STATE OF COLORADO
IRRIGATION DIVISION NO. 6
STEAMBOAT SPRINGS

B. T. CHASE
IRRIGATION DIVISION ENGINEER

November 24, 1957

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

Dear Mr. Whitten:

I herewith present my annual report for Irrigation Division No. 6 for 1957.

Attached hereto are tabulations of water Commissioner's ditch and reservoir reports.

For this area, the entire past season has been a complete upset of conditions that have existed over several preceding years. ~~both for~~ I Irrigation water supply and precipitation for the period April through August were far in excess of normal. ~~and~~ Generally there was too much moisture all over the area and at the wrong time, which was more detrimental ~~rather~~ than ~~being~~ beneficial to most agricultural crops, particularly to all grain crops. The hay fared a little better but was slow to mature and harvesting ~~made~~ difficult. It was a wonderful year for the ranges and they appear to have been restored 100 percent.

First use of water for direct irrigation was on April 1, in District No. 58, and the last use for irrigation is also recorded in District No. 58 as November 5. The average number of days that water was carried is 87 and this represents practically an unrestricted use, that is, very few ditches were entirely cut off and some others ~~held~~ limited to decreed amounts

only where necessary for proper regulations. The excessive precipitation distributed throughout the season accounted for a far less demand on irrigation water than usual, and supply was far above average for the entire season.

A Soil Conservation Service early snow report dated January 4, 1957, forecast, as follows; The water supply outlook for Colorado and New Mexico remains poor for the 1957 season. The mountain snow accumulated to January 1, ranges from 60 to 75 percent of normal. In general mountain soils are dry, the most probable outlook as of this date is similar to the dry year of 1954. Snow fall during the next four months will have to be well above average to provide a normal runoff next summer, as quote" This early forecast was, of course, completely upset as the 1957 precipitation and run-off later disclosed.

At the Steamboat Springs weather station the records show that from date of Jan. 6, 1957 to July 1, (six months period) the precipitation totaled 22.58 inches. The previous five-year average for twelve months is 22.37 inches. This is representative of all other stations throughout northwestern Colorado, some areas showing a greater percent of increase.

Precipitation readings at the various weather stations from April 1st through October are shown in the following tabulation in inches, This period covering the Planting, growing and Harvesting season. The maximum precipitation record appears to have been during the month of May, starting May 7; and for fifteen of the following eighteen days the total at Steamboat Springs was 5.15 inches.

Precipitation in Inches

Station	April	May	June	July	Aug.	Sept.	Oct.	Total
Craig	1.50	3.53	3.06	.94	.92	.17		
Hayden	2.27	3.84	2.38	1.78	2.01	.40		
Meeker	2.29	4.11	2.13	2.04	3.45	.26	Records not available at this time	
Rangely	1.37	2.35	1.33	.92	3.21	.00		
Stb. Spgs	3.27	5.17	3.85	2.18	1.25	.71		
Average	2.14	3.30	2.55	1.57	2.17	.31		

The temperature readings through the above seven months period were generally below the average and shown as follows; ~~as follows; in degrees~~.

April	May	June	July	August	September	October
-1.80°	-1.30°	-1.00°	-1.10°	-0.90°	-3.20°	

Stream flow reached high stage on May 8th commencing with heavy rain together with melting snow at the lower elevations. The run off continued at a very high stage with very little variation, and no noticeable melting of snow above the 8000 to 9000 foot elevation. The high elevation runoff did not start until after June 1st and continued through to July 5th. The highest gage reading recorded during the period at the Steamboat gage station was 6.53 on June 7th. This maximum was slightly below some previous ~~former~~ years' high reading. On June 29th this year the gage was still reading up to 6.40 and slight gradual decline followed. The continual high water period on the Yampa River the past season stayed at what might be termed ~~at~~ a flood stage for 58 days. In looking back over past records, nothing could be found that could equal that length of time, the average being nearly 30 days.

It is the general opinion of farmers that the conditions the past year have been more detrimental ~~rather~~ than beneficial to them. Range conditions do show a big improvement but the farm returns are under par.

The ground and fields were too wet during the months of April and May to be properly prepared

For spring planting.

The grain crop, principally wheat, is very spotted (about a fifty-fifty average), in some areas the crop was fair, a few reported good, and some others were a total loss. A large portion of the Spring planting was frozen in the ground. That not frozen is below average yield, slow to mature, and late harvesting. The winter wheat fared better but it came through with slightly below average yield and fair quality.

The preparation of the ground for planting wheat this fall was made almost impossible due to precipitation and climatic conditions, and this will materially reduce the winter wheat acreage for next year. The wheat farmers are therefore hopeful for favorable spring planting conditions.

Both hay and grain harvesting were made difficult this Fall and extended over a much longer period of time, ~~it~~ continued into late October and, in some localities, up into November.

All usable Reservoirs in the Division were filled to capacity early in the Spring. Water stored in the reservoirs in Water District No. 58 was not called upon for any purpose during the entire season. All such reservoirs remained full until late summer or after the irrigation season, and at this time, over seventy-five percent of this said storage has been released to waste down the natural streams.

The stored water in Water Districts 57 and 44, in most cases, is the only supply for certain irrigation, and all water stored for irrigation purposes in these ~~said~~ Districts was beneficially used during the season.

It has been an easy year in some respects on the water officials. Regular adminstrative activities were confined primiraly to routine matters and nothing of controversial nature came up for any particular special attention. The season closed with no complaints of insufficient irrigation water. All complaints this year seemed to be that there was too much water and at the wrong time.

All reservoirs with storage capacity of 100 or more acre feet ~~capacity~~ were inspected during the year as per instructions from your office. These inspection results are covered by independent reports prepared for that purpose.

The Allen Basin Reservoir Company, whose ~~which~~ dam was completed last year, were permitted to start storage of water on November 1, 1956. It was not expected that the ~~average~~ run-off of South Hunt Creek, that would be available for storage in this reservoir in 1957, would ~~not~~ more than about half fill the same prior to the time that all flow would be needed for direct irrigation. It was, however, filled to capacity of 2250 acre feet, and ~~overflow~~ water was flowing through spillway by July 5th; at about the same time, a fifty foot snow drift which had covered the lower face of the dam, was nearly all gone and it was observed that an area on the hill slope north side of creek below the dam and the valley floor below the outlet was quite saturated but no flowing water. The melting snow and almost constant rains at this time were assumed to be principal cause. On July 19, a small surface slide, or rather a slide in the surface soil, showed up on the north side of the valley slope, just below the toe of the dam, which caused some of the extreme lower toe of the fill to cave off.

As a precautionary measure, on the above date an order was given to start lowering the water level in the reservoir, and during the following ten days, the water level was lowered from the 46 foot or spillway elevation to 34 feet. While wet weather was prevalent during this period of time, it was noted the surrounding ground surface had gradually drained and it could be observed that a slight seepage condition existed below the dam. The lower face of the dam eventually dried and tests were made which disclosed that all such seepage, if originating in the reservoir, was following through the shale foundation upon which the dam rests and was not in any part of the fill. This seepage was very slight, and clear and was on decrease rather than increased as time went on. Owing to otherwise excess runoff, moisture conditions, etc. this storage was not necessary the past season. The reservoir owners were, however, notified that the storage level would be limited or held to the 34-foot gage height until a proper and adequate drainage system were installed below the dam to prevent the same from weakening the lower toe of the dam and to prevent any further slides. The Reservoir Company ordered this work to be done this fall and will most likely be completed before the weather conditions get too severe.

It is noted that a relocation of the spillway has been started at the Game and Fish Department's Reese Creek Reservoir in Wales District No. 44. It appears the excavation work of the new spillway around the opposite end of the dam has been finished, and the old spillway has been filled. The contractor has apparently pulled out for the winter, with little

or no erosion protection having been placed in the new spillway. The gate was left slightly open ~~sufficient only~~ to discharge the present light stream flow only. The gage lift pit was left filled with dirt and is in-operative.

Repair work was recommended and completed in the late fall to the Trull Creek reservoir spillway control and to prevent further erosion in the spillway cut which was extremely eroded in the 1957 runoff.

Respectfully submitted

B. T. Chase

Division Engineer
Irrigation Division No. 6

TABULATION OF WATER COMMISSIONER'S ANNUAL DITCH REPORTS FOR IRRIGATION SEASON OF 1957.-

District No.	No. of Ditches Reported	Amount of Appropriation: cubic feet per second	Capacity of Ditches Sec. feet	First day Water was Used
43	63	761.91	1054.00	4 - 10
44	96	507.58	808.00	4 - 11
54	42	145.19	303.50	5 - 27
55 & 56	No. reports			
57	57	333.72	585.00	4 - 22
58	280	1534.13	1708.00	4 - 1
Total	538	3282.53	4458.50	4 - 1

District No.	Last Day Water Was used	Average No. days Water Carried	Average Daily Amt. Carried in sec. ft.	No. of Acre feet: Used
43	10 - 30	88	400.50	99,962
44	10 - 26	106	481.01	113,236
54	10 - 24	58	156.50	16,676
57	10 - 31	93	230.20	60,946
58	11 - 5	60	1173.23	143,770
Total	11 - 5	81	2441.44	434,590

District No.	Total No. Acres Irrigated
43	21,461
44	22,068
54	7,514
57	13,408
58	52,332
Total	116,784

TABULATION OF WATER COMMISSIONER'S ANNUAL RESERVOIR REPORTS FOR IRRIGATION SEASON 1957.

District No.	No. of Reservoirs reported	Area of High water Line ACRES	Capacity in Cubic feet	Quantity of Water in Reservoir May 1, cu. ft
43	None			
44	14	482	82,696,962	76,044,962
54	3	33	20,481,400	20,481,400
55 & 56	No. report			
57	13	427	170,041,889	132,358,224
58	13	597	563,856,963	563,856,963
Total	43	1539	837,077,214	792,741,549

District No.	Quantity of Water in Reservoir Nov. 1st Cubic feet	First day Water used from Reservoir	Last day Water Used from Reservoir	Average No. Days Water was Carried
44	00	5 - 10	10 - 19	66
54	00	released, not used for irrigation 1957		
57	00	5 - 9	8 - 26	96
58	326,533,101	7 - 1	7 - 18	8½
Total	326,533,101	5 - 9	10 - 19	57

District No.	Average Daily Amount Carried Cubic feet	No. of Acre feet Reservoir Water Carried	Total Acreage Irrigated from Reservoirs	Remarks
44	19.00	2970	1070	All used by Nov. 1,
54	.00	00	—	Turned out for stock
57	9.50	1780	720	½ used for irrig.
58	3.50	56	00	Practically no use.
Total	32.00	4806	1590	

District No. 57, Total Storage 3,040 acre feet for irrig.
Stored water used 1,780 for irrig.
Stored water 1,260 unused released.

District No. 58 Total storage for irrigation 13,000 ac. ft.
Stored water used for irrig. 56 " "
12,944 " "
Released prior to Nov. 1st 5,500 " "
Held over Nov. 1st 7,444 " "
For further release 1957 2,000 " "
Probable hold over storage 5,444 " "