

ANNUAL REPORT

1979 - Water Year

Irrigation Division No. 4



January 17, 1980


Jeris A. Danielson  
State Engineer  
Division of Water Resources  
1313 Sherman Street  
Denver, Colorado 80203

Dear Mr. Danielson:

On behalf of the office and field personnel of Irrigation  
Division Four, I submit herewith the Annual Report for 1979.

Special recognition is made for highly competent Division  
Four staff from which the various responsibilities of water  
management have been attended to in a professional manner.

Respectfully submitted,

  
Ralph V. Kelling  
Division Engineer

RVK:jd

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1979 ANNUAL REPORT  
IRRIGATION DIVISION NUMBER FOUR  
MONTROSE, COLORADO

I. INTRODUCTORY STATEMENT

Division Four is located in West Central Colorado and its boundaries include the following drainage basins: Gunnison River and its tributaries, San Miguel River, Little Dolores River, Coates Creek and the Dolores River in Montrose and Mesa Counties. Larger communities in the division are Gunnison, Montrose and Delta; and the smaller communities include Ouray, Norwood, Nucla, Naturita, Cedaredge, Hotchkiss, Paonia, Uravan and Crawford. The total population for the division is approximately 74,000 people. The Gunnison River basin encompasses the largest portion of Division Four with a drainage area in excess of 8,000 square miles. The San Miguel River basin is the second largest with a drainage area of approximately 2,000 square miles. Several other small drainage basins make up the additional 2,000 square miles. A total of approximately 12,000 square miles (7,680,000 acres) of area make up Division Four. In 1979 407,249 acres were irrigated within the division and there are less than 3,000 dry land acres farmed in Division Four. The agricultural crop patterns are similar to the 1978 season with some limited new types of planting being made in order to take the place of the former acreage planted in sugar beets. Lettuce was planted in some areas and a lettuce processing plant was constructed at Olathe. Sunflowers were planted on an experimental basis in 1978; however, this was not done in 1979. The bulk of the old sugar beet land continues to be planted in corn and small grains.

SPECIAL NOTE - The Holly Sugar Company closed the Delta processing plant at the completion of the 1976 campaign and this allowed several thousands of acres of prime land to be used for different crops. Many farmers are trying different crops each year to determine what will best replace sugar beets.

Major crops are hay, corn, small grains, onions and various types of fruits (peaches, pears, plums, apricots, cherries and apples). Beef cattle and sheep are the primary livestock products with pork production increasing each year. Many small farmers are now raising some pork for market. Eleven water districts are located in Division Four: 28, 40, 41, 42, 59, 60, 61, 62, 63, 68 and 73.

Elevations range from 4,500 feet to over 14,000 feet in the San Juan mountain range. The overall climate is semi-arid with annual precipitation varying from eight to fifteen inches in much of the agricultural area. Throughout the division above average precipitation occurred in 1979; however, much of this came in the form of heavy snows on the high mountain snow ranges during the winter season. Summer moisture was limited throughout Division Four and there were no late summer rain storms to supplement the high snow runoff. Many tributaries were at flows equal to 1977 record lows by mid September. There was some fall moisture and this helped to alleviate the low flow conditions at the beginning of the fall season. This year's December, 1978-November, 1979 accumulative precipitation in Montrose was 10.68 inches which is 1.17 inches above normal. Good snow fell on the mountains of Division Four the middle of November, 1979. Depths ranging from one to three feet were recorded and at this

time, snow-pack outlooks for 1980 appear fair to good.

Farming, ranching and coal mining are the main areas of the division's economy with fruit ranching, lumber production and mineral mining and milling being important areas of employment. Uranium exploration and development continues to boom with the ore buying station located at Vancorum near Naturita, Colorado keeping busy. The western section of the division is experiencing a boom economy due to uranium, oil and gas exploration. Life in the "West End" is similar to the times of the late forties and early fifties.

Drilling and exploration have been cut back considerably with many drill rigs standing idle. This seems to be due to the uncertainty over the future of the nuclear industry caused mostly by the negative publicity from the "Three Mile Island" accident.

Coal, silver, copper, zinc and uranium are the major mineral resources with oil and gas exploration continuing to be active. Heavy exploration drilling has taken place in several areas of the division and seismic exploration continues at an active pace in the western area of Division Four.

Tourism plays a large roll in the division's economy and 1979 was a fair year for all aspects of this industry. Rumors of gasoline shortage and high costs and late arrival of warm weather slowed the season considerably.

The following activities continue to affect the division's economy:

1. Coal mining: Mine development and the many associated services

are an ever increasing factor in the economy of Division Four. Acquisition and developemnt of water supplies for the mining activities are having continued impact on the area's economy and development;

2. Continued operation of the Russell Stover Candies Company in Montrose;
3. Continued enlargement of the Colorado Ute Electrical Association in Montrose;
4. The processing and packaging of agricultural products;
5. Continued oil and gas exploration activities;
6. Exploration and development of uranium resources;
7. Mining and mineral exploration activities continue in the West End and Gunnison areas;
8. Tourist-recreation industries continue to grow;
9. U. S. Bureau of Reclamation activities include Currecanti Power Projects and the Dallas Dam. (The Dallas Project has completed construction of the relocation of Highway 550 around the reservoir site and has opened bids for the first phase of the main dam construction.)
10. Population growth involves expansion of all services;
11. The Ranchers Exploration Corporation of Albuquerque, New Mexico, has been reprocessing the old mill dump at Vancorum. This project was finished in mid 1979 and had considerable input on the economy in the Naturita-Nucla area.

The economy is agriculturally dominated and because of this, the major water usage is for irrigation. Farms and ranches are oriented to the



regional drainage systems and most water diversions are connected to the adjacent irrigable lands. Most of the large reservoirs are located on major rivers and long canals and tunnels are required to transport water to the point of use. The Currecanti Unit reservoir of the Colorado Storage Project used approximately 3,803,000 acre feet of water in production of electric power in 1979. The hydro-power plants of the three reservoirs have a combined capacity of 200,000 kilowatts. These plants are Blue Mesa, Morrow Point and Crystal. The Currecanti Unit of the Upper Colorado River Storage Project is now officially complete.

Operating water resource projects within Division Four are the Uncompahgre Project which includes Taylor Park Reservoir and the Gunnison Tunnel, Fruit Growers Reservoir, Fruitland Mesa Project, Paonia Project, Crawford Project and the Bostwick Park Project which includes Silverjack Reservoir.

Blue Mesa, Morrow Point and Crystal Reservoirs of the Currecanti are part of the Bureau of Reclamation projects. Additional bureau projects that are in various study phases are Fruitland Mesa, San Miguel, Upper Gunnison and the Uncompahgre Extension. The Dallas Creek Project has begun with the contract for highway relocation construction. Neilson Construction Company of Dolores was the prime contractor. Field offices have been constructed and field personnel continue to increase their planning and pre-construction surveys. Bids were opened on the first phase of the two-phase main dam construction and the award of the low bid contract has been made.

A statement by the manager of the Uncompahgre Project is included later in this report.

Land use planning is a subject of continued concern throughout the division. The extent of Division Four's involvement in land use planning has been to act as consultant to the Division of Water Resources planning section. Areas of greatest activity remain similar to those of last year's annual report. Subdivision development in Water Districts 59, 60, 62, 40 and 41 contain the bulk of land development activities. Development continues in the Gunnison-Crested Butte area. The Telluride area and along the San Miguel River are also active development areas. In both locations there is contact between local planning commissions and the Denver Planning Office.

The coal resource development along the North Fork of the Gunnison and Cedaredge area continues to increase land development in those parts of Water District 40. Housing is at a premium in most communities of the North Fork Valley and new development is planned for many locations in these areas. Surface flows in these locations are over-appropriated, producing many problems concerning water supplies as this land is developed. The towns of Hotchkiss, Cedaredge and Paonia are planning and developing additional supplies of water.

SPECIAL NOTE - Coal development--North Fork Valley: Seven mines are active in the North Fork of the Gunnison Valley. This year they will produce and ship more than 2,744,558 tons of coal. This coal is sent to various parts of the country and used primarily for power production. Coal production does not require great quantities of water; however, they have a need for a continuous supply and, for the most part, these companies have marginal water rights. Two companies now have a reservoir

augmentation supply plan and other applications are pending before the Division 4 Water Court. The coal companies are purchasing ranches, orchards and some separate water rights in their expanding operations.

Land ownership by county is as follows:

\*OWNERSHIP IN ACRES

<u>County</u>	<u>Private</u>	<u>Federal</u>	<u>State</u>	<u>County and Municipal</u>
Delta	305,976	397,369	3,500	2,335
Montrose	479,476	769,339	9,474	2,500
Mesa	554,504	1,562,040	220	3,556
Ouray	182,711	165,628	1,920	49
San Miguel	302,672	574,303	19,854	600
Gunnison	420,553	1,637,026	13,388	750
Hinsdale	28,999	671,752	9,377	505
Saguache	581,650	1,320,622	109,708	180

\*Information derived from Forest Service, B.L.M. and County Assessor.

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NOTE: Not all of this land is located within the boundaries of Irrigation Division Four.

## II. PERSONNEL

During 1979, various personnel actions in Division Four involved five employees. Elton Watson, Water Commissioner C transferred from Water District 40 to Senior Water Commissioner in Water District 61, Division One, and now lives in Sterling, Colorado. Robert Starr, part-time Water Commissioner A in the Cedaredge area was promoted to Water Commissioner C to replace Elton Watson and now lives in Hotchkiss, Colorado.

Additional changes in Water District 40 concerning the replacement of Bob Starr by Gregg Scott on a temporary basis for the 1979 season and the resignation of Marvin Stephens, Water Commissioner A of the Cedaredge area and his temporary replacement by James Hanrahan.

Because of the immediate need for continued attention to Robert Starr's and Marvin Stephens' responsibilities, temporary replacements were appointed for the 1979 irrigation season and formal examinations and appointments are being processed at the time of this writing.

In each annual report it is important to recognize the outstanding staff of Division Four. Without their varied abilities, the responsibilities of Irrigation Division Four would not be so ably attended.

The following is a list of personnel in the division for the year 1979 with December being estimated on the basis of 1978.

PERSONNEL

Name	Position	District	Months Worked/ Budgeted		Mileage
			Budgeted	Worked	
Richard L. Belden	WCE	42, 63, 73	Annual		15,671
Willard N. Bull	WCA	40	7 mos.	7½ mos.	4,867
Lyman D. Campbell	WCB	60	11 mos	11½ mos.	10,314
James E. Carr	WCA	40	7 mos.	8 mos.	9,626
Lloyd E. Connell	WCA	40	7 mos.	6 3/4 mos.	7,292
Charles G. David	Hydro	Staff	Annual		(18,624) State Vehicle
Richard L. Drexel	SRWC	40	Annual		9,155
Robert E. Drexel	WCB	59	6 mos.	6½ mos.	6,787
L. Jean Duncan	S	Staff	Annual		-
John S. Garber	WCB	28	7 mos.	8 3/4 mos.	10,385
Mack A. Gorrod	WCB	40	7 mos.	7½ mos.	4,339
*James T. Hanrahan	WCA	40	6 mos.	4 3/4 mos.	1,598
Edwin S. Hofmann	WCB	59,62	Annual		9,471
C. Crandall Howard	WCB	41	9 mos.	10½ mos.	9,935
Thomas Jones	WCA	40	6 mos.	6½ mos.	10,986
Ralph V. Kelling	SWRE	Staff	Annual		2,033
Thomas A. Kelly	SRWRE	Staff	Annual		8,209
Dwayne C. Mansker	WCB	1042	Annual		3,250
John L. McHugh	WCB	40	7 mos.	8 mos.	7,082
James A. Miller	WCA	40	7 mos.	6 3/4 mos.	8,130
H. Roger Noble	WCB	68	Annual		6,633
Clinton L. Oliver	WCB	61	7 mos.	8½ mos.	6,658
*Logan Gregg Scott	WCA	40	6 mos.	7 mos.	3,316

PERSONNEL

Name	Position	District	Months Worked/ Budgeted		Mileage
			Budgeted	Worked	
Robert H. Starr	WCC	40	Annual	8½ mos.	14,690
**Marvin Stephens	WCA	40	6 mos.	2 mos.	944
Stephen Tuck	WCB	40	7 mos.	7 mos.	5,831
***Elton J. Watson	WCC	40	Annual	4 mos.	2,899
Lester E. Whiting	WCB	42	7 mos.	8 mos.	8,767
Wayne Wiseman	WCA	40	7 mos.	6¼ mos.	1,571
Charley Woolley	WCB	40	7 mos.	6 3/4 mos.	5,753
David E. Woolley	WCA	40	6 mos.	6½ mos	7,321
TOTAL					203,513

State Vehicle Mileage . . . . . 13,591  
 State Vehicle - Hydro Truck . . . 18,624

\* Temporary employees with Division 4 - Procedure to appoint regular employees is in the process.

\*\* Resigned

\*\*\* Transferred to Division 1.

This report is for the period January 1, 1979 through December, 1979.

WATER COMMISSIONERS' ANNUAL MILEAGE REVIEW

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Year	Total Annual Mileage
1968	167,174
1969	149,862
1970	135,195
1971	143,852
1972	160,070
1973	157,709
1974	189,865
1975	194,997
1976	181,374
1977	209,517
1978	207,437
*1979	193,271

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\*December 1979 mileage estimated from 1978.

### III. WATER SUPPLY

#### A. Snow-Pack

Water supply forecasts for the Gunnison and San Miguel water sheds were reported to be above average. An adequate water supply was forecasted and all streams were expected to flow at an average or above average stage. Division Four's normal snow-pack area was at 100 per cent cover during the 1979 snow season. Drainage areas throughout the division recorded 140 per cent to 200 per cent of average for the final S.C.S. snow survey. High water was predicted on each major drainage system and flood damage was reported at several locations.

Snow-pack at the major ski areas in Division Four was adequate and the ski industries enjoyed a long season. Winter snow-related recreation activities were at a rapid pace with record revenues recorded.

Grand Mesa Water Users Association and Grand Mesa Conservancy District continue to be involved in weather modification programs. They have made arrangements for a five-year contract with a weather modification company located in Salt Lake City; however, during the 1978-79 winter snow season, there was no activity with this program of weather modification. The major reason this program was not activated during this season was the "bumper" precipitation on the various snow sheds involved. All snow course readings in Division Four showed well above average snow-packs and the need for cloud seeding was not necessary. Weather modification continues to be a controversial subject and would appear to be one that will remain as such for many years to come. Copies of the May, 1979 snow surveys are found at the end of this report.



\*SUMMARY OF SNOW MEASUREMENT - May 1, 1979

<u>Basin or Watershed</u>	<u>Number of Courses Averaged</u>	<u>This year's snow water as per cent of: Last Year</u>	<u>Average</u>
Gunnison	13	106	161
Surface Creek	3	87	149
Uncompahgre	3	125	155

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\*STREAMFLOW FORECASTS (1000 A.F. - Apr-Sep):

<u>Forecast Point</u>	<u>Forecast</u>	<u>% of Avg.</u>	<u>1963-77 Average</u>
Gunnison River in- flow to Blue Mesa	1200	159	754
Gunnison River near Grand Junction	2000	174	1150
Surface Creek near Cedaredge	22	145	15.2
Uncompahgre River at Colona	195	151	129

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Soil Moisture - May 1, 1979

Rated as fair-good.

\*U.S.D.A. - Water Supply Outlook

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B. Precipitation - Summer

The 1979 irrigation year began with above average precipitation throughout all areas of Division Four. The mountain snow ranges experienced as much as 150 per cent of average and most of the lowlands in Division Four also had received above average precipitation. In many instances farming lands were so saturated that crop planting was delayed several weeks.

During the summer months, there were few summer rains throughout the entire Division Four. The majority of summer water useage came from snow run-off and reservoir storage supplies.

Because of the extra dry summer season, more than average reservoir storage was used to mature the various agricultural crops; however, in spite of these conditions, storage carry-over for 1980 is at least average in most all instances. The generally dry, warm fall allowed good conditions for crop harvesting. The 1979-80 winter season has begun with several good winter storms and it is anticipated that with average precipitation, the water outlook for 1980 will be favorable. There was no hail suppression work in Division Four during the 1979 season.

\*CLIMATOLOGICAL DATA 1979

<u>County</u>	<u>Avg. Annual Temp., F<sup>o</sup></u>	<u>Depar- ture</u>	<u>Total Precip- itation, In.</u>	<u>Depar- ture</u>
Delta	53.8	-	6.16	-1.73
Mesa	52.0	.7	7.89	- .52
Montrose	50.1	1.0	9.39	.28
Ouray	44.0	-	16.95	1.99
San Miguel	46.6	2.4	22.30	-1.11
Gunnison	37.4	.3	9.58	-1.66
Hinsdale	38.7	-	15.09	-
Saguache	39.8	-3.3	9.55	1.06

\*Climatological Data Annual Summary - 1979

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### C. Floods

Flows in all areas of the division were expected to be high and in some instances flooding was anticipated. Because of high flows and unusual weather conditions, the Memorial Day weekend had flood watches for many of the streams in Division Four. Several areas were involved in considerable flooding and extensive damage was experienced, especially in the Paonia, Colorado area. One of the bridges across the North Fork of the Gunnison River in Paonia was washed out and a number of new homes that were built adjacent to the North Fork were in danger of being washed away for a period of a week or ten days. The city of Crested Butte, Colorado experienced approximately two weeks of heavy flow in Coal Creek which flows directly through town. Several work forces from the state honor farm spent four or five days in sandbagging the stream in anticipation of flood conditions through Crested Butte. Division Four office made several discharge measurements to assist Crested Butte in meeting this emergency. Again, weather seemed to have alleviated the possibility of disaster-type flooding each time the various streams reached a point of severe flooding and imminent danger to property, a cooling trend occurred and flows were reduced to a point that minimum damage took place.

### D. Water Budget

Average annual flow on the Gunnison River at Grand Junction is 1,825,000 acre feet. Throughout Division Four all types of direct flow diversions total 2,645,992 acre feet with approximately 3,155 acre feet being diverted and used in other drainages. The beneficial use of the water resources in Division Four would exceed more than three times the total

supply. The two major uses and reuses are for agriculture and power production. The Gunnison River contributes approximately 44.5 per cent of the total Colorado River discharges into Utah.

#### E. Underground Water

There is limited information relative to the underground water supply in Division Four. Ground water studies and literature are limited to a minimum number of bulletins and reports. A few deep water wells exist; however, the bulk of the ground water activity is concerned with domestic and household-use-only wells. Potentially, all formations may prove productive with the shale section having minimal water content and sands, especially of the Dakota and Entrada formations, capable of containing large volumes of water. A number of water wells in the Grand Junction area produce from the Morrison sands. During 1979, the U.S.G.S. conducted studies of potential water bearing formations in areas of Grand Mesa. Limited testings were said to indicate considerable amounts of water for municipal use during times of shortage, and with the possibility of the use of this water, lower valley water users have expressed concern on how such pumping would effect their surface and storage water rights. This office is unaware of an official report concerning these activities.

Registered wells in Division Four, calculated from the latest print-out and a count of permits, break down as follows:

<u>*Type of Wells</u>	<u>Number of Wells</u>	<u>GPM</u>	<u>CFS</u>
0 - Household Only	178	2,670	5.93
1 - Domestic	1,506	27,108	60.24
2 - Livestock	132	1,584	3.52
3 - Domestic & Stock	140	2,520	5.60
4 - Commercial	122	3,904	8.67
5 - Industrial	15	600	1.33
6 - Irrigation	84	21,000	46.66
7 - Stock & Irrigation	6	1,200	2.66
8 - Municipal	32	960	2.13
9 - Other	6	120	0.26

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Total Registered Wells . . . . . 2,221

\*Tabulated printout of November 7, 1979

F. Transmountain and Transbasin Diversions - 1979

Transmountain Diversions:

<u>Name</u>	<u>Source</u>	<u>Recipient and/ or Claimant</u>	<u>Amount A.F.</u>
Red Mountain Ditch	Mineral Creek	Ouray Ditch Co. Montrose, Colorado	108.00
Carbon Lake Ditch	Mineral Creek	Pinon Ditch Co. Colona, Colorado	63.00
St. John Ditch	E. Fk. Animas River	Charles, Gunn & Worley % W. Worley Olathe, Colorado	No Diversion Structure Not Usable
Mineral Pt. Ditch	Burrows Creek, tr. N. Fk. Animas River	W. Gibbs Ouray, Colorado	No Diversion Structure Not Usable
Larkspur Ditch	Tr. Tomichi Creek Marshall Creek	Catlin Canal Co.	135.00
Tabor	Tr. Cebolla Cr.	Colo. Div. of Wildlife Alamosa, Colorado	1,452.00
Tarbell	Cochetopa	Cochetopa Land & Wtr.Co. Saguache, Colorado	294.00
Divide Cr. Highline Feeder Ditch	Clear Fk. Muddy Cr.	F. M. Starbuck, Mgr. Silt, Colorado	1,274.00
Leon Lake	Leon Creek	Sam Oaks Eckert, Colorado	1,583.00

Transbasin Diversions:

Leopard Cr. Ditch	Leopard Creek	Harry McClure (irr.) Ridgway, Colorado	1,330.00
N. Fk. of Paxton D.	Cottonwood and Horsefly Creeks	William Hofmann Montrose, Colorado	69.00
Cimarron Feeder of the Garnet Ditch	W. Fk. of Cimarron	Unc. Valley Water Users Association Montrose, Colorado	2,340.00
Gunnison Tunnel	Gunnison River	Montrose, Colorado	259,262.00

Transbasin Diversions - continued

<u>Name</u>	<u>Source</u>	<u>Recipient and/ or Claimant</u>	<u>Amount A.F.</u>
Head & Ferrier	Currecanti Creek	H. Head & Ferrier	176.50
Lake Brennand	Anthracite, a/k/a Lake Irwin	Town of Crested Butte, Colorado	578.00
Meek Tunnel	Crystal Creek	Carton Meek Maher, Colorado	509.00
Mesa Creek Ditch	Mesa Creek	Carton Meek Maher, Colorado	332.00

#### G. Annual Diversion and Storage Records

The 1979 season completed the fifth year in which Division Four participated in the Computer Data Bank program in recording and summarizing annual diversion records. At this time, the 1975-1978 records are complete. They have been signed and are on file at the various proper offices. In general, the quality of the records is very good.

The 1979 records were keypunched by the computer center at Valley Federal Savings and Loan Association in Grand Junction, Colorado. The cost again this year was ten cents per card and this cost included keypunching, verifying and extensive editing and computation. This work greatly assisted in helping the field water commissioner in the compilation and processing of his field records. Monthly totals were computed, days used, visits made, acre feet diverted and an analysis of various types of water diverted was also included.

These various computer edits have been a great help in the preparation of the 1979 annual report and records. It should be noted that the work done by the Valley Federal Savings and Loan center has not been without some problems; however, this year's records are of a higher accuracy than past years' and Division Four is very happy with this arrangement.

It is Division Four's feeling that the computerized diversion record-keeping is of great assistance to the field commissioner in the overall performance of his responsibilities. We feel that local control over the basic data is important and are very pleased to be able to have a local organization to work with in the generating of the punch cards for our Denver A.D.P. section.



In most districts of Division Four the commissioner continues to use the field book for the recording of daily visits and diversion records. These field books are easily handled and afford an opportunity to have data to check in case of problems arising from diversion records. These field books are also helpful when special requests are made prior to the final computation of the yearly diversion records.

#### H. Reservoir Storage

Most all irrigation reservoirs in Division Four had near average carry-over storage for the beginning of the 1978-79 storage season (November 1, 1978). Blue Mesa Reservoir of the Bureau of Reclamation Currecanti Project released record discharges during the entire winter season which caused some concern among the adjacent irrigators. However, the Bureau of Reclamation estimates for runoff above Blue Mesa were such that it was possible to draw the reservoir down by several hundred thousand acre feet and still have Blue Mesa Reservoir almost completely full by mid July.

Due to the heavy snow-pack throughout Division Four, all reservoirs in the division that were able and wanted to, stored water and were able to fill prior to the beginning of the irrigation season. Blue Mesa Reservoir did not quite reach the spilling elevation, but all of the smaller Bureau of Reclamation reservoirs experienced spilling conditions for several weeks.

SPECIAL NOTE

The storage and diversion data presented in this report have been compiled from the water officials' field book notes, diaries and special edit listing of key punch cards for 1979. It is important to point out that in order to have accurate data for the 1979 irrigation season Annual Report, it is necessary that various sources of data be utilized. Even with these sources, all of the diversion and storage records noted in this report should be considered preliminary and subject to correction.

Listed below is a tabulation of storage in the division for 1979:

<u>Water District</u>	<u>Name of Reservoir</u>	<u>Amt., A.F. 11-1-78</u>	<u>Amt., A.F. Start of Irr. Season</u>	<u>Amt., A.F. 10-31-79</u>
28	Hot Springs Reservoir	119.80	603.00	43.70
28	McDonough Reservoir #1	599.60	805.00	683.50
28	McDonough Reservoir #2	165.90	741.60	201.80
28	Needle Creek Reservoir	317.50	811.90	387.70
28	Upper Cochetopa Reservoir	243.30	276.46	441.68
28	Vouga Reservoir	51.30	910.00	128.00
40	Alexander Lake Reservoir	.00	162.00	53.80
40	Arch Slough Reservoir	.00	.00	.00
40	Ault Reservoir	.00	116.00	.00
40	Bailey Reservoir	.00	434.00	.00
40	Bald Mountain Reservoir	.00	88.80	.00
40	Barren Lake Reservoir	170.10	800.00	309.50
40	Basin #1 Reservoir	.00	275.50	.00
40	Basin #2 Reservoir	.00	50.20	.00
40	Battlement #1 Reservoir	79.50	79.50	79.50
40	Battlement #2 Reservoir	913.90	870.20	870.20
40	Baxter Reservoir	318.00	318.00	318.00
40	Beaver Dam Res. (Escalante)	.00	396.50	.00
40	Beaver Res. (Minnesota Creek)	37.00	1482.80	190.40
40	Bonita Reservoir	191.30	285.80	109.00
40	Bottle Stomp Reservoir	17.00	17.00	17.00
40	Boulder Lake #1 Reservoir	.00	22.50	.00

Division tabulation of storage - continued

<u>Water District</u>	<u>Name of Reservoir</u>	<u>Amt., A.F. 11-1-78</u>	<u>Amt., A.F. Start of Irr. Season</u>	<u>Amt., A.F. 10-31-79</u>
40	Brockman #1 Reservoir	.00	16.00	.00
40	Brockman #2 Reservoir	.00	40.00	.00
40	Bruce Park Reservoir	.00	632.00	.00
40	Bull Finch #1 Reservoir	.00	78.00	36.50
40	Bull Finch #2 Reservoir	.00	40.50	.00
40	Coalby Horse Park Reservoir	217.00	499.60	106.00
40	Cabin Lake Reservoir	.00	34.00	.00
40	Calumet Reservoir	.00	16.00	.00
40	Carbonate Camp Reservoir #3	.00	5.70	.00
40	Carbonate Camp Reservoir #6	42.10	112.70	26.50
40	Carbonate Camp Reservoir #7	.00	107.50	.00
40	Carl Smith Reservoir	516.00	838.00	541.00
40	Cedar Mesa Reservoir	279.30	969.20	318.20
40	Clark Reservoir	.00	39.00	.00
40	Cole #1 Reservoir	.00	23.00	.00
40	Cole #2 Reservoir	.00	57.00	.00
40	Cole #3 Reservoir (Cherry Lane)	.00	54.10	.00
40	Cole #4 Reservoir	.00	38.00	.00
40	Cole #5 Reservoir	.00	116.80	.00
40	Columbine #1 Res. (Reynolds)	.00	176.00	.00
40	Crawford Reservoir	4548.00	13972.00	4771.00
40	Cyphers Reservoir	21.00	21.00	21.00
40	Daniels Sl. Reservoir (Reed)	167.90	228.00	115.80

Division tabulation of storage - continued

<u>Water District</u>	<u>Name of Reservoir</u>	<u>Amt., A.F. 11-1-78</u>	<u>Amt., A.F. Start of Irr. Season</u>	<u>Amt., A.F. 10-31-79</u>
40	Davenport Reservoir	.00	20.00	.00
40	Deep Slough Reservoir	56.00	498.40	11.00
40	Deep Ward Reservoir	699.00	1700.00	755.00
40	Delta City #1 Reservoir	14.00	14.00	14.00
40	Delta Control Reservoir	34.00	34.00	34.00
40	Deserted Park Reservoir	.00	35.90	.00
40	Dog Fish Lake Reservoir	.00	243.00	.00
40	Don Meek #1 Reservoir	.00	45.00	.00
40	Donnelly Slough Reservoir	85.70	276.90	121.90
40	Doughty #1 Res. (Chipmunk)	.00	48.00	.00
40	Doughty #2 Res. (Sliderock)	.00	19.10	.00
40	Dowdy Reservoir	.00	264.00	.00
40	Dreyfus Reservoir	.00	44.00	.00
40	Dugger Reservoir	162.00	212.00	139.50
40	East Beckwith #1 Reservoir	40.00	400.00	.00
40	Eggleston Lake Reservoir	808.00	2705.00	1182.00
40	Elk Park Reservoir	96.80	96.80	46.00
40	Elk Wallows Reservoir	.00	218.00	.00
40	Ella Reservoir	.00	98.00	.00
40	Ellington & Cook Reservoir	.00	24.50	.00
40	Eureka Reservoir #2	.00	53.00	.00
40	Fairmont Reservoir	.00	78.00	.00
40	Fairmount Park Reservoir	.00	30.00	.00

Division tabulation of storage - continued

<u>Water District</u>	<u>Name of Reservoir</u>	<u>Amt., A.F. 11-1-78</u>	<u>Amt., A.F. Start of Irr. Season</u>	<u>Amt., A.F. 10-31-79</u>
40	Fish Lake Reservoir	.00	68.00	.00
40	Forrest Reservoir (Finney)	.00	85.79	.00
40	Fruitgrowers Reservoir	480.30	4312.40	1558.00
40	G & M Volk Fish Pond #1	5.90	5.90	5.90
40	Goodenough Reservoir (Kiser)	60.00	148.80	31.30
40	Goodenough #2 Res. (Leroux)	100.00	791.00	125.00
40	Granby #6 Reservoir	.00	45.90	.00
40	Granby #7 Reservoir	26.20	76.10	29.40
40	Fisher Reservoir	.00	10.00	.00
40	Granby #8 Reservoir	3.10	13.30	.00
40	Granby #9 Reservoir	.00	71.90	46.20
40	Granby #11 Reservoir	51.80	775.00	76.00
40	Granby #12 Reservoir	224.90	611.00	309.60
40	Gray Reservoir	.00	423.00	.00
40	Green Mountain Dam Reservoir	.00	.00	.00
40	Greenwood Reservoir	.00	66.00	.00
40	Gregg #1 Reservoir	.00	5.00	.00
40	Gregg #2 Reservoir	.00	45.00	.00
40	Hale Reservoir	.00	33.50	.00
40	Hanson #2 Reservoir	.00	225.00	.00
40	Holly Terror Reservoir	.00	146.00	.00
40	Hotel Lake Reservoir	308.00	548.00	287.50
40	Howard Lake Reservoir	33.80	77.00	44.10

Division tabulation of storage - continued

<u>Water District</u>	<u>Name of Reservoir</u>	<u>Amt., A.F. 11-1-78</u>	<u>Amt., A.F. Start of Irr. Season</u>	<u>Amt., A.F. 10-31-79</u>
40	Hunt Reservoir	.00	124.00	.00
40	Island Lake Reservoir	557.20	1677.00	322.10
40	Kehmeier Reservoir	.00	319.50	.00
40	Kiser Slough Reservoir	14.20	512.00	94.00
40	Knox Reservoir	99.50	241.20	101.90
40	Kennicott Slough Reservoir	125.40	808.40	166.80
40	Lake Brennard Reservoir	367.00	367.00	367.00
40	Leon Lake Reservoir	237.00	2142.50	854.50
40	Leon Park Reservoir	.00	181.50	46.20
40	Lilly Pad Res. (Young Cr.)	.00	35.80	.00
40	Little Gem Reservoir	131.70	214.50	157.10
40	Little Giant #1 Reservoir	.00	30.00	.00
40	Little Giant #2 Reservoir	.00	6.00	.00
40	Little Grouse Reservoir	.00	42.10	6.60
40	Lone Cabin Reservoir	.00	163.00	.00
40	Lucky Find Reservoir	.00	66.00	.00
40	Marcott Park Reservoir	.00	446.50	.00
40	McKoon Reservoir (Blanchard	44.00	148.00	44.00
40	Meek Reservoir	.00	29.30	.00
40	Military Reservoir	.00	236.60	62.10
40	Miller Reservoir	.00	20.00	.00
40	Monument Reservoir	.00	500.00	.00
40	Morris #2 Reservoir	16.00	16.00	16.00
40	New Pond Reservoir	.00	2.00	.00

Division tabulation of storage - continued

<u>Water District</u>	<u>Name of Reservoir</u>	<u>Amt., A.F. 11-1-78</u>	<u>Amt., A.F. Start of Irr. Season</u>	<u>Amt., A.F. 10-31-79</u>
40	Onion Valley Reservoir	1311.00	9177.00	1564.00
40	Overland #1 Reservoir	.00	5193.00	.00
40	Owens Reservoir	.00	92.00	.00
40	Paonia Reservoir	1400.00	18468.00	3892.00
40	Park Reservoir	868.00	3383.40	945.30
40	Patterson #1 Reservoir	.00	78.00	.00
40	Patterson #2 Reservoir	.00	157.00	.00
40	P.C. & G. #1 Res. (Muskrat)	.00	19.40	.00
40	Pedro Reservoir	144.60	195.00	145.90
40	Pine Reservoir	.00	.00	.00
40	Pine Cone Reservoir	.00	27.00	.00
40	Pitcarin Reservoir	.00	100.00	7.10
40	Poison Springs Reservoir	70.00	123.00	.00
40	Porter #1 Reservoir	169.00	201.00	134.80
40	Porter #4 Reservoir	38.00	38.00	38.00
40	Prebble Reservoir	57.40	180.00	71.20
40	Rex Reservoir	.00	24.00	.00
40	Reynolds Res. (Reynolds Cr.)	.00	100.00	.00
40	Rim Rock Lake Reservoir	64.00	107.00	64.00
40	Rockland Reservoir	3.60	33.00	6.30
40	Roeber #2 Reservoir	.00	79.00	.00
40	Round Lake Reservoir	.00	22.50	.00
40	Ryan Reservoir	.00	31.00	.00



Division tabulation of storage - continued

<u>Water District</u>	<u>Name of Reservoir</u>	<u>Amt., A.F. 11-1-78</u>	<u>Amt., A.F. Start of Irr. Season</u>	<u>Amt., A.F. 10-31-79</u>
40	Rockwell Reservoir	.00	50.80	.00
40	Sackett Reservoir	42.60	108.00	57.80
40	Safety #1 & #2 Reservoir	.00	22.00	.00
40	Scotland Peak Reservoir	.00	109.00	.00
40	Sheep Lake Reservoir	97.10	153.00	81.50
40	Skim Milk Reservoir	.00	90.00	.00
40	Spatofore Reservoir	.00	100.00	.00
40	Stell Reservoir	.00	61.90	26.50
40	Todd Reservoir	.00	120.00	.00
40	Tomahawk Reservoir	.00	87.00	.00
40	Trickle Reservoir	.00	33.90	.00
40	Trio Reservoir	134.90	164.30	87.10
40	Twin Lake Reservoir #1	.00	87.30	.00
40	Twin Lake Reservoir #2	.00	112.00	.00
40	Tyler Reservoir	.00	169.30	.00
40	Upper Hotel Lake Reservoir	55.00	105.00	66.00
40	Van Den Berg #1 Reservoir	5.60	5.60	5.60
40	Vela Reservoir	132.00	437.00	206.00
40	Ward Creek Reservoir	36.00	307.20	72.40
40	Wash Tub Reservoir	.00	25.00	.00
40	Water Bug Reservoir	.00	57.00	.00
40	Weir & Johnson #2 Reservoir	284.50	670.40	434.00
40	Weir Park Reservoir	.00	40.70	.00

Division tabulation of storage - continued

<u>Water District</u>	<u>Name of Reservoir</u>	<u>Amt., A.F. 11-1-78</u>	<u>Amt., A.F. Start of Irr. Season</u>	<u>Amt., A.F. 10-31-79</u>
40	West #1 Reservoir	.00	400.00	.00
40	Williams Creek Reservoir	.00	47.50	.00
40	Willow Reservoir	.00	120.00	.00
40	Womack #1 Reservoir	73.00	186.30	66.70
40	Womack #2 Reservoir & #3	.00	156.20	.00
40	Womack #5 Reservoir	.00	22.90	.00
40	Young Creek Reservoir #1 & #2	182.70	796.80	182.70
40	Young Creek Reservoir #3	125.40	193.40	102.90
40	Y & S Reservoir	92.10	189.00	100.00
41	Buckhorn Reservoir	129.00	140.00	131.00
41	Citizens Reservoir	40.20	124.00	110.00
41	Garnet Mesa (Sweitzer)	1,332.00	1,332.00	1,332.00
41	Wenger #1 Reservoir	0.00	0.00	0.00
42	Anderson #1 Reservoir	.00	468.00	.00
42	Anderson #2 Reservoir	460.00	568.00	.00
42	Anderson #6 Reservoir	.00	115.00	.00
42	Bolen Reservoir	184.00	535.00	.00
42	Bolen Anderson	.00	293.00	.00
42	Carson Reservoir	637.00	637.00	521.00
42	Deep Creek Reservoir #2	349.00	349.00	.00
42	Dry Creek Res. (Chambers Res.)	.00	174.00	.00
42	Flowing Park Reservoir	735.00	735.48	.00

Division tabulation of storage - continued

<u>Water District</u>	<u>Name of Reservoir</u>	<u>Amt., A.F. 11-1-78</u>	<u>Amt., A.F. Start of Irr. Season</u>	<u>Amt., A.F. 10-31-79</u>
42	Grand Mesa #1 Reservoir	46.10	559.38	50.00
42	Grand Mesa #6 Reservoir	.00	171.00	.00
42	Grand Mesa #8 Reservoir	.00	378.93	.00
42	Grand Mesa #9 Reservoir	.00	153.32	.00
42	Hollenbeck #1 Reservoir	614.00	679.64	180.00
42	Hollenbeck #2 Reservoir	466.00	503.00	480.00
42	Juniata Reservoir	.00	2800.00	3540.00
42	Scales No. 1	.00	215.00	.00
42	Scales No. 3	.00	145.00	.00
59	Spring Creek	1140.00	2000.00	1050.00
59	Taylor Reservoir	58650.00	66120.00	56011.00
59	Kapushion Reservoir	.00	.00	.00
59	Cunningham Reservoir	.00	60.00	60.00
59	Ferris Creek Reservoir	.00	20.00	.00
59	Rainbow Lake	.00	350.00	.00
59	Meridian Lake	320.00	480.00	320.00
60	Alexander Reservoir	.00	6.00	.00
60	Gurley Reservoir	.00	8971.00	903.00
60	Lilylands Reservoir	40.73	494.00	34.64
60	Lone Cone Reservoir	30.00	1840.00	30.00
60	Miramonte Reservoir	5792.00	5792.00	5792.00
60	Mosca Livestock Reservoir #2	.00	10.00	.00

Division tabulation of storage - continued

<u>Water District</u>	<u>Name of Reservoir</u>	<u>Amt., A.F. 11-1-78</u>	<u>Amt., A.F. Start of Irr. Season</u>	<u>Amt., A.F. 10-31-79</u>
60	Mosca Livestock Reservoir #3	.00	4.00	.00
60	Palmer Reservoir	.00	2.00	.00
60	Palmer Reservoir #2	.00	2.00	.00
60	Paxton Reservoir	306.00	898.00	362.00
60	Trout Lake Reservoir	2,598.00	2,598.00	2,028.00
61	Buckeye Reservoir	200.00	1,700.00	700.00
62	Blue Mesa	685,381.00	275,460.00	665,546.00
62	Cerro Reservoir	675.00	50.00	675.00
62	Crystal Reservoir	16,240.00	16,732.00	16,575.00
62	Fish Creek #1	50.00	143.00	100.00
62	Fish Creek #2	100.00	522.00	150.00
62	Lake San Cristobal	9,786.00	9,786.00	9,786.00
62	Morrow Point	115,356.00	113,940.00	115,736.00
62	Silverjack Reservoir	2,480.00	1,364.00	1,460.00
63	Big Creek Reservoir	. . .	NO RECORD	. . .
63	Burg Reservoir	.00	122.00	.00
63	Casement Reservoir	.00	155.00	.00
63	Casto Reservoir	. . .	NO RECORD	. . .
63	Craig Reservoir	. . .	NO RECORD	. . .
68	Carrol Brown	1.00	20.00	1.50
68	Elephant Reservoir	.50	10.00	.50

Division tabulation of storage - continued

<u>Water District</u>	<u>Name of Reservoir</u>	<u>Amt., A.F. 11-1-78</u>	<u>Amt., A.F. Start of Irr. Season</u>	<u>Amt., A.F. 10-31-79</u>
68	Jacques Reservoir	1.00	45.00	.50
68	Victor Reservoir	2.00	2.00	1.00
73	Fruita Reservoir #1	.00	80.58	60.44
73	Fruita Reservoir #2	39.00	167.90	.00
73	Fruita Reservoir #3	. . .	NO RECORD	. . .
73	Mirror Lake	.00	207.00	193.00

#### IV. AGRICULTURE

Because of the great variety of agricultural lands throughout the division, almost every type of farming enterprise is found within the division. Various crops range from high mountain hay meadows and range lands to highly productive low valley grain farms. Overall crop production for the 1979 season can be estimated to be average or better. The water supply was adequate and good quality crops were grown. The Uncompahgre Project which irrigates 80,000 acres had sufficient water and was able to meet almost 100 per cent of demand. It was limited only by the various canal capacities. All reservoirs supplied their historic average, and agricultural areas dependent upon this storage produced normal production.

The upper Gunnison hay producing lands along with the San Miguel Basin hay lands all experienced average crop yields. Hay prices are low, although the market may come up as winter needs increase. The absence of summer and fall rains may have had some effect on production levels. Small grains grown along the lower Gunnison Valley and Uncompahgre Valley recorded average or better yields and the onion crops were average. Prices paid for these commodities were fair to good and farm income should be higher than the past years.

The fruit ranches along the North Fork Valley and the lower Uncompahgre Valley produced varied crops. Because of the excessive low winter temperatures, most of the peaches normally grown in these locations were "frozen out". These trees were not killed, however, did not bud or blossom this year and consequently, only in isolated locations were

peaches grown. These same weather conditions had some effect with the pears, cherries and apricots; however, not nearly the impact that was felt by the peach growers. All of the orchards were subject to damage because of large herds of elk and deer foraging through them. Heavy snow and severe cold brought the elk and deer down into the orchard ranches along all of the North Fork Valley and these particular problems have become a major concern of the fruit growers. Record apple crops were grown throughout the entire orchard areas; however, the apple growers were not without some problems. The late, warm fall slowed the maturing of the apples and the harvest was delayed about three weeks. Harvesting labor was plentiful but because of the bumper crop, storage bins were not readily available. It was estimated that total apple production will approach two million bushels and prices so far have only been fair.

Livestock production in Division Four was slightly above last year's low level and cattle and sheep prices remain very high. Weaner calves were sold for as high as a dollar a pound and pairs were reported to be sold for as high as \$900. 1979 is the second year of good stock prices and the cattle ranchers are slowly recovering from several years of marginal production. Hog production continues to grow in Division Four and pork prices are somewhat lower than 1978. Farm land in Division Four is sold at premium prices; however, with the high interest rates and severe inflation, farm real estate activity has reduced considerably from 1978. Irrigated agricultural land has sold for as much as \$2,000 an acre in two and three-hundred acre tracts and it appears to still be a good investment at this time.

Presented below is a brief agricultural resume for 1979 by counties:

<u>County</u>	<u>Average Growing Season in Days</u>	Crop Production* Irrigated Land				Livestock**	
		<u>Barley</u> (Bu)	<u>Beans</u> (Lbs)	Corn		<u>Cattle</u> <u>Calves</u>	<u>Stock</u> <u>Sheep</u>
				<u>Silage</u> (T)	<u>Feed</u> (Bu)		
Delta	146	85.0	1,600	19.0	84.0	43,500	26,500
Montrose	153	85.0	1,590	19.0	95.0	55,000	49,000
Mesa	188	73.0	1,600	17.5	93.0	53,000	52,000
Ouray	88	--	--	--	--	28,000	1,000
San Miguel	85	--	--	--	--	8,200	9,000
Gunnison	79	--	--	--	--	37,000	--
Hinsdale	65	--	--	--	--	700	--
Saguache	105	81.0	--	--	--	23,000	11,400

\*1978 Colorado Agriculture Statistics, Published July, 1979; in bu./ac.,  
lbs./ac. or T./ac.

\*\*Number of head, 1978



Crop dollar values for 1978 are as follows:

<u>County</u>	<u>Corn, Beans Grain &amp; Silage</u>	<u>Hay</u>	<u>Other Crops</u>	<u>All Crops</u>
Delta	3,064,500	3,370,000	8,667,500	11,732,000
Montrose	6,049,000	4,073,000	6,363,000	12,442,000
Mesa	4,083,500	5,852,000	7,963,500	12,047,000
Ouray	--	1,005,000	1,057,000	1,121,000
San Miguel	209,000	325,000	334,000	619,500
Gunnison	13,000	2,183,000	2,160,000	2,160,000
Hinsdale	--	86,000	94,000	94,000
Saguache	4,967,000	2,662,000	10,109,800	15,095,800

The above production data has been extracted from the 1979 Colorado Agriculture Statistics - Colorado Department of Agriculture.

The following special report is presented concerning the specific conditions that were experienced in irrigation District 40. This report has been prepared by Mr. Richard Drexel, Supervising Water Commissioner of Water District 40 and Mr. Robert Starr, Water Commissioner C, Water District 40 and we consider this an important addition to Division Four's Annual Report.

"For the second year in a row, we had an excellent snow-pack with all areas receiving well over 100 per cent of normal. This winter was colder and we had more cloudy days than normal; in fact, it was one of the most consistently cold and cloudy winters we have had for many years.

The farmers had problems planting their fields this spring because of the wet weather in May. When the rains finally ceased, there was very little moisture the rest of the summer. Even on Grand Mesa there were few rains of any consequence during the summer months.

The run-off was excellent with flow remaining in many ditches with junior decrees into the month of July. From May 22nd to June 4th, there was some flooding along most of the drainages with the North Fork and the Gunnison River being monitored twice a day and reported to Bill Mattern of the Denver office. At the peak there was about 11,500 c.f.s. passing the gaging station at Delta on the Gunnison River which did not include the Uncompahgre River.

In the early summer we anticipated a large carry-over of reservoir water because all reservoirs filled and the direct flow held up into July; but this did not materialize due to the hot dry summer. The carry-over is about

the same as last year with the exception of the Fruitgrowers and Paonia Reservoirs which have a larger carry-over than last year.

The apple growers are still having their problems. A bumper crop was grown in the valley in spite of some early freezing with an estimated two million bushels to be picked. The late spring and the hot fall weather caused the apples to be late in maturing and especially failing to color properly. This delayed the starting of the harvest and when they did start picking, it was soon apparent there would be a scarcity of bins. Most growers would lay off their pickers a couple of days a week so the packing sheds could catch up on supplying the bins. Then on Sunday night of the 21st of October, the temperatures got down to about 16° which froze what apples were left on the trees. Some orchard men had continued to pick during the scarcity of bins and piled them under the trees and covered them with straw which saved them. One estimate was that the whole valley lost 50,000 bushels. It froze so hard that very few apples could even be salvaged for juice or applesauce.

The price of apples remains quite low for this time of year and growers are hoping for an improvement on the winter holidays approach. The top price for the best grade apple is about \$10. One advantage was the labor situation. There were adequate pickers for the harvest.

Lettuce was tried once again on a small scale with about 300 acres being planted this year. Some farmers had to plow their crop under because of the hot windy weather that prevailed just before harvest; however, most of them will try again next year.

Evidently, efforts to raise sunflowers on a commercial basis proved unsuccessful in 1978 since no appreciable acreage was planted to sunflowers this year.

Other crops normally grown in the valley such as small grains, onions, corn, beans, alfalfa and pasture grew in abundance because of the water supply and good growing season. As usual, most of the small grain grown was for Coors brewing company in Golden which pay a premium for top quality Moravian barley. The valley is still in need of another cash crop to take the place of sugar beets.

Cattle prices appear to be the bright spot in the agriculture industry with prices of all classes exceeding last year's by quite a margin with weaner calves bringing \$1.00 per pound in some instances.

Growth in population still seems to be the topic of concern for the area. Most of the growth can be attributed to coal companies anticipating increasing their production and new companies coming into the area. Most of the increase in mine activity is in the North Fork Valley; however, Grand Mesa Coal is planning on increasing its production to 300,000 tons a year in the Coalby district. Tomahawk Coal Co., which is an open pit mine, is also continuing to mine coal as demand warrants. It is located near George Creek.

Grand Mesa Coal Company plans on converting the old sugar silos, which they bought from Holly Sugar, to coal silos reconstructing them to allow loading directly into coal cars. They eventually plan on hiring about 60 employees.

The area cities are continuing to upgrade their water systems. Delta and the surrounding area will be supplied with water from Project 7 in the coming year. Their present water supply from Grand Mesa remains adequate at the present time with five of their reservoirs remaining full or nearly so, going into the winter months. Cedaredge continues to purchase more water for their future needs and also built a one-million gallon storage reservoir this summer. This has proven very beneficial in cutting down their peak flow demands and were able to cut down in their total flow for the summer.

This year can be considered one of the best water years we have had for a long time.

Special Report from Water District 40

Richard L. Drexel, Senior Water Commissioner

Robert H. Starr, Water Commissioner C

## V. COMPACTS AND COURT STIPULATIONS

The Colorado River Compact of 1922 and the Upper Colorado River Basin Compact of 1948 apply to all waters in Division Four. The lower basin states can put a call on any series of water-short years based on the long-term average flow at Lee Ferry. This year there was no occasion that involved administration of water in Division Four relating to these compacts.

## VI. DAMS

With a good snow-pack and nearly average carry-over storage levels, some reservoir problems were anticipated in the spring and summer of 1979. However, only a few minor problems occurred. The list of various reservoirs that have been involved in special repairs, maintenance programs and official restrictions have had some changes, but for the most part, remain not changed from 1978. The Vouga Reservoir located in Water District 28 was enlarged to nearly twice the original capacity and did experience some minor cracking and several washouts on the spillway canal system. This reservoir, along with several other problem reservoirs, were inspected by the dam inspectors from the Denver office; however, for the most part, only problem structures were looked at this year due to their involvement with the inspection of structures under the National Dam Safety Program.

The City of Grand Junction completed the enlargement of Juniata Reservoir in Water District 42 which approximately doubled the storage for Grand Junction water supply. At the time of this report, Juniata Reservoir contained more storage than the previous total capacity for this reservoir.

Of the several hundred reservoirs and dams in Division 4, most are regulated and inspected by field water commissioners many times during the irrigation season. These men begin to make their observations before the snow leaves the reservoir areas and are involved in the administration with these reservoirs until late fall. They are alert to possible trouble-spots and continued communication between the Montrose office and field commissioners keep all the necessary personnel of Division of Water Resources current on the conditions of most reservoirs. There were no failures of dam structures during the 1979 season. The following table lists the various structures that are involved in official restrictions as of the date of this report.

Reservoir restriction orders are in effect as follows:

<u>Name</u>	<u>Water District</u>	<u>Date</u>	<u>Restrictions</u>
Lone Cabin	40	8-9-72	5' below lowest embankment.
Waterbug	40	8-9-72	5' below embankment. Repairs made; no notice of restriction being lifted.
Beaver	40	Verbal, fall '73	Not over 75' without permission on gage; may fill late; were allowed to fill and spill if seepage did not exceed 3.00 cfs.
Granby No. 12	40	10-25-76	7' below lowest point on crest of dam.
Dogfish	40	11-15-76	Restriction rescinded.
Meridian Lake Park Dam	59	6-18-79	Not accepted for storage.
Hidden Treasure	61	Verbal, fall '73	Enlarge channel opening at base of dam.

Reservoir restriction orders continued

<u>Name</u>	<u>Water District</u>	<u>Date</u>	<u>Restrictions</u>
Gurley	60	5-7-79	Restriction rescinded.
Fullmoon	68	10-22-79	Storage restriction to 5' below lowest

Livestock Water Tanks - Permits Issued 1979:

<u>Name</u>	<u>Stream</u>	<u>Height</u>	<u>Cap., A.F.</u>	<u>Permit No.</u>
Adobe Pond #1	SE28-50N- 9W	15.0	6.00	15591
Grosse-Rhode #1	SE 3-13S-92W	12.0	2.00	15652
Muddy Creek #1	SE10-42N-10W	14.0	1.75	15654
West #1 - 78	SE34-45N-15W	17.1	.25	15700

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Inspections were made of several livestock water tanks during the 1979 season. There were no problems of any consequence concerning stock water tanks for this season.



VII. WATER RIGHTS

A. Tabulation

The 1978 Water Right Tabulation was published according to the time table set forth in the Colorado Statutes and copies were delivered to all Water Commissioners and County Clerks in Division 4. Errors are still being identified in the new tabulation and corrections are made as time becomes available.

B. Referee Findings and Decrees

<u>Type of Application</u>	<u>No. Received Dec. 1978 thru Nov. 1979</u>
Underground Water Rights	41
Change of Water Rights	44
Plan for Augmentation	6
Water Rights (Surface)	138
Diligence (Conditional)	75
To Make Absolute	28
Water Storage Rights	40
Applications Received in Water Court	367
Structures filed on	530
*Number of Referee Consultations	All Cases

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\*Division Four's Division Engineer submits monthly recommendations to the Water Court on all published resume water cases.

"W" decrees for 1978 and part of 1979 have been keypunched and edited and sent to the Denver office of the Division of Water Resources for tabulation update. 1979 concludes the first complete year of the Honorable Robert A. Brown serving as Water Judge for Division Four. Judge Brown has been involved in numerous water hearings and in some instances, has disqualified himself because of conflicts of interest and the Honorable Donald A. Carpenter, retired Water Judge from Division One has heard these particular cases. Mr. Elra L. Wilson continues to serve as Water Referee for Irrigation Division Four.

VII. ORGANIZATION

A. Water Conservation and Conservancy Districts:

Upper Gunnison River Water Conservancy District, % Rial Lake, Chairman, Gunnison, Colorado 81230.

Tri-County Water Conservancy District, % C. A. Cannon, Manager, 601 North Park, Montrose, Colorado 81401.

Crawford Water Conservancy District, Don Little, Manager, Crawford, Colorado 81415.

Southwest Colorado Water Conservancy District, % Fred Kroeger, La Plata County Courthouse, Durango, Colorado 81301.

Bostwick Park Water Conservancy District, % Frank Woodrow, Attorney, 144 South Uncompahgre St., Montrose, Colorado 81401.

Grand Mesa Water Conservancy District, % Bud Burgess, Cedaredge, Colorado 81413.

North Fork Water Conservancy District, % John Neill, Secretary, Hotchkiss, Colorado 81419.

Fruitland Mesa Water Conservancy District, % Carton Meek, President, Maher, Colorado 81421.

Colorado River Water Conservation District, % Roland Fisher, Secretary, Glenwood Springs, Colorado 81601.

B. Water Related Organizations

Big Ditch Co., % Barbara Hood, Secretary, Cedaredge, Colorado 81413.

Grand Mesa Water Users Association, % Barbara Hood, Secretary, Cedaredge, Colorado 81413.

Gunnison River Water Users Association, % Jerry Goldsmith, Cedaredge, Colorado 81413.

North Fork Conservancy District, % John Neil, Secretary, Hotchkiss, Colorado 81419.

W.D. 28

Arch Ditch Co., % Deno Piloni, Gunnison, Colorado 81230

Hot Springs Reservoir Co., % W. M. Bauer, Gunnison, Colorado 81230

Needle Creek Reservoir Co., % Ty Watson, Gunnison, Colorado 81230.

Vouga Reservoir Co., % Geo. Steenbergen, Gunnison, Colorado 81230.

W.D. 40

Alfalfa Ditch Co., % Sam Oaks, President, Eckert, Colorado 81418.

Big Ditch Co., % Steve Palmer, President, Cedaredge, Colorado 81413.

Bonafide Ditch Co., % Alvin Pfifer, Delta, Colorado 81416.

Bone Mesa Domestic Water Co., % Warren Cockroft, Paonia, Colorado 81419.

Cattlemans Ditch Co., % George Tracy, Maher, Colorado 81421

Cedar Mesa Ditch & Reservoir Co., % Bob Phillips, Secretary, Cedaredge, Colorado 81413.

Childs Ditch Co., Clarence Fogg, Cedaredge, Colorado 81413.

Coalby Domestic Pipeline, Archie Peterson, President, Cedaredge, Colorado 81413.

Crawford Clipper Ditch Co., % Bill Linman, President, Crawford, Colorado 81415.

Crawford Conservancy District, % Don Little, Manager, Crawford, Colorado 81415.

Crawford Pipeline, % Town of Crawford, Crawford, Colorado 81428.

Fire Mountain Canal Co., % Mrs. Ora N. Housewert, Secretary, Hotchkiss, Colorado 81419.

Fruitland Irrigation Co., % Wm. Mugford, Secretary, Crawford, Colorado 81415.

Fruitland Mesa Conservancy District, % Carton Meek, Maher, Colorado 81421.

Grand View Canal Irrigation Co., % Don Reed, President, Crawford, Colorado 81415.

Hartland Canal Co., % Kenneth Johnson, Secretary, Delta, Colorado 81416.

Hotchkiss Pipeline, % Town of Hotchkiss, Hotchkiss, Colorado 81415

W.D. 40 - continued

Leroux Creek Water Users Association, % John Neil, Secretary, Hotchkiss, Colorado 81419.

Lone Cabin Ditch & Reservoir Co., % Clarence Achziger, Paonia, Colorado 81428.

Lone Pine Ditch Co., % Emil Cozzeto, Secretary, Cedaredge, Colorado 81413.

Minnesota Ditch & Reservoir Co., % Grant Farnsworth, Paonia, Colorado 81428.

Needle Rock Ditch Co., % Harold Cunningham, Crawford, Colorado 81415.

North Delta Canal Co., % James Winkler, President, Delta, Colorado 81416.

North Fork Farmer Ditch Co., % Jess Campbell, Paonia, Colorado 81428.

Orchard City Irrigation District, % Mrs. Russel England, Secretary, Austin, Colorado 81410.

Orchard City Municipal Water Co., Wesley England, Manager, Austin, Colorado 81410.

Overland Ditch Co., % Billy Varner, President, Hotchkiss, Colorado 81419.

Paonia Ditch Co., % Merle Lund, Paonia, Colorado 81428.

Paonia Pipeline, % Town of Paonia, Paonia, Colorado 81428.

Relief Ditch Co., % Keith M. Bond, Delta, Colorado 81416.

W.D. 40 - continued

Saddle Mountain Ditch Co., % James Ayer, Crawford, Colorado 81415.

Shepherd-Wilmot Ditch Co., % Jess Campbell, Paonia, Colorado 81428.

Short Ditch Co., % Warren Cockroft, Hotchkiss, Colorado 81419.

Sunshine Mesa Domestic Water Co., % Helen Quain, Secretary, Route 1,  
Hotchkiss, Colorado 81419.

Surface Creek Ditch & Reservoir Co., % Jene Young, President, Cedaredge,  
Colorado 81413.

Terror Ditch & Reservoir Co., % William O'Bannon, Paonia, Colorado 81428.

Grand Mesa Water Users Association, % Lester Womack, President, Eckert,  
Colorado 81418.

W.D. 41

Chipeta Water Co., % Jim Roberts, Manager, Montrose, Colorado 81401.

Menoken Water Co., % Ray Weaver, President, Montrose, Colorado 81401.

Uncompahgre Valley Water Users Association, % John Bigham, Manager,  
Montrose, Colorado 81401.

W.D. 42

Grand Mesa Reservoir Co., % John Whiting, President, Whitewater, Colo-  
rado 81527.

W.D. 42 - continued

Kannah Creek Water Users Association, % W. D. Bradbury, President, White-water, Colorado 81527.

Redlands Water & Power Co., % Jim Rankin, Secretary, 768 North Avenue, Grand Junction, Colorado 81501.

W. D. 60

Colorado Cooperative Ditch Co., % Roy Knickerbocker, Secretary, Nucla, Colorado 81424.

Farmers Water Development Co., Ivan McKinny, President, Norwood, Colorado 81423.

Lilylands Canal & Reservoir Co., % Marshall Hughes, President, Norwood, Colorado 81423.

Lone Cone Ditch & Reservoir Co., % Raymond Snyder, Secretary-Treasurer, Norwood, Colorado 81423.

San Miguel Conservancy District, % Bill Bray, Redvale, Colorado 81431

Wrights Mesa Conservancy District, % Steve Herndon, Norwood, Colorado 81423

W. D. 61

Paradox Valley Canal & Reservoir Co., % Wyvonna Irish, Secretary, Paradox, Colorado 81429.

Ray Ditch Co., % Charles Proctor, Secretary, Paradox, Colorado 81429.



W.D. 62

Big Cimarron Canal & Reservoir Co., % Frank Woodrow, Attorney, 144  
South Uncompahgre St., Montrose, Colorado 81401.

W.D. 68

Alkali No. 1 Ditch Co., Inc., % Earl Wick, Secretary, Ridgway, Colorado  
81432.

Alkali No. 2 Ditch Co., Inc., % Dick Barker, Secretary, Ridgway, Colo-  
rado 81432.

Dallas Ditch Co., Inc., % Peter Decker, Secretary, Ridgway, Colorado 81432.

IX. WATER COMMISSIONER'S SUMMARY - 1979

Division 4

Direct flow diversions (A.F.) .....	2,645,992
Reservoir storage (A.F.) .....	763,392
Amount delivered from storage .....	3,928,977
Acres Irrigated .....	407,249
Number of ditches .....	2,584
Standard administration .....	1,925
Semi-standard administration .....	631
Number of daily ditch reports .....	43,205
Number of reservoirs served .....	223
Power diversions (A.F.) .....	4,295,118

District 28

Direct flow diversions (A.F.) .....	208,055
Flow diverted to reservoir storage (A.F.) .	1,994
Amount delivered from storage .....	1,994
Acres irrigated .....	33,781
Number of ditches .....	216
Standard administration .....	195
Semi-standard administration .....	21
Number of daily ditch reports .....	1,911
Number of reservoirs served .....	6
Average demand (flow & reservoir) AF/AC ...	6.21
Power diversions .....	0

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 40

Direct flow diversions (A.F.) .....	478,870
Flow directed to reservoir storage (A.F.)..	76,110
Amount delivered from storage .....	67,037
Municipal and other .....	3,671
Acres irrigated .....	137,101
Number of ditches .....	780
Standard administration .....	696
Semi-standard administration .....	76
Number of daily ditch reports .....	27,373
Number of reservoirs served .....	164
Average demand (flow & reservoir) AF/AC ...	3.98
Power diversions .....	0

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 41

Direct flow diversions (A.F.) .....	789,842
Flow diverted to reservoir storage (A.F.) .	26
Amount delivered from storage .....	3,300
Acres irrigated .....	88,646
Number of ditches .....	79
Standard administration .....	79
Semi-standard administration .....	0
Number of daily ditch reports .....	1,338
Number of reservoirs served .....	4
Average demand (flow & reservoir) AF/AC ...	8.95
Power diversions .....	7,061

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 42

Direct flow diversions (A.F.) .....	523,843
Flow diverted to reservoir storage (A.F.) .	5,885
Amount delivered from storage .....	851
Acres irrigated .....	10,039
Number of ditches .....	56
Standard administration .....	41
Semi-standard administration .....	15
Number of daily ditch reports .....	3,765
Number of reservoirs served .....	18
Average demand (flow & reservoir) AF/AC ...	5.05
Power diversions .....	474,042

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 59

Direct flow diversions (A.F.) .....	253,816
Flow diverted to reservoir storage (A.F.) .	86,112
Amount delivered from storage .....	0
Acres irrigated .....	35,220
Number of ditches .....	262
Standard administration .....	205
Semi-standard administration .....	56
Number of daily ditch reports .....	1,977
Number of reservoirs served .....	4
Average demand (flow & reservoir) AF/AC ...	7.14
Power diversions .....	0

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 60

Direct flow diversions (A.F.) .....	129,095
Flow diverted to reservoir storage (A.F.) .	37,783
Amount delivered from storage .....	29,631
Acres irrigated .....	29,070
Number of ditches .....	330
Standard administration .....	197
Semi-standard administration .....	133
Number of daily ditch reports .....	1,714
Number of reservoirs served .....	10
Average demand (flow & reservoir) AF/AC ...	5.46
Power diversions .....	11,015

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 61

Direct flow diversions (A.F.) .....	12,957
Flow diverted to reservoir storage (A.F.) .	2,110
Amount delivered from storage .....	552
Acres irrigated .....	3,192
Number of ditches .....	83
Standard administration .....	47
Semi-standard administration .....	36
Number of daily ditch reports .....	1,209
Number of reservoirs served .....	1
Average demand (flow & reservoir) AF/AC ...	4.23
Power diversions .....	0
Storage to municipal .....	15

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 62

Direct flow diversions (A.F.) .....	120,129
Reservoir storage (A.F.) .....	552,999
*Amount delivered from storage .....	3,824,823
Acres irrigated .....	38,000
Number of ditches .....	308
Standard administration .....	243
Semi-standard administration .....	65
Number of daily ditch reports .....	1,170
Number of reservoirs served .....	8
**Average demand (flow & reservoir) AF/AC	3.71
Power diversions .....	3,803,000

\*Includes delivered from the Currecanti system.

\*Includes 116,631 A.F. from Taylor Reservoir.

\*\*Adjusted to not include Taylor Reservoir and Currecanti System releases.

SPECIAL NOTE FOR DISTRICT 62 ONLY:

Water used by Uncompahgre Project from Gunnison River and Reservoirs .....	259,266 A.F.
Silverjack Reservoir storage: Irrigation - 10,719 Fish & river - 11,174	
TOTAL	21,893

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 63

Direct flow diversions (A.F.) .....	17,869
Flow diverted to reservoir storage (A.F.) .	120
Amount delivered from storage .....	545
Acres irrigated .....	3,313
Number of ditches .....	82
Standard administration .....	53
Semi-standard administration .....	17
Number of daily ditch reports .....	956
Number of reservoirs served .....	0
Average demand (flow & reservoir) AF/AC ...	5.56
Power diversions .....	0

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 68

Direct flow diversions (A.F.) .....	101,876
Flow diverted to reservoir storage (A.F.) .	125
Amount delivered from storage .....	100
Acres irrigated .....	24,488
Number of ditches .....	352
Standard administration .....	142
Semi-standard administration .....	203
Number of daily ditch reports .....	1,210
Number of reservoirs served .....	5
Average demand (flow & reservoir) AF/AC ...	4.16
Power diversions .....	0

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.

District 73

Direct flow diversions (A.F.) .....	9,640
Flow diverted to reservoir storage (A.F.) .	128
Amount delivered from storage .....	144
Acres irrigated .....	4,399
Number of ditches .....	36
Standard administration .....	27
Semi-standard administration .....	9
Number of daily ditch reports .....	582
Number of reservoirs served .....	3
Average demand (flow & reservoir) AF/AC ...	2.22
Power diversions .....	0

NOTE: Average demand AF/AC is adjusted to include only that water that has been used for irrigation.



1979

ANNUAL SUMMARY - DIVISIONS  
ACRE FEET (11-1-78 thru 10-31-79)

Divisions	Non-Exempt Wells #	Ditch Structures Reported #	IRRIGATION			CURRENT YEAR		TRANS-MOUNTAIN	
			Direct Diversions To Irrigation	Diversions To Storage	Storage To Irrigation	Acres Irrigated	Export	Div. to Div. Import	
1									
2									
3									
4	215	2,584	2,645,992	763,392	111,602	407,249	3155	1754	
5									
6									
7									
TOTAL									

Divisions	MUNICIPAL			INDUSTRIAL		RECREATION Storage - Wildlife Parks	ACTUAL STORAGE For Year All Reservoirs	# Decree Applications	# Water Court Applications
	Direct Diversions	Diversions To Storage	Storage Releases	Direct Diversions	Diversions To Storage				
1									
2									
3									
4	30,395	11,833	11,833	4,319,058	3,839,468	1,018,947	1,028,085	530	367
5									
6									
7									
TOTAL									

NA - No water available

NU - Non use

NR - No record

TABLE A

DIVISION SUMMARY - DIVISION NO. 4

Direct Flow Diversions

1979

Water District	Total Ditches Reported			Irrigation Diversions Ac. Ft.	No. of Acres Irrigated	Ac. Ft. Per Acres	Industrial, Fish Use Diversions A.F.	Dom. & Mun. Use Diversions A.F.		Recreation Use Diversions A.F.	Trans-Mtn. Diversions A. F.	Total Diversions A. F.	No. of Daily Ditch Rpts.	Delivered to Compact Cmtmt.A.F.F.
	Active	Inactive	NA					NU	NR					
28	195	0	0	21	33,781	6.21	880	0	1,403	429	210,767	1,911	0	
40	780	0	45	46	137,101	3.32	11,856	Dom & Mun. 3,671 Stock 5,804	0	2,857	478,870	27,373	0	
41	70	0	0	0	88,646	7.40	8,147	Dom & Mun. 7,061 Stock 11,147	1,086	0	789,842	1,121	0	
42	41	0	3	12	10,039	4.11	474,042	8,576	0	0	523,843	3,765	0	
59	205	11	27	19	35,220	7.03	99	5,956	0	0	253,816	1,845	0	
60	197	0	18	4	29,070	2.55	18,934	Dom & Mun. 1,828 Stock 640	10,613	0	129,095	1,714	0	
61	47	3	25	6	3,035	3.60	0	Dom & Mun. 539 Stock 1,483	0	0	12,957	1,209	0	
62	243	20	45	0	38,000	3.16	3,803,000	1,300	0	1,452	3,935,893	626	0	
63	53	0	8	17	3,313	5.05	0	1,149	0	0	17,869	956	0	
68	149	0	72	103	24,488	4.16	2,100	Dom & Mun. 267 Stock 5,416	104	171	109,834	1,210	0	
73	27	0	6	3	4,399	2.14	0	48	0	0	9,688	582	0	
Total	2,007	34	249	231	407,092	5.03	4,319,058	30,395 Stock 24,490	13,206	4,909	6,472,474	42,312	0	

TABLE B

## DIVISION SUMMARY - DIVISION NO. 4

## Storage Report - Acre Feet

1979

Water Dis-district	Amount in Storage Acre Feet			Actual Amt. Diverted to Storage During Season	Delivered from Storage to Irrigation	Storage to Industrial/Power Use	Storage for Municipal Use	Storage for Recreation Use	Storage to Projects
	11-1-78	6-1-79	10-31-78						
28	1,488	4,148	1,886	2,660	2,262	0	0	1,403	0
40	15,144	91,254	23,295	76,110	66,042	5,075	995	90,622	28,531
41	1,863	1,512	1,210	25	11	0	1,300	1,087	0
42	3,142	7,179	4,771	5,885	851	0	7,103	0	0
59	60,110	69,030	60,110	44,610	0	0	0	104,220	0
60	8,767	20,617	9,140	37,783	29,731	9,570	1,095	20,617	11,636
61	200	1,700	700	2,110	552	0	15	1,700	0
62	830,068	430,273	810,028	552,999	11,464	3,824,823	1,300	799,246	11,000
63	0	277	0	277	545	0	0	0	0
68	1,720	1,845	1,715	125	100	0	25	52	0
73	0	455	253	129	144	0	0	0	0
Total	922,502	628,290	913,108	722,713	111,702	3,839,468	11,833	1,018,947	51,167

WORKLOAD AND STATISTICAL INDICATORS

- Statistics -

<u>Description</u>	<u>1978-79</u>
Acre Feet Water Used	6,472,474
Acre Feet Diverted for Agricultural Use	2,048,053
Acre Feet Diverted for Industrial Use	4,319,058
Acre Feet Diverted for Recreational Use	13,206
Acre Feet Diverted for Urban Use (Municipal)	30,395
Acre Feet Delivered to Compact Commitment	None
Acre Feet Water Stored (Maximum)	1,028,085
Acre Feet Water Divisions Transbasin Diversion	4,909
Acres Irrigated	407,092
Ditches, Wells & Reservoirs Administered (No Wells)	2,521
Daily Ditch Reports	42,312
Acre Feet Water Delivered from Storage	111,602

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## UNCOMPAHGRE PROJECT

### 1979 Report

Under the terms of the contract between the Water and Power Resources Service and the Uncompahgre Valley Water Users Association, approved August 4, 1931, the operation and maintenance of the Uncompahgre Project was taken over by the Association on January 1, 1932.

The Project irrigation system includes 575 miles of irrigation canals and laterals, including 7.2 miles of tunnels and 5.1 miles of siphons. The Project drainage system includes 204 miles of open drains.

The water content of the snow on the Uncompahgre River watershed measured at the Ironton Park snow course was +173% of normal on May 1, 1979. Current readings are 13.8 inches of moisture vs a norm of 8.0 inches.

Adequate water supplies were available throughout the entire irrigation season. The only exception to this was the West Canal, where 90 - 100% was maximum water deliveries.

Taylor Dam filled and spilled on June 27, 1979. Spilling continued for the next 45 days or until August 10, 1979. Maximum storage was 106,200 A.F. with a maximum spill of 900 S.F. Taylor Dam storage at November 1, 1979 was 82,760 A.F.

Several serious operating difficulties were caused by canal bank slides on the West Canal and M & D Canals. The West Canal had two slides in 1979, milepost 3.32 and 16.44. Again in 1979 the slide on the M & D at milepost 4.30 required fill dirt (adobe soil) on the lower bank, plus recleaning of some drains at the slide toe. By September all three slides were basically stabilized.

In the past 70 years, the M & D Canal has lost 20 - 25% of its carrying capacity. During 1979 we completed a major cleaning project of 5 miles of this canal. It was cleaned from milepost 2.80 to milepost 7.80.

To date \$1,129,590.00 has been spent on the Gunnison Tunnel Program as of September 30, 1979. This Association is now studying a \$14,000,000 R & B program on the Gunnison Tunnel and balance of this project.

Rehabilitation of major structures included 47 reinforced concrete drop structures. We have extended the life over 61 drop structures by the use of the "Shot Crete" equipment.

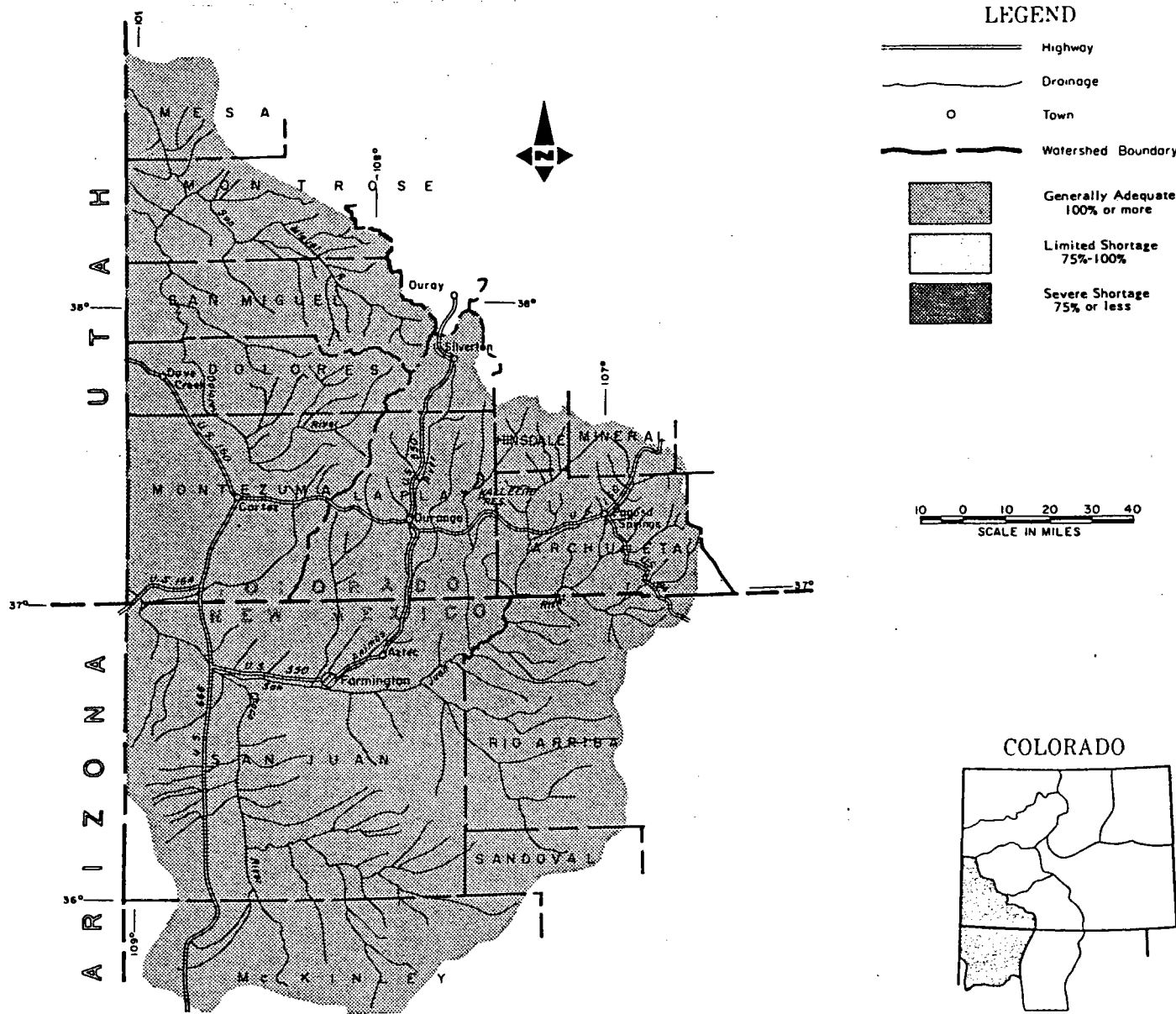
UNCOMPAHGRE VALLEY WATER USERS

John W. Bigham, Manager

WATER SUPPLY OUTLOOK  
 FOR THE SOIL CONSERVATION DISTRICTS IN THE  
 SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN  
 WATERSHEDS IN COLORADO AND NEW MEXICO

as of  
 MAY 1, 1978

A STATEMENT OF WATER SUPPLY AND DEMAND FOR THE SOIL CONSERVATION DISTRICTS IN THE SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN WATERSHEDS IN COLORADO AND NEW MEXICO AS OF MAY 1, 1978.



**YOUR WATER SUPPLY**

SNOWPACK MEASUREMENTS TAKEN NEAR THE FIRST OF MAY INDICATE WATER CONTENTS MUCH HIGHER THAN NORMAL FOR THIS TIME OF YEAR. SNOWPACKS HAVE MELTED AT BELOW NORMAL RATES DUE TO COOL, CLOUDY WEATHER DURING THE LAST PART OF APRIL. LOW ELEVATION SNOW IS BEGINNING TO DISAPPEAR BUT DEEP SNOWPACKS STILL REMAIN IN THE MAJOR WATER PRODUCING AREAS. STREAMFLOWS HAVE INCREASED AND SHOULD CONTINUE TO DO SO UNTIL MID-JUNE. THE ANIMAS RIVER AT DURANGO SHOULD REACH A PEAK OF 8,200 CUBIC FEET PER SECOND ON ABOUT JUNE 15. WATER SUPPLIES WILL BE EXCELLENT THROUGHOUT THE

**STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September**

FORECAST POINT	Forecast	% of Average	1963-77 Average
Animas River at Durango	800	188	425.0
Dolores River at Dolores	430	185	233.0
La Plata River at Hesperus	45	191	23.5
Los Pinos River at Bayfield (1)	360	176	204.0
Mancos River near Towac (2)	52	237	21.9
Inflow to Navajo River (1 & 3)	1400	230	608.0
Piedra Creek at Arboles	455	226	201.0
San Juan River at Carracas	770	208	370.0
San Miguel River at Placerville	225	181	124.0

(1) Observed flow plus change in storage in Vallecito Reservoir. (2) March-July. (3) April-July.

**WATER SUPPLY OUTLOOK**

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply.

STREAM or AREA	Flow Period	
	Spring Season	Late Season
Florida River	Exc.	Exc.
Hermosa Creek	Exc.	Exc.
West Dolores River	Exc.	Exc.
Williams Creek	Exc.	Exc.

**RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH**

Basin or Stream and/or RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	1963-77 Average
Groundhog	22	9	11	12
Jackson Gulch	10	3	4	7
Lemon	40	9	7	23
Navajo	1696	1260	1030	741
Vallecito	126	33	39	66

**SUMMARY of SNOW MEASUREMENTS**

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	1963-77 Average
Animas	7	184	219
Dolores	5	153	191
San Juan	4	209	214

This report prepared by

JACK N. WASHICHEK—BERNARD A. SHAFER  
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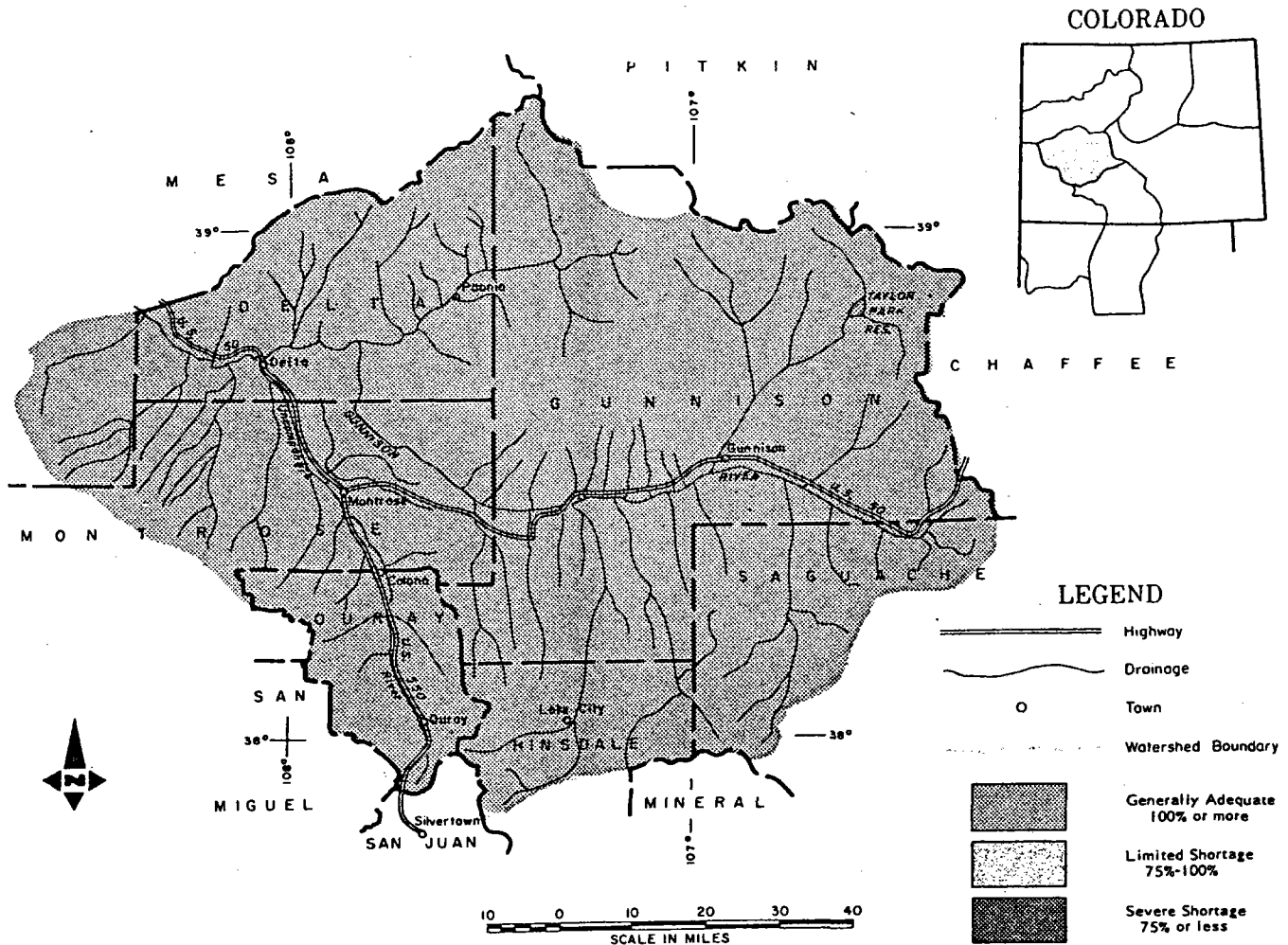
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U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE

# WATER SUPPLY OUTLOOK FOR THE SOIL CONSERVATION DISTRICTS IN THE GUNNISON RIVER WATERSHED IN COLORADO

as of  
MAY 1, 1978

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE  
SOUTHWESTERN REGIONAL OFFICE DENVER, COLORADO AND NEW MEXICO



## YOUR WATER SUPPLY

MAY SNOW SURVEYS INDICATE THAT SNOWPACKS ON THE GUNNISON WERE MAINTAINED BY SLOW MELT RATES WHICH HELD THEM AT A HIGHER LEVEL THAN IS NORMALLY SEEN AT THIS TIME OF YEAR. SNOWPACKS RANGE FROM 149 PERCENT ON SURFACE CREEK TO 161 PERCENT OF NORMAL ON THE GUNNISON WATERSHED. STREAMFLOWS WILL BE ABOVE NORMAL AND SHOULD BE VERY COMPARABLE TO THE 1973 FLOWS. RESERVOIR STORAGE IN THE AREA IS STILL NEAR NORMAL AT 91 PERCENT OF AVERAGE. SOIL MOISTURE CONDITIONS ARE GENERALLY GOOD WHICH WILL ALSO HELP WATER SUPPLY CONDITIONS.



**STREAMFLOW FORECASTS (1000 Ac. Ft.) April - September**

FORECAST POINT	Forecast	% of Average	1963-77 Average
Gunnison River inflow to Blue Mesa Reservoir (1)	1200	159	754.0
Gunnison River near Grand Junction (2)	2000	174	1150.0
North Fork of Gunnison (3)	400	153	262.0
Surface Creek near Cedaredge	22	145	15.2
Uncompahgre River at Colona	195	151	129.0

(1) Observed flow plus change in storage in Taylor Reservoir. (2) Observed flow plus change in storage in Blue Mesa, Morrow Point and Taylor Reservoirs.  
 (3) Observed flow plus change in storage in Paonia Reservoir.

**WATER SUPPLY OUTLOOK**

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply.

STREAM or AREA	Flow Period	
	Spring Season	Late Season
Ohio Creek	Exc.	Exc.
Slate River	Exc.	Exc.
Taylor River	Exc.	Exc.
Tomichi Creek	Exc.	Exc.

**RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH**

Basin or Stream and/or RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	1963-77 Average
Blue Mesa	830	274	276	320
Morrow Point	121	115	114	105
Taylor	106	43	28	60

**SUMMARY of SNOW MEASUREMENTS**

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	1963-77 Average
Gunnison	13	106	161
Surface Creek	3	87	149
Uncompahgre	3	125	155

This report prepared by

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 GRAND JUNCTION, COLORADO

U.S. DEPARTMENT OF AGRICULTURE—SOIL CONSERVATION SERVICE

TABLE OF ORGANIZATION - PERSONNEL

IRRIGATION DIVISION NO. 4

Division Engineer - Ralph V. Kelling

Assistant Division Engineer - Thomas A. Kelly

Secretary - Jean Duncan

Hydrographer - Charles G. David

Water District 28

WATER COMMISSIONER B  
John S. Garber

Water District 40

PRIN. WATER COMMISSIONER  
Richard L. Drexel\*

Water District 41

WATER COMMISSIONER B  
Crandall Howard

WATER COMMISSIONER C  
Robert H. Starr\*

WATER COMMISSIONER B

James E. Carr

Mack Gorrod

John McHugh

James Miller

Stephen Tuck

Charley Woolley

WATER COMMISSIONER A

Willard Bull

Lloyd Connell

Thomas Jones

Logan Gregg Scott

James T. Hanrahan

Wayne Wiseman

David Woolley

Water District 42

WATER COMMISSIONER C  
Richard Belden\*

WATER COMMISSIONER B  
Lester Whiting

Water District 59

WATER COMMISSIONER B  
Edwin S. Hofmann\*

WATER COMMISSIONER B  
Robert Drexel

Water District 60

WATER COMMISSIONER B  
Lyman D. Campbell

Water District 61

WATER COMMISSIONER B  
Clinton L. Oliver

Water District 62

WATER COMMISSIONER B  
Edwin S. Hofmann\*

Water District 63

WATER COMMISSIONER C  
Richard Belden\*

Water District 68

WATER COMMISSIONER B  
H. Roger Noble\*

Water District 73

WATER COMMISSIONER C  
Richard Belden\*

WELL COMMISSIONER  
Dwayne Mansker\*

\*Annual

AREAS OF RESPONSIBILITY OF WATER COMMISSIONERS

IRRIGATION DIVISION NO. 4

WELL COMMISSIONER

Dwayne Mansker - Division Wide

WATER DISTRICT 28

John S. Garber (WCB) - Tomichi and Cochetopa Creek

WATER DISTRICT 40

Richard Drexel (SRWC) - Overall administration and supervision of Water District 40

Robert H. Starr (WCC) - North Fork of the Gunnison River and Smith Fork

WATER COMMISSIONERS A:

Willard Bull - Upper Surface Creek

James Carr (WCB) - Leroux Creek

Lloyd Connell - Minnesota Creek and Stewart Mesa

Mack Gorrod (WCB) - Ward, Kiser and Youngs Creek Reservoirs

Thomas Jones - Gunnison River and Escalante Creek

Jack McHugh (WCB) - Youngs, Kiser and Ward Creeks

James Miller (WCB) - Muddy, Anthracite and Hubbard Creeks

Logan Gregg Scott - Park Basin

James T. Hanrahan - Leon Reservoirs

Stephen Tuck (WCB) - Forked Tongue

Wayne Wiseman - Granby and Battlement Reservoirs

Charley Woolley (WCB) - Lower Surface Creek

David Woolley - Dry Creek and Alfalfa Run

AREAS OF RESPONSIBILITY OF WATER COMMISSIONERS (cont'd)

WATER DISTRICT 41

Crandall Howard  
(WCB)

- Uncompahgre River from Colona to Delta

WATER DISTRICT 42

Richard Belden  
(WCC)

- Gunnison River below Mesa County line and its tributaries

Lester Whiting  
(WCB)

- Same area

WATER DISTRICT 59

Robert Drexel  
(WCB)

- Gunnison River above Gunnison and tributaries on north side of the Gunnison River from Gunnison to Mesa Creek

WATER DISTRICT 60

Lyman Campbell  
(WCB)

- San Miguel River

WATER DISTRICT 61

Clinton Oliver  
(WCB)

- Dolores River below the San Miguel County line to confluence with San Miguel River (Paradox Valley)

WATER DISTRICT 62

E. S. Hofmann  
(WCB)

- Cimarron River, Lake Fork of Gunnison and Cebolla Creek

WATER DISTRICT 63

Richard Belden  
(WCC)

- Dolores River below confluence of San Miguel River

WATER DISTRICT 68

H. Roger Noble  
(WCB)

- Uncompahgre River above Colona

WATER DISTRICT 73

Richard Belden  
(WCC)

- Little Dolores River

HYDROMETEOROLOGICAL DATA - BLUE MESA RESERVOIR (From U.S. Bureau of Reclamation, CRSP Power Operations, Monthly Reports)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>1977</u>												
Precip. (In.)	0.37	0.23	0.11	0.89	0.38	0.38	3.28	0.73	0.68	0.93	0.81	.78
Avg. Max. Temp.	31.00	41.00	44.00	68.00	69.00	71.00	82.00	83.00	75.00	64.00	46.00	34.00
Avg. Min. Temp.	1.00	7.00	11.00	29.00	38.00	36.00	49.00	47.00	41.00	29.00	20.00	10.00
Total Ann. Precip.	0.37 In.	0.60	0.71	1.60	1.98	2.36	5.64	6.37	7.05	7.98	8.79	9.57
Total Ann. Dischg.	159,570 A.F.	199,920	234,890	287,530	356,150	426,710	494,620	563,920	612,112	652,304	666,923	676,693
<u>1978</u>												
Precip. (In.)	1.42	0.89	.42	.40	.55	.40	.50	.35	.27	.94	.80	.80
Avg. Max. Temp.	26.00	28.00	42.00	58.00	65.00	79.00	85.00	83.00	75.00	63.00	48.00	48.00
Avg. Min. Temp.	3.00	1.00	23.00	28.00	34.00	39.00	47.00	45.00	39.00	26.00	22.00	22.00
Total Ann. Precip.	1.42 In.	2.31	2.73	3.13	3.68	4.09	4.59	4.94	5.21	6.15	6.95	7.75
Total Ann. Dischg.	136,177 A.F.	157,337	181,311	220,191	246,319	280,259	364,289	445,749	529,129	595,774	644,629	693,484
<u>1979</u>												
Precip. (In.)	1.65	1.65	.66	.53	0.00	.24	.48	.30	.87	.01	0.48	
Avg. Max. Temp.	19.00	19.00	23.00	36.00	55.00	67.00	78.00	84.00	80.00	79.00	35.00	
Avg. Min. Temp.	-3.00	-3.00	-4.00	11.00	23.00	35.00	39.00	47.00	47.00	39.00	13.00	
Total Ann. Precip.	1.65 In.	3.30	3.96	4.49	4.49	4.73	5.21	5.51	6.38	6.39	6.87	
Total Ann. Dischg.	92,470 A.F.	92,470	116,510	144,752	131,010	79,200	45,140	112,510	109,670	108,360	45,390	