STATE OF COLORADO

DIVISION OF WATER RESOURCES
Irrigation Division No. 5
Glenwood Springs, Colorado

L. L. FINLEY
Division Engineer

January 13, 1965

SUBJECT:

J. E. Whitten, State Engineer
232 State Services Building
1525 Sherman Street
Denver, Colorado 80203

Dear Mr. Whitten:

Enclosed herewith is my annual report for 1964. I am sorry that it is so late, but due to the sickness of one of my water commissioners I was unable to finish my report until this late date.

The field books and ditch report sheets are being sent in separate packages.

You will note the last sheet of my report lists the various trans-mountain diversions; however, the amounts are not shown. In past years the Hydrographic Department has filled in these quantities for me. Will you please ask them to do the same for me this year.

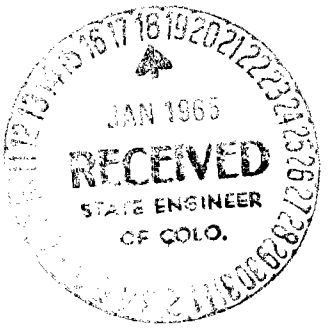
Yours truly,

L. L. Finley
L. L. Finley
Division Engineer

LLF/skm

Enclosure

Separate Cover



Glenwood Springs, Colorado
November 30, 1964

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

Dear Sir:

In compliance with the provisions of law, I transmit herewith my annual report as Division Engineer for Irrigation Division No. 5 for the year ending November 30, 1964.

On January 1, 1964, snowfall on the headwaters of the Colorado River above Glenwood Springs averaged 75 per cent of normal during October, November and December, 1963. It was more favorable over the Roaring Fork basin, averaging about 90 per cent of normal. Snowfall for the rest of the winter and spring would have to be considerably above normal before an average water supply could be expected.

Snowfall during January and February continued to be below average. There was a substantial improvement during March and a slight improvement in snow cover during April. However, because of the extreme snowfall deficiencies during the winter months, forecasts were that runoff would again be much less than average, but in excess of the flow for 1963. Weather during April and May was very cold, retarding snowmelt and making a later spring runoff season which helped in some areas.

The runoff for the Roaring Fork River at Glenwood Springs was below medians for the entire water year, October, 1963 through September, 1964. Until spring and early summer storms brought rain and snow to the area, the year

appeared heading for possible new records of low stream flow.

Roaring Fork River mean discharge for April was 434 cubic feet per second, 63 per cent of the 30-year April median; total runoff of 25,810 acre feet; cumulative runoff for seven months of the water year was 148,910 acre feet, 78 per cent of the median 192,000 acre feet. Comparative data for a year ago was mean discharge 550 cubic feet per second; total runoff 32,710 acre feet.

Following is a table showing the forecast flow and the actual flow at Glenwood Springs of the Colorado and Roaring Fork Rivers as predicted on May 1, 1963, by the U. S. Weather Service and as measured by the U. S. Geological Survey:

Water Year Flow
October, 1963, through September, 1964

	Forecast A.F.	15-year Average A.F.	% of 15-year Average	Actual Flow A.F.
Colorado River	1,280,000	1,900,000	67	1,011,000
Roaring Fork River	630,000	958,000	66	708,900

On June 9, 1964, the annual meeting to review operations of the Western Slope features of the Colorado-Big Thompson Project was held at Shadow Mountain Camp. Mr. E. D. Bloye, Water Commissioner for District No. 50 and 51, and Mr. Lewis Cowden, Water Commissioner for Districts No. 36 and 37, and I met with representatives of the Northern Colorado Water Conservancy District and Bureau of Reclamation personnel.

Denver started storing water in the Dillon Reservoir on September 3, 1963; water was released from Denver's Williams Fork Reservoir into the Colorado River to compensate for water being withheld in Dillon Reservoir; this took care of senior rights on the lower Colorado River. On November 20, storage was stopped and the natural flow was passed down the Blue River. Denver started storing again on May 4, 1964, under terms of the 1955 Federal Court decree and

a 1964 consent decree on Blue River water rights. Water was released from the Williams Fork Reservoir in exchange into Green Mountain Reservoir for water being withheld at Dillon Reservoir. This exchange was stopped on September 16, and water was released from Dillon Reservoir to fill Green Mountain Reservoir. "On paper" this was accomplished on September 30, 1964. Peak storage in Dillon Reservoir was reached on July 19 when 94,820 acre feet was in storage.

The Harold Roberts Tunnel was turned on for the first time on July 16 and has been running ever since that date.

Storage in the five larger reservoirs as of September 30 was as follows:

	1964	1963	1962	Capacity ~~of Each~~
Granby Reservoir	258,580	385,040	504,801	539,758
Green Mountain Reservoir	123,582	95,283	131,909	154,645
Williams Fork Reservoir	22,001	37,553	85,833	93,000
Willow Creek Reservoir	9,288	8,792	10,269	10,553
Dillon Reservoir	63,855	8,200	0	262,000
TOTAL	477,306	534,868	732,812	1,059,956

During the summer and early fall, several meetings were held ~~between~~ City of Denver, City of Colorado Springs, Northern Colorado Water Conservancy District, ~~and~~ Bureau of Reclamation personnel and me, attempting to work up a new form of replacement accounting for transmountain diversions made necessary by the beginning of storage in Dillon Reservoir and diversions by the Harold Roberts Tunnel. The old form had 38 columns for daily entries; the new form provides 61 columns for daily entries in order to keep track of the exchanges and replacements.

Colorado Springs purchased replacement water from Denver's Williams Fork Reservoir again this year, which enabled them to continue to divert through their Blue River transmountain diversion until July 19.

The Dillon Reservoir and Roberts Tunnel saved the City of Denver from what would have been a critical water shortage this season. On October 31, storage in Denver's five main reservoirs was 159,200 acre feet. Dillon Reservoir held 59,420 acre feet of the total.

At the present time the Roberts Tunnel is diverting 154 cubic feet per second from storage in the Dillon Reservoir. Inflow into Dillon Reservoir is being passed on down the Blue River. The Moffat Tunnel is diverting about 25 cubic feet per second which is being compensated for by releases from the Williams Fork Reservoir. Green Mountain Reservoir is making releases to compensate for withholding at Granby and Shadow Mountain Reservoirs. This will continue throughout the winter.

Due to construction of the Dillon Reservoir and Roberts Tunnel, it was necessary to give considerable attention to the installation of good headgates and Parshall Flumes in all ditches taking water out of the Blue River between Dillon Reservoir and the Green Mountain Reservoir. During the season there were 18 new steel headgates and 23 steel Parshall Flumes installed. Climax Molybdenum Co. installed 14 steel Parshall Flumes, eight of them with automatic recorders. They also installed five automatic headgates.

Construction of the Silt Project near the Town of Silt in Water District No. 39 was begun this summer. The dam, known as the Rifle Gap Dam, will be built on Rifle Creek at the junction of East and West Rifle Creeks, seven miles north of Rifle. It will be an earth-and-rock dam rising 120 feet above streambed. Total capacity of the reservoir will be 12,650 acre feet. There will also be a

Pumping Plant which will pump water from the Colorado River into the Silt Pump Canal.

The project will provide water for irrigation of 4,160 acres of land with supplemental water, fully supply 2,118 acres of land formerly irrigated but now dry, and 319 acres of new land to be put under cultivation.

Construction on the Ruedi Dam, a part of the Fryingpan-Arkansas Project in Water District No. 38, was begun this fall. The Project will divert water from the headwaters of the Fryingpan and Roaring Fork Rivers on the Western Slope to the Arkansas Valley on the Eastern Slope. The Dam will be 285 feet high and 1,060 feet long at the crest. It will be an earthfill structure. The reservoir will impound 100,000 acre feet of water as replacement for Western Slope water diverted to the Eastern Slope headwaters of the Arkansas River basin for irrigation, power and municipal purposes.

Progress continues on schedule on the City of Colorado Springs and Aurora's Homestake Water Development Project on Homestake Creek and the upper Eagle River in Water District No. 37. Water is expected to be flowing through this project to the Eastern Slope by June, 1966.

Fruit

Peach harvest was about two weeks late this year due to the late spring. Shipments for 1964 were more than double those of 1963. Last year shipments hit a 28-year low of 197,513 bushels following a hard freeze. That was nearly 29,000 bushels below the 1951 crop. Total shipments for 1964 reached 492,593 bushels; this is not a record harvest. Many peach farmers in recent years have diversified to other crops and there may never again be the large harvests of the past.

Apples, like the other fruits, were about 14 days later in maturing this year. Size and color are very good and the harvest has been near record.

The cherry crop has been about normal after an almost complete crop failure last year. Other fruits and berries crops have been about normal.

Crops

Potatoes are very small this year and acreage is about the same as last year. Hay and grains have been about average this season. Sugar beet acreage is down this year and yields are not as high as they were last year.

The outlook for next year is very good at this time. A week-long storm in mid-November was one of the best late fall moisture-producing storms in Western Colorado in recent years.

Yours very truly,

L. L. Finley

L. L. Finley
Irrigation Division Engineer

LLF/skm

1964

TRANS - MOUNTAIN DIVERSIONS

Following is a report of the Trans-Mountain Diversions from Division No.5 to Division No.1 and Dividion No.2 for the Irrigation Season.

To Division No.1	Acre - Feet
Adams Tunnel	318,400
Grand River	16,730
Berthoud	1663
Eureka	76
Williams Fork	9,360
Moffat Tunnel	64,020
Colorado Springs - Hoosier Pass	9,650
Boreas Pass	0
Total Acre-Feet	418,899

To Division No.2		Acre - Feet
Twin Lakes Tunnel		41,660
Busk Ivanhoe Tunnel		5,470
Ewing Ditch	) City of Pueblo	815
Wurtz Ditch	)	1,760
Columbine Ditch	)	1,250
Fremount Pass Ditch	)	0
Total Acre-Feet		50,955
Grand Total Acre-Feet		469,854

TRANS - MOUNTAIN DIVERSIONS

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To Division No.1	Acre - Feet
Adams Tunnel	
Grand River	
Berthoud	
Eureka	
Williams Fork	
Moffat Tunnel	
Colorado Springs - Hoosier Pass	
Boreas Pass	
Total Acre-Feet	

To Division No.2		Acre - Feet
Twin Lakes Tunnel		
Busk Ivanhoe Tunnel		
Ewing Ditch	City of Pueblo	
Wurtz Ditch		
Columbine Ditch		
Fremount Pass Ditch		
Total Acre-Feet		
Grand Total Acre-Feet		

Copy to Bureau

District No.	No. of Ditches Reported	First Day Water Was Used	Last Day Water Was Used	Average Daily Amount Diverted Sec. Feet	No. of Acre Feet Used from Stream	No. of Acres Irrigated
36	46	5-17-64	10-4-64	323.8	7421.2	5802
37	207	5- 7-64	10-5-64	534.1	155,948.0	21,680
38	118	4-21-64	11-24-64	525.8	145,174.0	31,291
39	127	11- 1-63	10-31-64	286.1	71,834.0	21,937
45	127	11- 1-63	10-31-64	451.5	88,194.0	26,571
50	107	3-25-64	10- 1-64	429.7	81,675.0	18,838
51	199	4-11-64	10-31-64	920,7	172,186.0	38,674
52	118	5-10-64	10-30-64	263.3	22,787.0	8,495
53	226	5- 1-64	10-30-64	805.3	85,028.0	25,042
70	62	11- 1-63	10-31-64	56.7	11,882.0	3,537
Totals	1,337			4,597.1	908,920.0	201,867