 65.3 -4.3	Sept. 60.2 -2.0	Oct. 52.5 +1.3
Durango	Nov. 39.8 +3.7	Dec. 22.5 -5.4	January= 24.5 -0.8	Feb. 33.9 +4.2	March 38.8 +2.1	April 42.3 -2.8
	May 51.7 +0.8	June 61.7 +1.1	July 67.3 +0.3	August 62.1 -3.9	Sept 62.1 +3.1	Oct. 55.1 +5.9
Ft. Lewis Departure	Nov. 37.1 +3.9	Dec. 19.0 -6.9	Jan. 21.6 -1.4	Feb. 29.4 +3.5	March 32.5 +0.8	April 37.2 -4.0
	May 47.3 -1.7	June 58.9 -1.7	July 64.7 +1.1	August 58.6 -3.3	Sept. 54.1 -1.6	Oct. 47.0 +0.8
Silverton Departure	Nov. 31.9 +5.3	Dec. 17.8 -1.5	Jan. 10.2 -4.9	Feb. 21.6 +2.6	March 25.7 +1.9	April 28.5 -5.3
	May 41.7 -0.2	June 51.7 -2.0	July 55.0 -0.1-	August 52.3 -1.8	Sept. 47.0 -2.0	Oct. 43.0 +4.1

PRECIPITATION

Station	Nov.	Dec.	Jan.	Feb.	March	April
1967						
Cortez	0.16	2.18	0.64	0.61	0.89	0.71
Departure	-.59	+1.06	-.42	-.49	-.20	-.30
	May	June	July	August	Sept.	Oct.
	1.07	0.10	2.20	1.34	0.00	0.78
	+.21	-.44	+.99	-.17	- 1.61	-.67
Durango	Nov.	Dec.	Jan.	Feb.	March	April
Departure	0.54	4.03	1.49	1.36	1.11	1.17
	-.44	+2.40	-.12	+.06	-.38	-.12
	May	June	July	August	Sept.	Oct.
	2.14	0.17	1.00	1.10	1.10	0.09
	+1.01	-.71	-.81	-1.26	-.63	-1.79
Fort Lewis	Nov.	Dec.	Jan.	Feb.	March	April
Departure	0.19	2.60	1.45	1.26	0.99	0.90
	-.80	+1.00	-.19	-.45	-.56	-.58
	May	June	July	August	Sept.	Oct.
	1.37	0.46	2.29	2.00	00	0.78
	+.18	-.44	+.54	-1.40	-1.80	-1.25
Silverton	Nov	Dec.	Jan.	Feb.	March	April
Departure	0.61	4.32	1.73	3.24	0.99	1.40
	-.55	2.82	-.68	1.57	-1.09	-.01
	May	June	July	August	Sept.	Oct.
	1.64	0.17	4.05	3.55	0.80	1.38
	+.25	-1.24	+1.58	+.73	*1.48	-.51

CROPS

The weather pattern had a great deal to do with the crops in this Division. The above normal temperatures during the months of February and March started the winter wheat and range grasses to grow. If had a very bad effect on winter wheat especially at elevations below 6500' the average yield being about 12 bushels per acre. On land at elevations of 6500' or above the yield was better and would average up to 40 bushels per acre. The bean crop started out to be a bumper crop with sufficient soil moisture to start the beans to grow and with the heavy July and August rains a good growth was realized. Then as perusual something happened, probably below temperature during the later part of August and September, with the possibility of some frost during the early part of September cause d a large share of the beans to shrivel and not fully form, the yield was about normal but a large percentage of the beans were class 2 instead of class 1. A great deal of trouble was experienced in harvesting the oat crop due to low temperatures in August and September. Average or above average yields from improved hay lands were harvested due to ample water and cool weather, many of the normal one cutting fields yielded two cuttings. Fruit crops yields varied from very few cherries, peaches, apricots and a good yield of apples.

INSPECTION OF RESERVOIRS.

In company with Messrs. Paddock and Davidson inspections of a large percentage of reservoir in the Division were made. Before and after their official trip inspections were made of the remaining reservoirs in this Division. With the above average runoff this spring all the dams in the Division "were tested". No serious problems were found. We did find some spillways that needed cleaning and some capacity stretchers (manure, hay or dirt plugs in the spillway) were being applied.

ADJUDICATIONS

We are still waiting for the final court hearing on District 29 which is to held in Pagosa Springs on November 25th. This court session is for attorneys and owners to present any corrections in their presented evidence before the final draft of the decree is made.

A new Decree has been issued for District 30.

Late this summer we received a new Decree for District 69, this adjudication legalizes a lot of "trespass" use of water by a certain water user in this district.

We submitted to the court a list of corrections (mostly typographical) errors in the proceedings in District 31 and 46 which have been corrected by the court.

Three change in headings were in the courts in this division this year two of these, one in District 33 and one in District 34 were finalized, one in District 29 is being processed at the present time.

COMPACTS

The La Plata Compact operated in a "smooth" fashion this year, we had very few complaints from water users in New Mexico and Colorado. Numerous meetings were held in conjunction with water users both from Colorado and New Mexico. We have hopes that these meetings will cement the way to better future friendly cooperation and should help in the formulation of working agreements when the La Plata (Animas-LaPlata) Project is built. We shorted New Mexico some water in June due the improper averaging of the daily flows at the Colorado-New Mexico State Line.

STOCK TANKS

A large number of stock tanks were inspected during the year, most of the construction was during the off irrigation season, in most cases where there is a possibility of infringement on existing irrigation water rights the Soil Conservation Service has the individual owner check the tanks out with this office before their applications are submitted. As a large number of the tanks are located on drainages having existing stock tanks possible possible adjudication in the foreseeable future. The only infringement on the "stock tank" law seems to be by one individual in District 69.

STRUCTURES

We are still putting the heat on to have all of our ditches, that we feel necessary, under control.

In District 29, 87 structures, flumes, check and waste, and heading structures were installed. After the last Decree has been issued in this District orders for structures will be issued for most of the ditches on the Navajo and Blanco River watersheds. We feel that all ditches that are diverting waters from these two watershed should have control structures before water is diverted into New Mexico.

In District 30, 3 flumes were installed.

In District 32 two flumes and headgates were installed.

In District 34, four flumes and 3 headgates were installed.

SAN JUAN-CHAMA PROJECT

It will be remembered that this project is broken down into three units, The Blanco Tunnel from the Rio Blanco to the Little Navajo River, The Ozo Tunnel from the Little Navajo River to the Big Navajo River, and the Azatea Tunnel from the Navajo River to the Chama River Drainage in New Mexico.

The following is the construction completion status of the three units:

Blanco Tunnel. The lining of this tunnel with concrete is complete. It progressed at a rate of nearly one mile per month. The tunnel which is 8' 7" in diameter was dug in the solid section by a mole and in the loose rock and dirt section by conventional mining methods. The inlet and measuring structures are 95% complete, the construction contractor should complete all work this year.

Ozo Tunnel. Construction progress has been very good, with the exception of the inlet and outlet the hole was bored using a "mole". This tunnel which also has a 8' 7" diameter is concrete lined. The contractor used a monolithical pour lining about one mile per month. The lining should be completed this month. The inlet structures are 75% complete. The contractor should "wind" up all of the construction work by September 1, 1969.

Azatea Tunnel. This was the first contract to be let on the project. It started out in a Snafu status and has never really got off of the ground. The tunnel on this project which finishes out at 10' 11" in diameter was holed thru by the moles in March of this year. The diversion structures are about 50% completed. As compared to the Blanco and Ozo Tunnels the lining is progressing at a rate of about one-half a mile per month. They are working from both ends of the tunnel, employing about 100 men on each end. The contractor has completed 5.3 miles on the lower end and 1.4 miles on the upper end. This contractor instead of making a monolithical pour they are pouring an invert (1/6 of a circle) first and making a second pour. The big mistake seems to be the contractor took the concrete for \$42.00 per yards about 40% to cheap.

NEW DAM CONSTRUCTION

No new starts on dam construction was made this year.

The Spence Dam in District 29 was completed, fully impounded, and used for irrigation this year.

Melvin Adams completed "repairs" on several dams in District 69. Status of these dams were changed from Stock Dam to Irrigation Dams.

MEETINGS

Five meetings were held by the water users (Colorado and New Mexico) on the La Plata River. These meetings were held in Colorado and New Mexico.

The Division Engineer acted as arbitrator between two factions in a meeting of all the water users on the Mancos River.

I attended several annual meetings of water users in the Division.

I attended several meetings of the Southwest Board and the La Plata Conservancy Board.

PERSONNEL

One Water Commissioner is being lost next spring before the irrigation season due to age.

Two of our key water commissioners have been seriously ill part of the year, probably both will have to take retirement of some type this year.

With the necessity of better water records and the more demands for water by local users and by the States under the Upper and Lower River Compacts, the more apparent it is that we will need full time employees in many positions. In many instances this will become necessary to properly protect Colorado waters for present and future usage.

PROBLEMS

We had some good ones this year some long standing finally coming to a head. Some trying the patience of the Division Engineer, while others questioning the integrity, administrative ability and water knowledge in the administration of the job.

TABULATION OF WATER COMMISSIONS ANNUAL RESERVOIR REPORTS

District Number	Number of reservoirs reports	Area of high water line in acres	Capacity in Acre Feet	Amount in storage May 1, AF.	Amount in storage Nov. 1, Acre Feet
29	10	897	5,808	5,101	3,825
30	10	1,595	63,434	22,214	43,915
31	3	2,771	129,675	48,490	79,038
32	0	0	0	0	0
33	1	50	1,200	1,200	180
34	11	2,192	53,599	39,735	20,191
46	0	0	0	0	0
69	8	794	22,515	17,518	11,668
<u>Totals</u>	<u>43</u>	<u>8299</u>	<u>276,231</u>	<u>134,258</u>	<u>158,817</u>

	First day water was used from storage	Last day water was used from storage	Number of days water was used	Number of acre feet water was used	Number of acres irrigated from storage
29	4/1	9/30	183	6,811	2,095
30	4/20	9/30	183	27,964	22,600
31	4/25	9/30	159	54,470	40,603
32	0	0	0	0	0
34	5/15	9/30	113	32,014	51,115
33	4/29	9/4	136	920	445
46	0	0	0	0	0
69	6/5	9/30	116	12,280	155
<u>Totals</u>			<u>185</u>	<u>134,459</u>	<u>117,013</u>

TABULATION OF WATER COMMISSIONERS ANNUAL DITCH REPORTS

District	Amount in c.f.s. appro.	Total capaci- ties of ditches	First day water was used	Last day water was used	Number of days water used	Average daily amount c.f.s.	Number Acre Feet used	Number acres irri- gated
29	871.00	1,242.5	4/1	9/30	183	393.2	145,595	25,654
30	714.30	995.0	4/10	9/30	180	321.5	228,016	35,466
31	957.12	1,184.5	4/12	9/30	172	497.1	170,985	52,224
32	189.90	2230.9	4/21	9/30	160	10.0	32,119	5,177
33	539.68	514.0	3/1	9/30	214	64.3	27,534	13,087
46	57.4	55.5	5/2	9/30	152	26.1	7,932	1,729
34	1,428.0	1,487.0	3/26	9/30	209	377.6	157,853	59,575
69	106.5	97.8	4/1	9/30	162	12.8	4,173	1,230
<u>Totals</u>	<u>4,863.9</u>	<u>5,807.2</u>	<u>3/1</u>	<u>9/30</u>	<u>214</u>	<u>1,808.9</u>	<u>774,207</u>	<u>193,142</u>

Duty of water for the Division 4.008 Feet.