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COLORADO DIVISION OF WATER RESOURCES

DIVISION 3 ANNUAL REPORT - 1974

1. INTRODUCTORY STATEMENT

Water Division 3 includes about five million acres of land. Approximately one-half of this land is federally owned, including national forests, public domain, wildlife refuges and the Great Sand Dunes National Monument.

Of the remaining 2 1/2 million acres of private land in the area, about 500,000 acres is irrigated crop land, 250,000 acres permanent pasture or hay, 500,000 acres woodland and 1,250,000 acres is range land consisting of sage, chico, and natural grasses.

Division 3 includes all land in Colorado which drains into the Rio Grande river. The area is more specifically referred to as the San Luis Valley. It is located in south central Colorado and includes all or part of the counties of Saguache, Rio Grande, Alamosa, Conejos, Costilla, San Juan, Hinsdale, Mineral, and Archuleta. The Division is bounded on the north and west by the Continental Divide, on the east by the Sangre De Cristo mountains, and on the south by the Colorado-New Mexico state line. The Valley floor, at an average elevation of 7,600' is nearly flat, sloping generally from north to south at a grade of 4 to 10 feet per mile. The area along the Rio Grande in the vicinity of Alamosa has a slope of only 0.6 of a foot per mile.

Soils of the Valley range from coarse gravel and rock next to the mountains to a fine blow-sand texture toward the center. The finer textured soils are underlain by sand and gravel with clay lenses beginning generally at a depth of 60 feet. During most years a substantial part of the land is subwatered.

The growing season between frosts ranges from a minimum of 90 to a maximum of 120 days. Precipitation averages about seven inches a year on the Valley floor. Hail Storms are

common during the growing season and weather modification has been practiced in previous years to reduce crop damage. The prevailing winds blow from south to west and are strongest in the spring.

The main crops raised by irrigation are alfalfa, potatoes, barley, oats, natural grasses, hay, and pasture. Cattle and sheep are feed-lot fed in the winter months and transported to mountain ranges in the summer. Crop yields are high and the quality is good.

The headwaters of the Rio Grande river are in Hinsdale county on the west side of the Valley. The Rio Grande flows generally west to east through the Valley turning south at Alamosa. Major tributaries to the main stem of the Rio Grande are the South Fork at South Fork, Colorado, the Alamosa River, La Jara and Trinchera Creeks between Alamosa and La Sauses, and the Conejos River at La Sauses. The Los Pinos and San Antonio rivers are tributary to the Conejos river east of the town of Manassa. The San Antonio river heads in New Mexico and flows into Colorado. The Los Pinos heads in the Cumbres pass area in Colorado, flows into New Mexico and then back into Colorado. The Conejos river heads in the San Juan Range near Platoro. The streams flowing into the Closed Basin (Saguache, San Luis, La Garita, Carnero creeks and their tributaries) are not tributary as surface waters to the Rio Grande. Costilla and Culebra Creeks and their tributaries are not now considered tributary to the Rio Grande above Lobatos, although future studies could change the status of Culebra Creek.

Agriculture continues to be the predominant economic factor in the San Luis Valley. Several small towns exist as supply centers for the agricultural industry. Adams State College, a liberal arts college offering both graduate and undergraduate degrees, is at Alamosa, the largest town in the Valley.

Manufacturing is primarily based on the region's resources. Perlite is processed in the Antonito area by Grefco, Johns-Manville, and Silbrico Corp. The Homestake, Emperius, and Summitville mines produce silver, lead and copper. Lumber mills and potato starch plants round out the major part of the manufacturing sector. In 1970, the Gerry Division of Outdoor Industries, Inc. located in a new plant to manufacture ski parkas in Alamosa. With the vast amount of high quality potatoes grown in the San Luis valley, local officials are attempting to find a major processor to locate in the area.

The population explosion felt in other areas of the State has not reached the San Luis Valley, which has had a relatively stable population the past decade. Subdivision development has had a resurgence in the Valley in the last five years. Costilla county has the highest amount of subdivided land, and Saguache and Alamosa counties have significant amounts of subdivided lands. Sales of tracts in these subdivisions appear to be slowing appreciably probably due to increased travel costs and to the general economic situation. Impact on population growth or building economy is still minimal.

Most subdivision developers operating in the Valley before Senate Bill 35 was passed in May, 1972 had a rather casual approach to the availability of a water supply for their lands, and this attitude apparently was shared by the county commissioners when they approved the subdivisions. After the passage of S. B. 35 and House Bill 1042 in 1972 the county commissioners could require subdividers to provide firmer water supplies for their subdivisions. S. B. 7 passed in 1974 strengthened S. B. 35, however, it still did not make it mandatory for the commissioners to require the subdivider to secure an approval from the Division of Water Resources for the subdivisions water feasibility plan. Fortunately, there seems to be a growing awareness of responsibility in this matter

by the county commissioners in Division 3. Alamosa County now requires this course of action, but Saguache and Costilla county commissioners do not. Two plans of augmentation have been approved by Division 3 Water Court, which are certain to result in administrative problems in the future.

There has been an extraordinary increase in awareness of the real value of water by the public here in the valley. The high water yield year of 1973 and its real problems, followed by the below average water yield in 1974 and its different problems, have brought the overall water problem here into sharp focus. Solutions to the problems by individuals and groups tend to be understandably self serving. It is now quite clear that there is no solution which will not injure one or more of the concerned interests.

The larger water resource related projects, carried over or going on, and new or proposed projects for the 1974 year are listed below.

WATER RESOURCE RELATED PROJECTS

A. Projects Carried Over from Previous Years.

<u>Sponsor</u>	<u>Owner/Project</u>	<u>Work</u>	<u>Status</u>
Rio Grande Water Conservation Dist.	Small well programs	Valving, capping, flowing artesian wells	Approx. 1550 wells completed
Rio Grande Water Cons. Dist. plus DWR, CWCB, USBR, et al	Closed Basin	Water salvage	Authorized but not funded-dormant
RGWCD - DWR	SW Costilla Co. Investigation	Drilling & logging of wells	Completed
San Luis Valley Res. Cons. & Dev.	Commonwealth Irrigation Co.	Syphon at Spring Creek	Completed
San Luis Valley Res. Cons. & Dev.	Commonwealth Irrigation Co.	Diversion Structure	Completed
San Luis Valley Res. Cons. & Dev.	McDonald Ditch Company	3 mi concrete ditch lining	3/4 mi. pad work is completed
San Luis Valley Res. Cons. & Dev.	Manassa Land & Irrig. Co.	Concrete Ditch Lining	Planning

<u>Sponsor</u>	<u>Owner/Project</u>	<u>Work</u>	<u>Status</u>
RGWCD	Observation wells net-work	6 mi, grid 73 wells to monitor static H ₂ O level	46 completed 31 planned in 1st phase
San Luis Valley Well Owner's Ass'n	Plan of Augmentation	Purchase of Taos Valley #3 on San Antonio	Planning
San Luis Valley Res. Cons. & Dev.	Prairie Ditch Company	Lining & head-gate structures in Closed Basin	Pre-planning
San Luis Valley Res. Cons. & Dev.	LaGarita Res.	On stream res.	Pre-planning
San Luis Valley Res. Cons. & Dev.	Rito Seco flood Control	Channel Diver-sion in town of San Luis	Pre-planning
Weisbart & Weisbart	Same as sponsor	Use of geothermal water for fish & hog production	Feasibility established
B. New Projects			
ASCS	Sanchez Res. & Ditch Co.	9 1/2 mi. concrete ditch lining	pad work is completed
ASCS	Trinchera Irrig. Company	3 1/2 concrete ditch lining	Planning
ASCS	Santa Maria Res. Co.	3000' pipeline in feeder ditch to the Res.	Completed
Marine Minerals	MAPCO	Evaluation 9 600' geothermal exploration test holes	One remains to be properly plugged
MAPCO/AMOCO	Same as sponsor	Evaluation of 9500' geothermal exploration test hole	Completed, plugged and abandoned
RGWCD	Saguache Cr. & Werner Arroya	Channel Rectification	Present phase completed.
CWCD-DWR	Telemeter at Mogote	Installation	Planning for 1975 wtr/yr

ASCS has installed approximately 100 headgates and flumes on internal ditches in the San Luis Valley in 1974.

11. PERSONNEL (November 1, 1973 - October 31, 1974)

<u>NAME</u>	<u>POSITION 1/</u>	<u>DIST.</u>	<u>MO. WORKED 2/</u> (Budgeted)	<u>MILEAGE</u>
Blewitt, R. I.	Div. Engr. WRE IV	Div	FTE 11 months	784*
McFadden, D. H.	Asst. D. E. WRE III Acting D. E. WRE IV	Div	11 months 1 month	1510*
Tipton, C. W.	Admin. Clerk Typist A	Div	FTE	0
Hernandez, D.	Clerk Typist	Div	6 mo. (6)	0
Alspaugh, L. R.	Water Comm II	20	FTE	2735*
Nash, M. E.	D. Water Comm	20	FTE (18 days on S & F Dam Roster)	12,894
Phillips, W.	D. Water Comm	20	6 mo. (6)	11,158
Holslag, T.	D. Water Comm	20	3 mo. (3)	1471
Gonzales, L. B.	Water Comm I	21	9 mo. (8)	12,619
Morch, K. S.	D. Water Comm	21	12 mo. (9) (11 days on S & F Dam Roster)	11,357
Parker, E.	Water Comm II	Div	FTE	4622*
Sorensen, D. H.	D. Water Comm	22	FTE (Worked 11 mo. then leave of absence)	8640
Simons, L.	Water Comm II	22	FTE	19,071
Hamilton, J.	D. Water Comm	22	5 mo. (2)	6935
Espinoza, J. M.	Water Comm I	24	12 mo. (10)	11,646
Lamm, H. R.	Water Comm I	25	12 mo. (6)	10,066
Crowley, G. W.	Water Comm I	26	12 mo. (8)	10,534
Watts, F. R.	Water Comm I	27	8 mo. (6)	4996
Smith, W. B.	Water Comm I	35	11 mo. (8)	5006
Armstrong, M.	Engr-Tech-Hydro	Div	3 mo. (3)	0
Vandiver, S. E.	WRE I - Hydro	Div	FTE	0*
Waddington, L. A.	WRE II - Hydro	Div	FTE	0*
Walker, R. D.	WRE II - Engr	Div	FTE	0*
Kragel, R.	Engr & Phys Sci Trainee	Div	FTE	0*

Months actually worked include annual leave taken

- 1/ Status on November 1, 1974
 2/ Working months - November 1973 through October 1974
 Months budgeted for the position in FY 1973-1974
 3/ Asterisk indicates that some mileage was by a state-owned
 vehicle. Where both an asterisk and miles are shown, the
 mileage shown is by privately owned vehicle.

D. H. McFadden, Jr. became the acting Division Engineer on October 7, 1974. Ronald I. Blewitt transferred to the Water Conservation Board in Denver.

Robert Kragel joined our ranks as a hydro in May of 1974.

Charlene Tipton joined our ranks as Administrative Clerk Typist in November 1973.

Wendell Phillips, Tom Holslag, and James Hamilton became Deputy Water Commissioners on permanent-part time status.

George W. Crowley retired as of November 30, 1974, and Dennis Voth was appointed Water Commissioner for that area on November 1, 1974.

III.

A. SNOW PACK

Due to anticipated early irrigation season, the annual yield forecast of the Rio Grande Compact index supply was made on April 1. They were based on SCS streamflow estimates as of March 1 for April thru September.

Dry and windy conditions in April and May necessitated a drastic downward revision of this forecast on May 31. This dry pattern has persisted to date (November 26, 1974) and the latest estimated yield on the Grande has again dropped sharply; the Conejos only slightly.

COMPARISON OF ANNUAL YIELD FORECASTS FOR 1974
(Thousand of Acre - Feet)

<u>Index Station</u>	<u>April 1</u>	<u>June 1</u>	<u>November 26</u>
Conejos @ Mogote	211	144	142
Los Pinos @ Ortiz	70	46	43.8
San Antonio @ Ortiz	<u>15</u>	<u>10</u>	<u>6.5</u>
Total Conejos Index	296	200	192.3
Rio Grande @ Del Norte	480	400	335

} Preliminary

The table graphically points out that we had an early runoff pattern which was not apparent until well into the irrigation year further complicated by the dry spring, summer and fall.

B. PRECIPITATION - SUMMER

The period reported is the summer growing season from May 1 through September 30. Normal precipitation (1931-1960 averages) for the period, at National Oceanic and Atmospheric Administration reporting stations, is 5.72 inches.

The average annual precipitation is approximately 7" on the Valley floor.

PRECIPITATION AND DEVIATION FROM NORMAL (FROM NOAA REPORTS)
(Inches of precipitation)

Station	May		June		July		August		Sept	
	1	2	1	2	1	2	1	2	1	2
Alamosa	.09	-.53	.69	.17	1.78	.61	.72	-.43	.62	-.09
Blanca	.00	-.87	.73	.02	1.31	-.10	1.61	-.05	.47	-.26
Center	.00	-.71	.19	-.42	1.16	.16	1.36	.10	.87	.18
Del Norte	T	-.76	.28	-.46	1.92	.44	1.10	-.59	1.12	.26
Great Sand Dunes			.83	--	--	--	1.35	--	.40	--
Hermit	.25	-.87	.70	-.18	2.95	.82	1.30	-.89	.80	-.56
Manassa	.00	-.64	.52	-.12	2.03	.87	.72	-.73	.10	-.61
Monte Vista	T	-.55	.25	-.31	2.45	1.27	.74	-.59	.78	.03
Saguache	T	-.75	.17	-.54	.45	-1.08	1.34	-.19	.63	-.21
Wolf Creek	.00	--	.83	-	4.63	--	2.81	--	2.01	--
Average	.04	-.86	.56	-.25	2.08	.40	1.31	-.51	.78	-.33

1/ Column 1 - Precipitation.
Column 2 - Deviation from normal.

Data from the table indicate about 80% of normal precipitation for the period. No major storms occurred.

No hail suppression work was done in Division 3 this year.

C. FLOODS

No flooding occurred this year.

D. GENERAL

WATER BUDGET - DIVISION #3
Nov 1, 1972 thru Oct 31, 1973

WATER YIELD:

<u>Water Source</u>	<u>Yield (AF)</u>
1. Inflow from gaged and estimates on un-gaged streams. <u>1/</u>	1,669,000
2. Valley floor precipitation not accounted for in previous item.	1,383,000
Total	<u>3,052,000</u>

Diversions and Depletions:

<u>Item</u>	<u>Diversions (AF)</u>	<u>Depletions (AF)</u>
Directflow diversions	1,354,000 <u>2/</u>	700,000 <u>3/</u>
Wells	625,000	415,000
Non-beneficial use (ET)	0	1,060,000
Municipal	12,000 <u>4/</u>	4,000
State line delivery		520,000
Underflow leaving division		<u>55,000</u>
Total		2,754,000

Summary:

<u>Item</u>	<u>AF</u>
Total water yield	+3,052,000
Total water depletion	<u>-2,754,000</u>
Change in underground storage	+ 298,000

-
- 1/ Estimated at entrance to Valley floor. Does not reflect changes in reservoir storage upstream.
2/ Includes only those ditches on which official records are kept.
3/ Includes depletions from all surface diversions.
4/ Estimated for towns in the Valley on the basis of withdrawals from Alamosa Municipal Wells.

E. UNDERGROUND

No clearly defined aquifers exist in the San Luis Valley, except in a local sense. The basin is filled with intermittent layers of sand, gravel, silt, and clay, with some layers of volcanics, which are more common south and west of the Rio Grande. Hydrologic boundaries do not necessarily correspond to geologic formational boundaries. Aquifers of the San Luis Valley as defined by the USGS are shown in the table below:

<u>Aquifer</u>	<u>Depths (ft.)</u>	<u>Remarks</u>
Unconfined	0 to 60 - 300	Continuing clay layers varies in depth and thickness.
Artesian A	60 - 300 to 1620	Division into two zones based on differences in transmissivity and storage co-efficients.
Artesian B	1620 to 3120	

There are wells in the valley producing water from depths greater than 2500' but little is known of the reservoir characteristics of the deeper water producing zones. This sequence of aquifers is generally confined to the valley floor; the peripheral area is assumed to be the area of recharge to these aquifers.

As was printed out in last year's annual report, there are many questions unanswered regarding the complex hydrogeology of the San Luis Basin. Far from being academic questions, they are quite germane to effective and equitable administration of all the water in the Basin, but most particularly the groundwater.

Division of Water Resources personnel are well aware of these problems, and have undertaken investigative studies jointly with the Rio Grande Water Conservation District and the USGS. (See page 4) Limited budgets require assignment of priorities on the basis of finding unappropriated waters which can be put to beneficial use by the people of Colorado.

Exploration for geothermal energy caused much excitement

in the San Luis Valley during the last year. Nine 600' test holes were drilled in the general area between Alamosa and Moffat. Three holes were located on or east of Highway 17, and six holes located east of the highway in the sump area of the Closed Basin.

In early June the Mid-America Pipeline Company (MAPCO) spudded in their #1 Colorado State 1-32 geothermal test located in the SE 1/4 of the NW 1/4 Section 32, Township 40N, Range 12E. NMPM. It is assumed that this location was made on the basis of information from the nine shallow test holes. The well was permitted by the State Engineer on the basis of a non-consumptive use of water since H.B. 1165, the Geothermal Resources Act, had not yet become law. The well was projected to go to 12,000' which was the nominal capacity of the rig, and was classed by the operator (MAPCO) as a "tight hole". The hole, as required by the permit, was solid cased to 2510', and drilled down to 7985'. At this point the operator drill stem tested the 5304' to 5491' interval using Lynes straddle packers. The test was apparently successful from a technical standpoint, but disappointing in the results, since the flow from this interval was only 25 gpm, water in the test chamber was 177°F., and a preliminary chemical analysis indicated 7000 PPM chlorides. The chloride concentration was considerably higher than anticipated and would probably have caused serious problems in the heat extraction process. During the progress of the hole to this point, Division of Water Resources personnel from the Alamosa office had free access to all information, including copies of all logs, geophysical and lithologic. After the disappointing drill stem test, MAPCO became disinterested, and AMOCO took over as operator of the hole as an oil and gas test. We were no longer allowed to monitor the progress. Our best information is that

the hole was drilled to 9480', geophysical logs run on the bottom portion (7985' - 9480'), and the hole then plugged and abandoned. As of today, to our knowledge, the information on this lower portion of the hole has not been released.

In spite of the disappointing results of the MAPCO geothermal test, there is continued interest in the area around Villa Grove and Mineral Hot Springs, in the northern end of the Valley. Geologically, this area appears to be the most likely area in which to prospect for geothermal energy. Phillips Petroleum Company has obtained a permit to drill twenty one 500' test holes in the area. A joint effort by the Division of Water Resources and the USGS is proposed over the next two years, which would consist of drilling and geophysical logging of holes in the areas designated as having known geothermal activity by the USGS. These areas also lie in the northern end of the San Luis Valley.

In summary, it is to be expected that ancillary benefit from geothermal (or any other form of energy) exploration is in increasing our knowledge of the geology and hydrology of the San Luis Valley. We have learned much from investigators in the academic hydrogeology field in the past, and we should continue to review their work as it becomes available in the future.

F. TRANS-MOUNTAIN DIVERSIONS (November 1, 1973 thru October 1974)

	<u>Ditch</u>		<u>Source</u>	<u>District</u>		<u>Acre Feet</u>
				<u>From</u>	<u>To</u>	
Don La Font No. 1	<u>1/</u>		Piedra R	78	20	77.56
Don La Font No. 2	<u>2/</u>		Piedra R	78	20	10.42
Pine River Weminuche Pass	<u>3/</u>		Pine R	31	20	141.6
Tabor Diversion	<u>4/</u>		Spring Cr	62	20	208.44
Treasure Pass Diversion	<u>5/</u>		San Juan R	29	20	152.76
Weminuche Pass	<u>6/</u>		Pine R	31	20	716.0
Williams Squaw Pass	<u>7/</u>		Williams Cr	29	20	46.7
Tarbell	<u>8/</u>		Cochetopa Cr	28	26	64.2
Medano and Hudson Ditches	<u>9/</u>		Medano Cr	35	16	880 est <u>10/</u>

Recipient

- 1/ Colorado Division of Wildlife
- 2/ Colorado Division of Wildlife
- 3/ Paul Weaver, L. B. McClung, Bill Buttman
- 4/ Colorado Division of Wildlife
- 5/ Falk Brothers
- 6/ Leon Raber
- 7/ Seaborn Collins
- 8/ Mel Coleman, Ted Goehl, George Ward
- 9/ Cuerno Verde Ranch, Gardner, Colorado
- 10/ Water exported to Division 2, District 16

On June 6, 1974 the Weminuche Pass and Pine River Weminuche Pass Diversions were called out of priority by A. G. Sparks, Water Commissioner in District 31, and the Division Engineer in Division 7.

G. RESERVOIRS

<u>Name</u>	<u>Capacity in A. F.</u>	<u>Decreed Capacity AF</u>	<u>Water District Number</u>
Alberta Park	598	597.5	20
Beaver Park	4,434	4,758.4	20
Big Meadows	2,437	2,436.68	20
Big Ruby	94	93.51	20
Bristol Head No. 1	121	120.94	20
Bristol Head No. 2	804	803.79	20
Continental	22,679	30,750.00	20
Cove Lake	6,380		22
Downing	30	30.0	20
Eastdale No. 1	3,519	3,468.0	24
Eastdale No. 2	3,041	3,041.	24
Fuchs	238	240.87	20
Goose Lake	232	223.25	20
Grace	-	685.82C	20
Hay Press Park	200	200.181	20
Hermit No. 1	385		20
Hermit No. 2	407	360.9	20
Hermit No. 3	192		20
Hot Springs	3	3.06	20
Humphreys	842	842.0	20
Hunters Lake	39		20
Jumper Creek	38	38.125	20
La Jara	14,056	14,056.0	21
Loch Laven	24	24.28	20
Lost Lake (Lower)	966	1,186.8	20
Lost Lake (Upper)	68	1,388.61	20
Love Lake	24		20
Meadow Lake (McCrone)	174	199.4	20
Meadow Lake (Wright)	115	114.59	20
Metroz (Lower Basin)	396	480.02	20
Metroz (Upper Basin)	84		20
Mill Creek	43	42.85	20
Mountain Home	18,595	19,150.	35
Platoro	60,000		22
Poage	261	260.83	20
Regan's Lake	823	515.58	20
Rio Grande	51,113	51,113.0	20
Rito Hondo	561	561.46	20
Road Canyon No. 1	1,367	1,182.75	20
Road Canyon No. 2	84	117.27	20
Saguache	294	294.28	26
Salazar No. 1	234	99.75	24
Salazar No. 2	35	35.0	24
Sanchez	103,155	103,155.	24
Santa Maria	45,070	43,826.06	20
Shaw Lake	681	680.6	20
S. Lazy U. Dude Ranch	106	129.6	20
S. Lazy U. No. 2	42	41.63	20
Smith	5,651	5,000.0	35
Sowards No. 1-A	8	7.79	20
Sowards	35	34.8	20
Sowards No. 3	19	18.8082	20
Sowards No. 4	45	45.06	20
Spring Creek	97	165.02	20
Spruce Lake No. 1	98	102.58	20
Spruce Lake No. 2	105	100.32	20
Squaw Lake	162		20
Stabilization (Head)	260		24
Streams Lake	41	41.1909	20
Terrace	17,233	17,171.0	21
Trout Lake	198	320.38	20
Troutvale No. 1	201	510.30	20
Troutvale No. 2	257	435.37	20
Trujillo Meadows	913		22
Wee Ruby	186	186.24	20
Willow Creek		1,785.0	24

G. RESERVOIRS

<u>Reservoir</u>	<u>Source</u>	<u>Nov. 1,</u> <u>1973</u>	<u>May 1,</u> <u>1974</u>	<u>Oct. 31,</u> <u>1974</u>	<u>Maximum</u>
Alberta Park	Pass Cr.	598	598	598	598
Beaver Park	Beaver Cr.	2,978	3,680	2,828	3,680
Big Meadows	So. Fork R.G.	2,437	2,437	2,437	2,437
Big Ruby	Texas Cr.	0	94	94	94
Bristol Head #1	Seepage Cr.	0	0	0	0
Bristol Head #2	Seepage Cr.	0	0	0	0
Continenetal	No. Clear Cr.	29	3,593	1,034	3,660
Cove Lake	San Antonito R.	0	0	0	0
Downing	Lima Cr.	30	30	30	30
Eastdale #1	Costilla Cr.	1,417	2,386	0	2,386
Eastdale #2	Costilla Cr.	0	0	0	0
Fuchs	Pinos Cr.	237	237	237	237
Goose Lake	Fisher Cr.	1	96	162	232
Hay Press Park	Goose Cr.	200	200	200	200
Hermit #1	So. Clear Cr.	385	385	385	385
Hermit #2	So. Clear Cr.	361	361	1.0	361
Hermit #3	So. Clear Cr.	192	192	192	192
Humphreys	Goose Cr.	842	842	842	842
Hunters Lake	Lake Fork Cr.	19	19	0	19
Jumper Cr. Lake	Jumper Cr.	38	38	38	38
La Jara	Torcido-Jim Cr.	4,246	4,139	2,640	4,246
Loch Laven	Trout Cr.	0	0	0	0
Lost Lake (Lower)	Lost Lake Cr.	0	245	55	245
Lost Lake (Upper)	Lost Lake Cr.	20	30	20	30
Love Lake	Middle Cr.	24	24	24	24
Meadow Lake (McCrone)	Middle Cr.	174	174	174	174
Meadow Lake (Wright)	Crooked Cr.	115	115	115	115
Metroz Lake (Lower)	Decker Cr.	396	396	396	396
Metroz Lake (Upper)	Decker Cr.	84	84	84	84
Mill Creek	Mill Cr.	43	43	43	43
Mountain Home	Trinchera	1,115	2,554	2,821	12,543
Platoro	Conejos	36,900	35,000	18,700	36,900
Poage	Beaver Cr.	133	198	25	198
Regan's Lake	Crooked Cr.	359	359	0	359
Rio Grande	Rio Grande R.	21,383	28,541	1,763	28,541
Rito Hondo	Rito Hondo Cr.	561	561	561	561
Road Canyon #1	Long Canyon Cr.	1,183	1,183	0	1,183
Road Canyon #2	Saw Mill Cr.	84	84	0	84
Saguache Res.	Saguache Cr.	250	250	50	250
Salazar #1	Rito Seco	120	150	30	210
Salazar #2	Rito Seco	5	5	0	30
Sanchez	Culebra	16,560	15,210	3,524	17,503
Santa Maria	No. Clear Cr.	5,449	7,935	2,805	7,935
Shaw Lake	Kitty Cr.	437	542	455	607
S. Lazy U. Dude Ranch	Crooked Cr.	106	106	106	106
S. Lazy U. #2	Crooked Cr.	42	42	42	42
Smith	Trinchera	886	3,574	3,574	5,730
Sowards #1-A	Middle Cr.	8	8	8	8
Sowards #2	Middle Cr.	35	35	35	35
Sowards #3	Middle Cr.	19	19	19	19
Sowards #4	Middle Cr.	45	45	45	45
Spring Creek	Spring Cr.	165	165	165	165
Spruce Lake #1	Trib. So. Fork	1	24.5	0	24.5
Spruce Lake #2	Trib. So. Fork	0	24.8	0.3	24.8
Squaw Lake	Squaw Cr.	0	0	0	0
Streams Lake	Springs	41	41	41	41
Terrace	Alamosa R.	6,890	10,071	2,756	10,137
Trout Lake	Trout Cr.	1	198	198	198
Troutvale #1	So. Clear Cr.	201	201	201	201
Troutvale #2	So. Clear Cr.	257	257	257	257
Trujillo Meadows	Los Pinos Cr.	913	913	913	913
Wee Ruby	Texas Cr.	186	186	51	250

IV.

A. AGRICULTURE

According to Abe Relyea, San Luis Valley Extension Agronomist, 1974 has been a good agricultural year in the valley. We have made no breakdown on a "common source" stream basis, nor on a crop yield by county, because the Valley is essentially a single agricultural entity.

Mr. Relyea's estimated figures for the 1974 season are as follows:

<u>Crop</u>	<u>Acres</u>	<u>Average Yield</u>	<u>Total Value</u>
Potatoes	35,000	250 cwt.	21 M dollars
Barley	82,000		
Malt	75,000	50 bu.	13.7 M dollars
Feed	7,000	55 bu.	1.0 M dollars
Wheat	4,000	45 bu.	810 T dollars
Alfalfa Hay	109,000	1.7T	9.25 M dollars
Grass Hay	90,000	1.3T	4.68 M dollars
Oats	11,000	40 bu.	1.1 M dollars
Lettuce	5,000	500 ctn.	7.5 M dollars
Spinach	1,200	400 bu.	1.5 M dollars
Cabbage	500	280 cwt.	.5 M dollars
Other Vegetables	500	400 cwt.	.6 M dollars

V. COMPACTS AND COURT STIPULATIONS

A. Costilla Creek Compact

The 30th annual meeting of the Costilla Creek Compact was held at Albuquerque, New Mexico on May 2, 1974. The following items have been extracted from Watermaster Chuck Miller's report for the 1973 season.

March thru May 4	1200 AF water delivered to Eastdale #1 Reservoir.
May 4	Costilla Creek water available to direct flow rights.
May 12	Costilla Creek flows reached the Rio Grande
June 13	Bypass release to provide space for runoff and prevent flooding.
July 8	Maximum storage in Costilla Reservoir for irrigation.
Sept 11	Costilla Reservoir storage 4,310.0 AF, El. 9,475.5

The 1973 calendar year yield of Costilla Creek at the Canyon Mouth was 43,350 AF (USGS records) compared to 14,710 in 1972.

Water was available to most of the areas served by the Costilla system throughout the irrigation season. USGS records show a total flow of 6,180 AF at the Eastdale #1 intake canal gage for the calendar year, and there was a significant amount of Costilla Creek water reaching the Rio Grande.

From all indications the 1974 water year will probably be a poor one, and has resulted in hardship on the water users on the Costilla Creek system. The small community of Garcia located just north of the New Mexico line on Costilla Creek experienced a shortage of domestic water in their municipal well. During the past summer use of water was restricted to in-house use only. Several state agencies, including the Division of Water

Resources, and others are now working on a solution to this problem.

Several items were brought up under "other business" by water users on Costilla Creek, as follows:

Don Anderson, Jaroso, Colorado, asked for an early release of water for the Jaroso Mutual Ditch thru the Cerro Canal (over and above the Eastdale Reservoir diversions). Request was okayed by the commissioners.

George Oringdulph, Mesita, Colorado, brought up the question of administration of storage water under Article 5 (c) of the Costilla Compact. He will send a letter to Mr. Kuiper asking for an opinion on the matter from Colorado's Attorney General.

B. Rio Grande Compact

Water administration in Division 3 continues to be a difficult and time consuming task at all concerned levels of the Division of Water Resources, primarily as a result of the Supreme Court stipulation regarding Colorado's obligation under the Rio Grande Compact. This stipulation requires that Colorado each and every year meet its delivery obligation to the downstream states, which obviates the flexibility on annual delivery allowed in the compact itself. With no margin of error allowed on the negative side of the required delivery, those responsible for the operating criteria are forced to engage in a frustrating game of crystal ball gazing. This game begins in early spring, either April 1 or May 1, depending upon the weather, when we try to forecast a yield of the Rio Grande system. From this yield, we obtain an estimated delivery requirement, and then attempt to set a reasonable estimate of water available during the irrigation season for Colorado appropriators. The 1974 Forecast Yield for the Compact is covered in III-A and a copy of the 1974 Operating Criteria is included in the Appendix.

Since 1974 appeared to be a somewhat below average yield year on both the Rio Grande and Conejos Rivers, we were able to allow diversion of 100% + return flows of the flow of both streams for almost all the irrigation season. The Conejos River appropriations were cut by 15% of the Mogote index for the period April 1 thru 30, and the Grande had return flows cut during the same period.

On March 28, 1974, the 35th annual meeting of the Rio Grande Compact Commission was held in Sante

Fe, New Mexico. As was expected, at issue were the matters of the 1973 flood storage water still in Platoro Reservoir and the establishment of a recreational pool in Elephant Butte, using San Juan Chama water. A resolution, introduced by New Mexico at the 1973 meeting, proposed commission endorsement for HB 1677 which would have authorized the Elephant Butte recreational pool; Colorado vote "No." After this resolution was resubmitted in 1974, the Colorado contingent caucused at some length to discuss the Reynolds Resolution and the Platoro flood water storage problem. It was agreed that the matter warranted consideration by more of the San Luis Valley water interests, and their attorneys. This meeting was adjourned until May 3, 1974 at Albuquerque.

Immediately prior to the reconvened meeting at Albuquerque the commissioners and their staffs met informally and were able to reach agreement on four resolutions. These four resolutions, in essence, settled the question of release of 1973 flood storage in Platoro, and the establishment of a recreational pool at Elephant Butte and Abiquiu Reservoirs. The formal meeting consisted of a quick unanimous approval of the four resolutions by the commissioners, and the meeting adjourned. Copies of the four resolutions as received from the Bureau of Reclamation are included in the appendix.

The Platoro flood storage water amounted to roughly 34,000 AF, and was now by resolution available for release at the Colorado Compact Commissioner's call. By agreement, the stored water was split 50-50 between the Conejos and Grande. The Conejos called for the release of their complement in storages, approximately 10,000 AF

between May 17 and May 29, and another release of 5000 ± AF in the latter part of June. This supplemental water was most beneficial to the Conejos users in this short water year. The Grande's complement is still stored at Platoro Reservoir.

An evaluation of our compact status in late October allowed continued diversion of irrigation water until November 21, 1974 as provided for in the 1974 Operating Criteria. The latest annual yield forecast is 337,000 AF on the Grande and 193,000 AF on the Conejos, and a projected combined over delivery of 5,000 AF which includes the 10,000 AF credit.

VI. DAMS

A. STATE AND FEDERAL DAM ROSTER

The Division 3 personnel were instrumental in completing the much needed Dams Roster of some eighty-five dams in the San Luis Valley. The Roster included all dams which were either over ten feet high at their maximum section, or have a surface area of greater than twenty acres at their high water level, or contain more than 1000 acre feet of storage.

On April 19, 1974 the dam on Cove Lake failed and probably will not be repaired.

B. INSPECTIONS

The following dams were visited by Division 3 Personnel in 1974:

<u>Reservoir</u>	<u>WD</u>	<u>Date</u>	<u>Observation</u>
Regan Res.	20	5/27/74	Needs adequate slope gage
Fuchs	20	6/4/74	Badly eroded emergency spillway.
Road Canyon #1	20	6/7/74	Needs adequate slope gage. Ran levels to establish GH 19.97.
Spring Cr.	20	6/7/74	Rodent holes in dam.
Rio Grande	20	6/18/74	Inspection of slope gage.
Metroz Lake	20	6/25/74	Ran levels to establish GH 7.66.
Willow Crk	24	6/26/74	Reservoir no longer used.
Hermit #2	20	7/15/74	Rip rap on front face of dam is poor.
Shaw	20	8/2/74	GH 12.5; needs new slope gage.

Repair or restoration work to dams includes:

<u>Reservoir</u>	<u>WD</u>	<u>Nature of Work</u>
Hermit No. 2	20	Rip rap on front face of dam replaced.
Rio Grande	20	Part of slope gage replaced.

Current restrictions and stop orders in effect are:

<u>Reservoir</u>	<u>WD</u>	<u>Date of Order</u>	<u>Restriction</u>
Mountain Home	35	-----	Mutual understanding that spillway should not be allowed to operate more than absolutely necessary.
Santa Maria	20	-----	Mutual understanding that spillway should never be used.
Terrace	21	-----	Mutual understanding that trash racks should not be exposed.

C. LIVESTOCK TANKS

On August 13, 1974, an application for eight livestock water tanks were reviewed by Ron Blewitt and denied on the basis that they were intermittent streams under 8-17-5 CRS 1963, as amended. At the request of the applicant, Mr. John T. Taylor, Mr. Blewitt reviewed seven of the eight proposed sites, and reconfirmed the denial. The proposed sites were in former Water District 24 on the Culebra Creek system.

VII. WATER RIGHTS

A. Tabulations

Reaction to the October 1973 revised tabulation of water rights was quite strong. There were clerical errors and errors due to the short intervals of time allowed to research court records, but the real gut issue involved in the protests was the combining of the water rights on Alamosa, La Jara, Trinchera, Culebra and Costilla Creeks with those on the Rio Grande and Conejos River. This method of listing priorities was as required by 148-21-27, CRS 1963, as amended (except that Costilla Creek might have been listed separately). The assumption by the water users and their attorneys was that this tabulation was to be an administrative list, in effect throwing all rights from the various former water districts into one priority system. Based essentially on this assumption some twenty formal protests to this Revised Priority List were filed with the Water Court by water rights on the upper Rio Grande, Trinchera, Alamosa and La Jara Creeks.

The October 1973 Revised Tabulations appeared to be the catalyst which finally pointed up the administrative burden placed upon the State Engineer's office by the Water Rights Determination Act of 1969. This burden is further weighted by Colorado's alleged debit status under the terms of the Rio Grande Compact.

In order to bring this entire matter before the water users of Division 3, three days of open administrative hearings were held in Alamosa on January 23, 24, and 25th by the State Engineer and his staff to discuss eleven basic issues (see Appendix) pertinent to water administration in Division 3. These hearings were well attended by water users, water user groups and their attorneys. The State Engineer and his staff covered each

of the eleven issues, in essence making a full disclosure of his position on each issue and by making he and his staff available for detailed questioning. There were mixed feelings on the value of these hearings by the water users, but the consensus agreed that the hearings were both necessary, informative, and beneficial. A complete transcript of those hearings was made and is available from the State Engineers office.

On February 27, 1974, Judge Donald Smith held a pre-trial hearing on ten of the protests to the tabulations which were consolidated for disposition by the court. C. J. Kuiper, James Geissinger, Don Hamburg from Denver, Ron Blewitt, D. H. McFadden, Jr. and Ray Walker from Alamosa were present on behalf of the Division of Water Resources, the protestants were represented by Attorneys John U. Carlson, George Woodard, Carlos Lucero, Elizabeth Conour and Gordon Rowe, Jr. It was agreed by all concerned that the matter should be stipulated, and the proceedings recessed by the Judge. A preliminary stipulation was agreed upon, although it was brought out at this time that the Conejos River interests were not represented and might well object to the stipulation. This, indeed, proved to be the case and several protests to the proposed stipulation were filed with the court by the various Conejos River groups. In spite of numerous meetings between the Grande and Conejos factions, and several revisions to the stipulations there has been no agreement reached to date.

On the basis of the proposed stipulation, the Revised Tabulation of Water Rights issued in July and again in October came out with separate priority lists for each drainage basin. Protests were again quite numerous to this office, the objections included both clerical and alleged non-clerical errors. A substantial number of

protests were also filed with the Water Court.

A list of water rights proposed for abandonment by the State Engineer were also published in July and October as required by 148-21-28, CRS 1963, as amended. As was expected, there were protests, certainly some of which were valid. These protests to the abandonment list will be reviewed in more depth, using more realistic guide lines (and more time!).

The State Engineer filed a Complaint for Declaratory Relief against certain and all water users in each of the seven water divisions. The purpose of this action is to extend the time deadlines as set forth in 148-21-28, CRS 1963, as amended, sufficiently to allow the legislature to statutorily extend the deadline for the preparation and publication of the tabulations.

In summary, the involvement with the tabulations and the resulting problems may prove to be a blessing in disguise. We are now aware of many of our shortcomings, and feel that, if given a reasonable amount of time, these shortcomings can be corrected and a reliable tabulations of water rights in Division 3 prepared.

B. Referre's findings and decrees

SUMMARY OF WATER COURT DECREES

<u>Category</u>	<u>1969 thru Oct 1972</u>	<u>Nov 1, 1972 thru Oct 1973</u>	<u>Nov 1973 thru Oct 1974</u>
Underground Water Right	52	752	3137
Change of Water Right	2	0	5
Plan of Augmentation	0	0	4
Surface Water Right	5	5	11
Diligence (Conditional Decree)	2	0	3
Water Storage Right	<u>1</u>	<u>3</u>	<u>4</u>
Total Decrees	62	760	3164
Applications Rec'd by the Water Court	2915	302	118
Number of Referee Consultations	62	760	3384

Total W-Cases received 1969 thru October 31, 1974 is 3,335.

Total W-Cases terminated 1969 thru October 31, 1974 is 1,320.

The accelerated rate of processing W-applications is a result of long overdue changes in water court procedures. Applications can now be reviewed by water court personnel, and structures investigated by field referees prior to the conference between the presiding referee and the division engineer's office. These conferences are regularly held in this office and require approximately 10 to 12 hours a week. It appears that we have processed roughly one third of the total W-applications received to date. Estimated time to become current is two years.

Plans of Augmentations as decreed by the Court involving changes in water rights and exchanges for subdivision water supplies may well present problems in effective administration. We are consulted by the water court at the time these Plans of Augmentation are heard, but are not aware of how the decree reads until it is signed by the Judge. It is our feeling that the decrees

issued to date require the division engineer to be responsible for determinations as to how the decrees will be administered to fully protect prior vested rights. We would still be in favor of a required conference with the Referee on Plans of Augmentation which would require a change in 148-21-23 (2) CRS 1963, as amended. In the meantime, we plan to notify and consult with the Denver office of upcoming hearings, and get as much input as possible from the legal and planning sections on such cases prior to the hearings.

VIII. ORGANIZATIONS

A. Water Conservation and Water Conservancy Districts

Rio Grande Water Conservation District
Mr. Franklin Eddy, Manager
Alamosa, Colorado 81101

Conejos Water Conservancy District
Mr. Leland Holman, Secretary
Manassa, Colorado 81141

San Luis Valley Conservation District
Mr. William DeSouchet, Attorney
Alamosa, Colorado 81101

Trinchera Water Conservancy District
Mr. Carl Escherman, Secretary
Blanca, Colorado 81123

B. Ditch Companies and Irrigation Districts

Antonito Ditch Company	Felix F. Gallegos Antonito, Colorado
Arroya Springs Ditch Company	Joe A. Martinez La Jara, Colorado
Billings Ditch Company	Roger T. Mitchell Monte Vista, Colorado
Canon Ditch Company	L. M. Gonzales Antonito, Colorado
Capulin Ditch Company	Joseph H. Chavez, Sec. La Jara, Colorado
Centennial Ditch Company	Maurice Stillings Alamosa, Colorado
Commonwealth Irrigation Company	Wilbur Wiescamp Alamosa, Colorado
Conejos and San Rafael Ditch Company	Candido Sandoval Antonito, Colorado
Consolidated Ditch and Headgate Company	Kenneth Riggenbach Monte Vista, Colorado
Costilla Ditch Company	George S. Myers Alamosa, Colorado
Cotton Creek Water Company	Mrs. Elsie Neese Moffat, Colorado
Ephraim Ditch Company	Bruce Reynolds Sanford, Colorado
Excelsior Ditch Company	Ed Loman Alamosa, Colorado
Farmers Union Ditch Company	Robert Myers Center, Colorado
Guadalupe Main Ditch Company	Leland R. Holman Manassa, Colorado
Head Overflow Ditch Company	John B. Shawcroft Alamosa, Colorado
Jaroso Mutual Ditch Company	Dave Barker Jaroso, Colorado
Lariat Irrigation Company	Henry Shriver Monte Vista, Colorado
Los Rincones Ditch Company	Gordy L. Bagwell Manassa, Colorado
Los Sauces Ditch Company	Nick Espinoza Sanford, Colorado
Manassa Land & Irrigation Company	Leland R. Holman Manassa, Colorado
McDonald Ditch Company	Thad Elliott Monte Vista, Colorado
Medano & Zapata Ranches Ditches	Malcolm G. Stewart, Jr. Hooper, Colorado

Miller Ditch Company
 Mogote-Northeastern Consolidated Ditch Co.
 Morgan Ditch Company
 New Cenicero Ditch Company
 New Union Ditch Company
 Oklahoma Company Ditches
 Plano Vista Ditch Company
 Richfield Canal Company
 Richfield Ditch Company
 Rio Grande-San Luis Irrigation Company
 Rio Grande & Piedra Valley Ditch Company
 Romero Ditch Company
 Saguache County Water User's
 Sanchez Ditch & Reservoir Company
 Sanford Canal Company
 San Juan & San Rafael Ditch Company
 San Luis Valley Canal Company
 San Luis Valley Irrigation District
 Santa Maria Reservoir Company
 Scandinavian Ditch Company
 Servietta Ditch Company
 South Side Arroya Ditch Company
 Sanford Ditch Company
 Terrace Irrigation Company
 The Prairie Ditch Company
 Trinchera Irrigation Company

Clark Hutchinson
 La Jara, Colorado
 Robert McCarroll
 La Jara, Colorado
 Maurice Smith
 La Jara, Colorado

 Joseph H. Chavez, Sec.
 La Jara, Colorado
 Ralph Curtis
 Saguache, Colorado
 Dale Smith
 La Jara, Colorado
 Dan Guymon, Supt.
 La Jara, Colorado
 Ray Shawcroft
 La Jara, Colorado
 Charles Stillings
 Monte Vista, Colorado
 Harold Roberts
 Monte Vista, Colorado
 R. A. Clements
 La Jara, Colorado
 John Woodard, Pres.
 Saguache, Colorado
 Frank Barker
 San Acacio, Colorado
 H. Lamont Morgan
 Sanford, Colorado
 Antonio Lucero
 Conejos, Colorado
 James Lillpop
 Alamosa, Colorado
 Robert Myers
 Center, Colorado
 H. C. Boyce
 Monte Vista, Colorado
 Edgar Ryker
 Alamosa, Colorado
 Leland R. Holman
 Manassa, Colorado
 Bonifacio Valdez
 La Jara, Colorado
 Clayton Peterson, Pres.
 Sanford, Colorado
 Phil Skinner, Pres.
 La Jara, Colorado
 Virgil Stahl
 Mosca, Colorado
 Lyle Smith
 Blanca, Colorado

C. Water Users Associations

Alamosa-La Jara Creeks Water Users
 Protective Ass'n. John Shawcroft, Pres.
 Alamosa, Colorado

 Association of Senior Water Rights James Higel, Pres.
 Alamosa, Colorado

 Monte Vista Water Users Association Leland Ullstrom
 La Jara, Colorado

 Rio Grande Canal Water Users Association John Wright, Pres.
 Monte Vista, Colorado

Saguache Creek Water Users

Roy Alexander, Sec.
Saguache, Colorado

Rio Grande Water Users Association

Bill U. Kopfman, Pres.
Center, Colorado

San Luis Valley Irrigation Well Owners
Association

Clyde Helms
Monte Vista, Colorado

WATER COMMISSIONER'S SUMMARY

Table 1
Item

Water Districts

	20	21	22	24	25	26	27	35	Total
Direct Flow Diversions (Ac. Ft.)	327,186.2	46,080	192,712	43,814.8	1/	21,239.6	1/	1/	
Reservoir Storage (Ac. Ft.)	14,006	10,634	36,900	18,097		250			
Amount Delivered From Storage	39,174.5	7,608	18,400	13,912.0		200			
Acres Irrigated	303,742	31,472	103,883	21,273		7,976			
Number of Ditches	442	96	149	101		236			
Number of Daily Ditch Reports	170	60	98	53		52			
Number of Reservoirs Served	14	1	1	3		1			
Average Delivery (Ac. Ft./Ac.)	1.19	1.79	1.86	2.67		2.70			

See Water Commissioner's records submitted under separate cover.

1/ These Districts on Data Bank - no information yet available

DIVISION SUMMARY - DIVISION No. 3
 Table 2 - Direct Flow Diversions
 (Period Nov. 1, 1973 through October 1974)

WD	Total Ditches Reported		Direct Diversions Ac. Ft.	No. of Acres Irrigated	Acre Foot Per Acre	Indus. Use of Diversion Ac. Ft.	Munic. Use Divisions Ac. Ft.	Rec. Use Divisions Ac. Ft.	Trans Mtn Diversion AF	Total Divisions AF	No. of Daily Ditch Report	Deliver to Com-pact Cmtmt AF
	Active	Inactive*										
		NA										
		NU										
20	197	225	20	303,742	1.08	365	529.8	140	+1353.48	362,391.2	170	90,500est.
21	64	17	16	31,472	1.46	0	0	0	0	56,410	60	0
22	100	0	49	103,883	1.86	0	0	0	0	192,712	98	34,400est.
24	67	7	17	21,273	2.06	0	0	0	0	56,824.8	53	0
1/25												
26	83	44	57	7,976	2.66	0	0	0	+64.2	21,503.36	52	0
1/27												
1/35									-880 est			

1/ These Districts on Data Bank - no information yet available

*NA = No Water Available

NU = Non Use (includes: no ditch, no headgate or no measuring flume

Transmountain Diversion: Designated either to (+) or from (-) Division

Special note: Total diversion for a District includes reservoir water.

DIVISION SUMMARY - DIVISION 3

Table 3 - Storage Report - Acre Feet
(Period Nov. 1, 1973 thru Oct. 31, 1974)

	Amount in Storage Acre Feet			Actual Am't Diverted to Storage During Season	Delivered from Storage to Irrigation	Storage to Municipal Use	Storage to Recreational Use	Storage to Industrial Use	Storage to Project
	Nov 1, 1973	May 1, 1974	Oct 31, 1974						
WD									
20	39,898	54,668.3	16,766.3	16,042.8	39,174.5	0	0	0	0
21	11,136	14,210	5,396	3,474	7,608	0	1,606	0	0
22	37,813	35,913	19,413	0	18,400	0	0	0	0
24	18,102	17,751	3,555	1,876	16,423	0	0	0	0
25	*								
26	250	250	50	0	200	0	0	0	0
27	*								
35	*								
TOTALS									

* These districts are on data bank - no information available at this time.

XI. RECOMMENDATIONS AND SUGGESTIONS

A. Operating Criteria

1. Rio Grande Compact

The 1975 Operating Criteria should include guidelines for the administration of all the tributaries to the Rio Grande River above Lobatos, i.e. Trinchera, La Jara and Alamosa Creeks in addition to the Rio Grande and Conejos Rivers. These criteria should reflect input from water user groups on all tributaries, and should provide for effective means of day-to-day administration. They must provide for an equitable distribution of water within the priority system to Colorado appropriators as well as an equitable distribution of Colorado's yearly compact obligation.

We strongly recommend these 1975 criteria be prepared well in advance of the irrigation season, with ample time for review and discussion prior to being firmed up. Valley wide distribution to the news media of the final draft prior to the start of the irrigation season could obviate much of the criticism that we have received in the past.

2. Non-tributary to the Rio Grande Compact

It would appear that a fairly simple operating criteria might be considered for those areas where the surface streams are non-tributary but the artesian and artesian recharge underground water are tributary. These criteria would outline the rationale behind the administration practices of the last several years.

B. Administration of Wells

The administration of underground water rights as required by law is the number one problem to be faced in Division 3. It is difficult to place the blame for the damage to the senior surface rights anywhere except on the wells. Curtailment of the wells to the

extent required to reasonably lessen the damage to these senior rights would bring economic ruin to the valley. The water user group leading the way in searching for a solution to the problem is the San Luis Valley Irrigation Well Owners Association, Inc. (SLVIWD). As we understand their proposed Plan of Augmentation (and their method of operation), we are not at all optimistic.

The only source of unappropriated water is, of course, the Closed Basin Project, which appears to have no chance of being federally funded in the foreseeable future. It is therefore recommended that we support a vigorous public relations campaign to build a salvage project without federal aid, but using revenue supplied or generated by the underground water users. In the absence of any other real source of water for payment, such payment might be in the form of dollars, but this would not make more water available.

We hope to have effective means to administer underground water within 3 years. To be in this position, certain programs need to be initiated immediately. We strongly recommend the following steps be taken immediately.

1. Issuance of blanket orders requiring that all non-exempt wells have controlling devices (valves) installed, and where necessary, repairs made to the existing well appurtenances to prevent waste of water.
2. Require the installation of an approved totalizing meter on each new well. This could be included on the permit under "Conditions of Approval".

3. Require the installation of totalizing meters on existing non-exempt wells on a phase basis in some manner similar to:

<u>Period in which well drilled</u>	<u>Deadline for meter installation</u>
Jan 1, 1970 - to date	Jan 1, 1976
Jan 1, 1960 - Dec 31, 1969	Jan 1, 1977
Prior to Dec 31, 1959	Jan 1, 1978

4. Require the installation of a permanent and readily accessible means of identification of all non-exempt wells. Such identification should include both the adjudication W-number (W-1234, Well #3) and the State Engineer registration number.

5. Build up our water commissioner staff, also on a step basis, to provide means of enforcement. The first step might be moving our part time water commissioners to full time and utilizing them during the non-irrigation season in well administration. Additional part time commissioners or deputies should be added as needed. (We are well aware of the necessary lead time in budgeting problem!)

C. General Comments

Problems of a lesser nature which require some thought and decision making in the near future are listed below. Comments, suggestions or recommendations are included with each.

1. Tabulations and Data Bank

Our problem here in the Division 3 office with computer involved programs are undoubtedly shared by the other divisions and the Denver office. Confusion and error result from the short amount of time we are allotted to complete our part of the assignment. We hope that as the computer programs mature, we can be allowed more time to prepare and check the input from here.

2. Evaporation Charges on Reservoirs

Recent talks with local Colorado Department of Wildlife personnel have brought up a problem similar in some respects to those on the wells. If we make evaporation charges as required in 148-7-17 (5) CRS 1963, as amended, and by the terms of the Rio Grande Compact, the projected plans of the Division of Wildlife will be seriously restricted due to a lack of water. This matter has been discussed at length with Glen Brees and Bill Mattern. Due to the possibility of touchy relations with another agency in the Division of Natural Resources, this office has asked for guidance from higher authority before proceeding.

3. Fish Ponds

The subject of fish ponds comes up with increasing frequency at water user meetings, and in conversation with concerned individuals on all rivers. Evaporative losses from an individual pond might be considered inconsequential, but the cumulative effect, particularly in dry years, is a matter of concern. The number of these ponds is reported to be increasing, particularly on the Rio Grande. If owners of such ponds apply for adjudication as a non-consumptive use, it would appear that we should make a determination on the basis of cumulative effect. We would appreciate comments on this matter.

4. Seeps and Drains

Drains (and seep) decrees were administered under the 1974 Operating Criteria on the same basis as wells. This seems to be a logical manner as far as pumping from the drain, but should we give some thought as to whether or not the

checking of drains to build up the sub for irrigation be administered?

D. CONCLUSIONS

The division engineer's job in Division 3 is challenging, frustrating and completely fascinating.

We have been operating with one less engineer since October 7, 1974, and it has been an extremely busy period. The personnel in this office have been most diligent and cooperative in getting the on-going work and the annual report done. I appreciate very much their efforts. I am also aware of and greatly appreciate the help and spirit of cooperation I have received from the Denver office. My tenure as Acting Division Engineer has been an enjoyable experience, and I look forward to the coming year with anticipation.

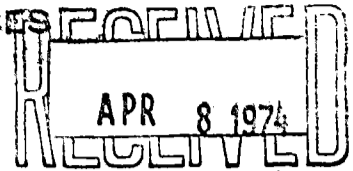
D. H. Myaldeen





DIVISION OF WATER RESOURCES

Department of Natural Resources
300 Columbine Building
1845 Sherman Street
Denver, Colorado 80203



April 5, 1974

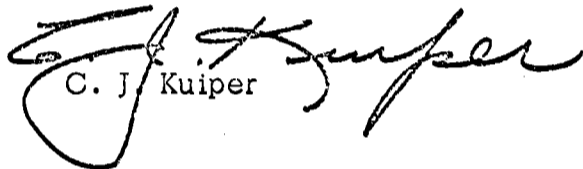
TO WHOM IT MAY CONCERN

FROM: C. J. Kuiper, State Engineer

SUBJECT: 1974 Operating Criteria - Rio Grande and Conejos River
and their Tributaries

On March 12 copies of the proposed Operating Criteria for the Rio Grande and Conejos River and their tributaries, dated March 1, was forwarded to interested parties. Since the date of the mailing, changes and amendments have been made to these criteria. Enclosed are the Criteria that will be in force and effect for these rivers, dated April 1, 1974. All previous criteria should be discarded.

CJK:grl


C. J. Kuiper

water or underground water, may be regulated at those times and to the extent necessary to deliver the amount of water required pursuant to the terms of that compact.

III

Any diversion of water from an aquifer hydraulically connected to

surface streams shall be prohibited except at those times, and in those quantities necessary for the permitted beneficial use of such water. Such times shall be described as follows: for irrigation purposes, those times during which direct flow diversions are allowed from the Rio Grande or Conejos River or their tributaries, whichever is applicable; for stock or domestic uses as exempted by Section 148-21-45, Colorado Revised Statutes 1963, as amended, only in those quantities allowed by said section, and necessary for such uses; for all other purposes, including fish and wildlife propagation, only at those times and in those quantities necessary for the application thereof to permitted beneficial use, and when such does not constitute waste of water. Further, the diversion of ground water from aquifers hydraulically connected to surface streams shall be prohibited on each Sunday during the periods outlined above. Decrees deriving their source of supply from drains are included under the interpretation of this section.

IV

Any injury to senior vested rights by appropriators of underground water must be reasonably lessened in order for the appropriator to continue to divert water. Appropriation of all or part of such junior right may be permitted if the Division Engineer approves a written plan submitted to him whereby the amount of the injury caused by that junior right will be reasonably lessened.

V

Any appropriator may elect to treat any well or wells under a temporary plan of augmentation for part or all of any decreed surface right or any other valid water right, upon the approval of a written plan therefor by the Division Engineer; provided that no material injury occurs to any other vested right.

VI

All compact index stations will be rated by state hydrographers as often as needed to maintain a currently accurate record and records will be

adjusted accordingly.

VII

The water users of the Rio Grande and Conejos River and their tributaries are encouraged to utilize either an existing entity such as the Rio Grande Water Conservation District or another entity to make full use of these operating criteria to augment the runoff at the Lobatos Gaging Station and to attempt to remedy injury by junior appropriators so that maximum utilization can be made of all the waters available in the San Luis Valley. The Office of the State Engineer will give whatever assistance possible to implement plans of augmentation or replacement water.

VIII

In recognition of the depletion of stream flows caused by the extraction of ground water, both shallow and artesian, this depletion falling most heavily on the Conejos River, the State Engineer's Office shall pursue in cooperation with any local agency or agencies studies and projects which will help provide equity to those surface water users so injured.

IX

Based upon evaluation of the distribution of return flows below Alamosa, the following division of return flow credits shall be utilized as between the Rio Grande and Conejos:

- a. In the reach between the gaging stations "Rio Grande above La Jara Creek" and "Rio Grande below Trinchera Creek", sixty percent (60%) of the return flow shall be credited to the Conejos River and forty percent (40%) to the Rio Grande.
- b. In the reach between the gaging stations "Rio Grande below Trinchera Creek" and "Rio Grande east of Manassa", one hundred percent (100%) of the return flow shall be credited to the Conejos River.
- c. In the reach between the gaging stations "Rio Grande east of

Manassa" and "Rio Grande at Lobatos" the gain or loss shall be prorated between the Conejos River and Rio Grande on the basis of total contribution at the gaging station "Rio Grande east of Manassa".

X

In recognition of the serious depletion caused to the Conejos River by ground water diversions from both the shallow and confined aquifers, 7,000 acre-feet of the 10,000 acre-foot credit given Colorado under the provisions of the Rio Grande Compact shall be credited to the Conejos River delivery schedule and 3,000 acre-feet shall be credited to the Rio Grande delivery schedule.

XI

In recognition of the approximately 34,000 acre-feet of flood water currently in storage in Platoro Reservoir, said water being stored during calendar year 1973, fifty (50) percent of that water shall be considered as a credit to the 1974 Rio Grande delivery schedule and fifty (50) percent shall be considered as a credit to the 1974 Conejos River delivery schedule. This water shall be released from Platoro Reservoir for delivery to Lobatos as soon as possible. Delivery schedules of the Conejos River and Rio Grande will be adjusted to reflect these credits at such time as the water is actually delivered to La Sauses.

XII

Variances to these criteria will be allowed by the Division Engineer when so authorized by the State Engineer after consultation with local advisory groups.

DETAILED CRITERIA - RIO GRANDE AND ITS TRIBUTARIES EXCEPT THE CONEJOS RIVER

1. Runoff Estimate

- a. Estimate total annual runoff at Del Norte from Soil Conservation Service and other estimates for April - September on May 1, and, using a long term average monthly runoff pattern, extend the estimate to a full year.

2. January, February and March

a. There will be no direct flow diversions from the Rio Grande or its tributaries during the months of January, February and March except for those rights decreed for use throughout the year. Storage in pre-compact reservoirs will be permitted during this period provided that 15 percent of all water stored shall be considered as stored out of priority in accordance with the Colorado Revised Statutes, chapter 148-11-25, as amended. This water may be called by the State Engineer for compact commitments if required, but any water so stored will revert to absolute ownership of the reservoir in which it was held for its use as soon as it can be determined that the out-of-priority water will not be required to meet Compact commitments. In the event any reservoir should spill, the out-of-priority water will be the first to spill.

3. April through October

a. Direct flow diversions may commence upon a date to be determined annually by the State Engineer after consultation with the Rio Grande Water Users Association and other interested entities.

b. Actual runoff at the Del Norte Index Station for the months of January, February and March and the estimated runoff for November and December will be combined to provide an estimated supply at the index station during the non-irrigation months of the calendar year. The actual Rio Grande deliveries at the Lobatos Gaging Station, less the Conejos at La Sauses, for January, February and March will be combined with the estimated Rio Grande deliveries, less the Conejos at La Sauses, at that station for November and December and deducted from the estimated annual requirements to provide an estimated compact delivery requirement for the remainder of the year.

- c. From the estimated monthly runoff pattern at the Del Norte Index Station, as computed in 1a and 3b above, monthly delivery requirements will be projected for the months of April through October.
- d. If the total annual estimated index at Del Norte is 700,000 acre feet or greater, deliveries to Colorado appropriators will commence at 85 percent of the amount of the discharge at the Del Norte Index Station. This amount will be used to determine a working priority date for the main stem in order of priority until the entire amount is delivered. Water in the tributaries will be delivered in priority until the working priority date established above is reached.
- e. If the total annual estimated index at Del Norte is less than 600,000 acre feet, deliveries to Colorado appropriators will commence at 100 percent of the amount of the discharge at the Del Norte Station. This amount will be used to determine a working priority date for the main stem in order of priority until the entire amount is delivered. Water in the tributaries will be delivered in priority until the working priority date established above is reached.
- f. If the total annual estimated index at Del Norte is between 600,000 acre-feet and 700,000 acre-feet, deliveries to Colorado appropriators on the main stem will commence at a percentage determined by proportional parts beginning with 100% for an estimate of 600,000 acre-feet and 85% for an estimate of 700,000 acre-feet.
- g. If at any time, this delivery schedule results in a flow at Alamosa in excess of 2,000 cubic feet per second, delivery to Colorado appropriators may be increased temporarily to include deliveries to additional decrees within the priority system to prevent flooding in Alamosa.
- h. Every ten days throughout this period, a status report will be made by the Division Engineer to reflect the accuracy of the

monthly and annual estimates of both the supply at the Del Norte Index Station and the delivery at the Lobatos Gaging Station and deliveries to Colorado appropriators adjusted, when necessary. When adjustments of 10% or more are proposed, the Division Engineer will notify the President of the Board of Directors of the Rio Grande Water Users Association.

i. Storage in pre-compact reservoirs will be permitted during this period as follows:

1. During the months of April and May, 15 percent of all water stored shall be considered as stored out of priority in accordance with CRS 148-11-25, as amended. This water may be called by the State Engineer for compact commitments if required, but any water so stored will revert to absolute ownership of the reservoir in which it was held for its use as soon as it can be determined that the out-of-priority water will not be required to meet Compact commitments. In the event any reservoir should spill, the out-of-priority water will be the first to spill.
2. During the months of June through October when deliveries to direct flow users are at or less than 100% of the Del Norte Index, "pre-compact" reservoirs may be permitted to store out of priority under the following provisions.
 - (a) Reservoirs will store quantities of water not to exceed the amount of return flow developed below the Del Norte gaging station and above the New Ditch headgate near Alamosa. This storage will be determined on a daily basis and the daily amount so stored will be added to the following days Del Norte index to ensure that junior rights in priority are not deprived of legally available water.
 - (b) The amount of storage on any given day will be determined by the availability of return flows to

satisfy those decrees actually in priority and upon the actual inflow to the reservoirs.

- (c) Daily records of such storage will be maintained to permit determination of all operations and water entitlements.
- (d) All storage under these provisions will be considered as out-of-priority storage. On October 1, the State Engineer will determine the amount of such storage required for the compact commitment and shall require delivery of that amount. The amount called from the several reservoirs shall be pro-rated on the basis of the total amount of such water stored under these provisions.
- (e) Any portion of water stored under these provisions that is not required for compact commitments shall revert to the sole ownership of the reservoir in which it is stored.
- (f) No water stored under these provisions shall be available for use by any water user until the determination is made by the State Engineer (d above) as to the Compact requirements.
- (g) In the event any reservoir should spill, the out-of-priority water shall be deemed to be the first to spill.
- (h) While water is in storage under these provisions, no evaporation losses shall be charged to such water needed for Compact commitments.
- (i) All water stored under this provision will be the first water called out for compact purposes.

4. November and December

- a. There will be no direct flow or ground water diversions from the Rio Grande or its tributaries during the months of November and December (except for those rights decreed for use throughout the year) unless it is determined that such curtailment is not

necessary to meet compact delivery requirements at the Lobatos Gaging Station.

DETAILED CRITERIA - CONEJOS RIVER AND ITS TRIBUTARIES

1. Runoff Estimate

a. Estimate total runoff from Soil Conservation Service and other estimates for April through September on May 1 and using the long term average monthly runoff pattern, extend the estimate for the index stations to a full year.

2. January, February and March

a. There will be no direct flow diversions from the Conejos River and its tributaries during the months of January, February and March except for those rights decreed for use throughout the year (provided there is no other source of supply available). In the event of unusual hydrologic or climatic conditions, limited diversions may be permitted in March on a case by case basis upon concurrence of the Division Engineer, the Conejos River Water Conservancy District, and any other affected water user organization.

3. April through October

a. Direct flow diversions may commence upon a date to be determined annually by the State Engineer after consultation with the Conejos River Water Conservancy District and other interested entities.

b. Actual runoff at the Mogote Index Stations for the months of January, February and March and the estimated runoff for November and December will be combined to provide an estimated supply at that station during the non-irrigation season. The actual Conejos River deliveries at La Sauses gaging station for January, February and March will be combined with the estimated deliveries at La Sauses for November and December, and deducted from the estimated annual delivery requirement to provide an estimated delivery requirement for the remainder of the year.

c. From the estimated monthly runoff pattern for the Conejos

River near Mogote, the Los Pinos near Ortiz and the San Antonio River at Ortiz, monthly delivery requirements at the La Sauses gaging station will be projected for the months of April through October.

d. Deliveries to Colorado appropriators will total 110% of the amount of discharge at the Conejos, Los Pinos and San Antonio River index stations less the percentage of the remaining amount (April through October, 3 b above) to be delivered to La Sauses in the current year. This amount will be distributed to decrees in order of priority until the entire amount is delivered.

e. If, at any time, this delivery schedule results in a flow in the Conejos River Channel in excess of its capacity, without flooding, delivery to Colorado appropriators may be increased temporarily to include deliveries to additional decrees within the priority system to prevent such flooding.

f. Every ten days throughout this period, a status report will be made by the Division Engineer to reflect the accuracy of the monthly and annual estimates of the supply at the three index stations and the delivery at the La Sauses gaging station and the deliveries adjusted when necessary. When adjustments of 10% or more are proposed, the Division Engineer will notify the President of the Conejos River Water Conservancy District.

4. November and December

a. There will be no direct flow or ground water diversions from the Conejos River or its tributaries during the months of November and December (except for those rights decreed for use throughout the year provided there is no other source of supply available) unless it is determined that such curtailment is not required to meet compact delivery requirements at the La Sauses gaging station.

17405
MC

R E S O L U T I O N

WHEREAS, under provisions of the fourth unnumbered paragraph of Article VI of the Compact, the Commission, by unanimous action, may authorize the release of water held in storage pursuant to the second and third unnumbered paragraphs of this Article.

NOW THEREFORE, IT IS HEREBY RESOLVED that Colorado be authorized to release and is hereby requested to release from storage in Platoro Reservoir any amount of water which is held in storage on November 1, 1974 by reason of accrued debits of Colorado, such releases to be commenced as soon as practicable thereafter, to attain maximum delivery of the released water to Elephant Butte Reservoir, and to be completed prior to March 1, 1975; provided that said authorization and request shall be subject to revocation by written notice of the Commissioner of any signatory state at any time prior to October 1, 1974.

Calo

R E S O L U T I O N

WHEREAS, the members of the Rio Grande Compact Commission have concluded that storage of flood waters in Platoro Reservoir in Calendar Year 1973 has accomplished the objection^{ive} of the Corps of Engineers in preventing downstream flood damage;

NOW, THEREFORE, IT IS HEREBY RESOLVED that the U. S. Bureau of Reclamation is requested to release those flood waters stored in Calendar Year 1973 at the time and rate requested by the Commissioner from Colorado.

New Mexico

R E S O L U T I O N

PLATORO RESERVOIR OPERATION

WHEREAS, the Supreme Court of the United States on May 6, 1968 granted, upon stipulation of the parties, a continuation in the litigation State of Texas and State of New Mexico v. State of Colorado, Number 29, Original, and

WHEREAS, the stipulation provides, among other things, that "The State of Colorado undertakes to deliver water at the Colorado-New Mexico state line to meet every year the delivery obligation established by the schedules of Article III of the Rio Grande Compact."

NOW THEREFORE, BE IT RESOLVED, by the Rio Grande Compact Commission, that, ^{solely} for the purpose of assessment of the State of Colorado's fulfillment of the aforementioned undertaking, the amount of water stored in Platoro Reservoir ^{in any year} after 1973 for flood control or on account of the rate of inflow to the reservoir exceeding the capacity of the outlet works and which water is retained in storage ^{on December 31} ~~at the end~~ of that year shall be added to the amount of water delivered to the Colorado-New Mexico state line in that same year; and in any year in which water thus stored and retained in a prior year is released from Platoro Reservoir for delivery to the Colorado-New Mexico state line, the amount of water so released shall be deducted from the amount actually delivered at the Colorado-New Mexico state line. *This resolution shall not affect any provision of the Rio Grande Compact.*

Adopted this _____ day of _____, 1974

R E S O L U T I O N

WHEREAS, H. R. 1677 has been introduced in the 93rd Congress to authorize the Secretary of the Interior to make water available from the San Juan-Chama Unit of the Colorado River Storage Project for a minimum recreation pool in Elephant Butte Reservoir, and

WHEREAS, the United States Bureau of Reclamation, the Elephant Butte Irrigation District and the El Paso ^{County} Water _A Improvement District No. 1 offer no objection to the storage of water in Elephant Butte Reservoir for said minimum recreation pool, and

WHEREAS, the implementation of H.R. 1677 would require that certain procedures having no effect on Rio Grande Compact provisions be agreed to by the Rio Grande Compact Commission for accounting of San Juan-Chama Project water in Elephant Butte Reservoir;

NOW, THEREFORE, BE IT RESOLVED, by the Rio Grande Compact Commission assembled in annual meeting in ^{Albuquerque,} ~~Alamosa,~~ ^{New Mexico} ~~Colorado~~ this ^{31st} ~~30th~~ day of ^{May 1974} ~~March 1973~~, that the Commission agrees for the purpose of accounting for San Juan-Chama Project water stored in Elephant Butte Reservoir:

- 1) the term "usable water" as defined in Article I of the Rio Grande Compact shall not include San Juan-Chama project water stored in Elephant Butte Reservoir;

- 2) In the determination of "actual spill" as that term is defined in Article I of the Rio Grande Compact, neither the spill of "credit water", as that term is defined in Article I of the Rio Grande Compact, nor "actual spill" shall occur until all San Juan-Chama project water stored in Elephant Butte Reservoir shall have been spilled;
- 3) the amount of evaporation loss chargeable to San Juan-Chama project water stored in Elephant Butte Reservoir shall be that increment of the evaporation loss from the reservoir resulting from the storage of San Juan-Chama project water; the evaporation loss from the reservoir shall be taken as the difference between the gross evaporation from the water surface of Elephant Butte Reservoir and the rainfall on the same surface, and
- 4) nothing herein shall be construed to alter, amend, repeal, modify or be in conflict with the provisions of the Rio Grande Compact.

BE IT FURTHER RESOLVED, That the Secretary shall forward a copy of this Resolution to the Regional Director, Southwest Region, Bureau of Reclamation and to the Boards of Directors of the Middle Rio Grande Conservancy District, the Elephant Butte Irrigation District and the El Paso ^{County} Water Improvement District No. 1.

R E S O L U T I O N

New Mexico

STORAGE OF IMPORTED SAN JUAN-CHAMA PROJECT WATER
IN ABIQUIU RESERVOIR

WHEREAS, certain entities in the State of New Mexico have contracted with the Secretary of the Interior for water from the San Juan-Chama project and may be benefitted by the storage of their imported San Juan-Chama project water at Abiquiu Reservoir by the Corps of Engineers, and

WHEREAS, the Corps of Engineers has decided that imported water ^{could} should be stored in Abiquiu Reservoir for release upon the demand of the owners thereof only if the Rio Grande Compact Commissioner for each of the States of Colorado, New Mexico and Texas does not object to such storage;

NOW THEREFORE, BE IT RESOLVED, that the Rio Grande Compact Commissioner for each of the States of Colorado, New Mexico and Texas, assembled in annual meeting of the Rio Grande Compact Commission in Albuquerque, New Mexico on May 3, 1974, hereby grants his consent to the storage of imported San Juan-Chama project water in Abiquiu Reservoir for release on demand of the owners thereof ^{so long as} ~~provided that~~ Rio Grande water has prior right to usage of the capacity of the channel of Rio Chama and this San Juan-Chama project water may not be released so as to interfere with the passage of Rio Grande water in the channels of the Rio Chama or Rio Grande; and provided further, that water accounting for San Juan-Chama project water stored and discharged from Abiquiu Reservoir will be established by the Rio Grande Compact Commission;

BE IT FURTHER RESOLVED, that copies of this Resolution be furnished to the District Engineer, Corps of Engineers and the

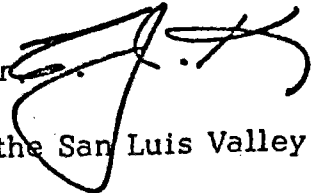


DIVISION OF WATER RESOURCES

Department of Natural Resources
300 Columbine Building
1845 Sherman Street
Denver, Colorado 80203

December 4, 1973

TO WHOM IT MAY CONCERN

FROM: C. J. Kuiper, State Engineer 

SUBJECT: Administrative Problems in the San Luis Valley

Recent legislation, the U. S. Supreme Court Stipulation dated April 17, 1968 on the Texas and New Mexico lawsuit, the requirement for rigid administration to meet compact commitments, studies on the relationship of ground and surface water, and complaints by various diverse interests in the valley have made it imperative that a complete analysis be made of administrative procedures in the San Luis Valley. Disagreements among many water user entities are manifested by protests to the Governor, to the State Engineer and to the Director of the Department of Natural Resources on past administration of the waters of the San Luis Valley. It is the purpose of this memorandum to outline the many issues, present both sides of the controversy as related by adversary parties, and the State Engineer's position. A further purpose of this memorandum is to encourage the many diverse interests to assist the State Engineer in resolving these differences through negotiation and arbitration without resorting to litigation. There is a strong feeling among administrative water officials, major water user groups and attorneys that some of these issues could be resolved with a memorandum of this type and/or administrative hearings. The advantages of administrative hearing, prefaced by the assertion that an appeal to Court would not preclude a de novo trial, rather than Court litigation are many:

1. The expense to the water user entity is much less.
2. The State Engineer's office could make full disclosure of all of the engineering studies and facts for the benefit of the water user groups who can ill afford to duplicate these type studies and compilation of data.
3. The State Engineer could ascertain all of the facts and contentions which each water user entity could present in the testimony.

To Whom it May Concern

Page 2

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Subject: Administrative Problems in the San Luis Valley

4. It appears to be the best means by which the State Engineer's office can make available to the water user groups all of the data and studies which are public information; and

5. Negotiation and arbitration in an administrative hearing are much easier to accomplish and could be the vehicle to prevent a multitude of damaging lawsuits which may result.

ISSUE NO. 1

Should the Conejos River and the Rio Grande and all of the tributaries be administered under one priority system?

YES

1. The Rio Grande Compact did not repeal the Colorado Constitutional doctrine of prior appropriation or its system of administering waters under the priority system.
2. The compact commitment is the number one water right on the system and that "call" is at the Lobatos Gaging Station.
3. With the "call" at the Lobatos Gaging Station, which is below the confluence of the Conejos, Rio Grande and their tributaries, Colorado water law requires that upstream water rights shall be curtailed in reverse order of priority, if such curtailment will satisfy that "call" or a portion thereof.
4. Recent studies have indicated that most of the water in the San Luis Valley meets the definitions in Section 148-21-3(3) and (4).
5. The special delivery schedules for the Conejos and the Rio Grande as outlined in the compact are nothing more than mathematical calculations to determine Colorado's obligations to deliver water at the New Mexico state line.
6. It is contrary to Colorado water law to shut off a decreed water right on the Conejos which is senior to a decreed water right on the Rio Grande which is permitted to continue to divert when the "call" is below the confluence of the two rivers.

NO

1. Special delivery schedules for the Conejos River and the Rio Grande, as a part of the compact, require administration as two separate rivers.
2. Historically, these rivers have been administered as separate entities in accordance with the delivery schedules outlined in the compact.
3. Intrastate negotiations at the time of the promulgation of the compact anticipated separate administration of the two rivers according to compact schedules.

4. Article I (e) defines a "tributary" as any stream which naturally contributes to the flow of the Rio Grande.

STATE ENGINEER'S POSITION

The State Engineer's position is to be determined after an administrative hearing on the issue.

ISSUE NO. 2

Should Trinchera, La Jara, Alamoso Creeks and all other tributary streams be subject to administration under the compact "call"?

YES

1. There is no provision in the Rio Grande Compact, nor any evidence that the compact repealed Colorado water law or the Constitutional Doctrine of Prior Appropriation.
2. Article I (e) defines "tributary" as any stream that naturally contributes to the flow of the Rio Grande.
3. Section 148-21-2(1) and (2) declare that underground and surface water must be used conjunctively and maximize the beneficial use of all of the waters of the state.
4. Section 138-21-3 declares all surface and underground water in or tributary to all natural streams as "waters of the state".
5. 148-21-3(4) defines "underground water" as water in the unconsolidated alluvial aquifer and other sedimentary materials and all other waters hydraulically connected thereto influencing movement of water in that aquifer or natural stream.
6. In the case of Trinchera, La Jara and Alamosa Creeks, evidence strongly supports the contention that these streams are tributary to the Rio Grande if not by direct surface flow, certainly by the tributary underground water as defined in Section 148-21-3(4).
7. Failure to administer tributary streams is contrary to Section 148-21-35(2) and 148-21-17(3).
8. It is inconceivable that the compact negotiators did not recognize and take cognizance of the fact that there was inflow to the Rio Grande between the index stations and the Lobatos Gaging Station. The fact that these streams are not provided with index gaging stations is immaterial.

NO

1. If the compact negotiators had intended tributary streams such as Trinchera, La Jara and Alamosa Creeks to be subject to the compact, index stations would have been provided on these streams.

2. These streams are not tributary in the surface channel.
3. No tributaries to the Rio Grande have been subject to administration historically with the compact "call".
4. Administration of these tributary streams would disrupt the economy and interfere with historic farming practices.
5. Winter irrigation is not being recognized as a beneficial use.

STATE ENGINEER'S POSITION

The State Engineer is required to administer the waters under state and federal statutes, the constitution and court decrees. Nothing in the statutes can be found to justify curtailing a decree on the main stem of the river and permitting junior decrees on a tributary to continue to divert. It is therefore the position of the State Engineer that tributaries to the main stem are subject to administration under Section 148-21-35(2).

ISSUE NO. 3

Should junior tributary underground water appropriators be curtailed when senior surface water rights are curtailed under the compact "call" or injured during periods of low surface run off?

YES

1. Section 148-21-3(4) defines defines underground water hydraulically connected to the natural stream to be a part of that natural stream.

2. Being subjected to the same priority system as the surface water rights makes it imperative that the State Engineer administer those underground water appropriations within the priority system.

3. By intercepting return flow to the river, or directly depleting surface flow, wells not only deplete the surface flow in times of need by senior surface water rights but also diminish the delivery of compact commitments at the state line requiring further curtailment of senior surface rights.

4. The Water Law enacted in 1969 made ample provision for underground water appropriations to be decreed and provided for augmentation, exchange or replacement water to remedy injury to senior water rights.

NO

1. A tremendous economy has been built on the use of underground water in the San Luis Valley and it would be disastrous to destroy this economy by shutting off wells.

2. Well pumping does not interfere with the surface flows in the stream and it would serve no useful purpose to curtail wells.

STATE ENGINEER'S POSITION

The 1969 Water Rights Determination and Administration Act, referred to as Article 148-21 or Senate Bill 81, provided that tributary underground water and the surface stream are a common source of supply and would be administered as such. The economic impact of rigid enforcement of the priority system without providing for a transition time would result in serious economic difficulty in the San Luis Valley. A gradual increase of curtailment of tributary underground water appropriations will provide well owners an opportunity to

December 4, 1973

organize plans of augmentation, obtain decrees as alternate points of diversion or provide some means of compensation for the injury to senior appropriators. Efforts are being made to provide an entity and procedures for accomplishing remedy of this injury and wells will be curtailed progressively more each year until complete remedy of injury is accomplished or they must shut off completely in the priority system.

ISSUE NO. 4

Should storage decrees be curtailed or regulated to provide for some contribution to the compact deliveries?

YES

1. The compact commitments for delivery of water to the New Mexico state line is an obligation of each and every water right in the San Luis Valley, including the junior storage rights.

2. By permitting upstream storage even during the off-irrigation season, downstream senior rights are injured because had that water not been stored, it would have contributed to the deliveries at the Lobatos Gaging Station and relieved senior water rights of curtailment during the irrigation season.

NO

1. The economic impact of complete shut off of storage would be disastrous to the San Luis Valley.

2. When water is stored in priority, such water, under Colorado Water Law, belongs to the owner of the storage right.

3. Without this stored water for late season use, irrigated agriculture economy of the San Luis Valley would be irreparably damaged.

4. Storage water when released and applied to irrigated acreages through surface ditches maintain the ground water table so that those areas dependent on ground water withdrawal can survive.

5. By proper manipulation of upstream storage space, damaging floods downstream can be mitigated or eliminated.

STATE ENGINEER'S POSITION

Storage decrees unquestionably are obligated to contribute to compact deliveries at the state line. The advantages of upstream storage are many, including extension of the irrigation season to grow crops which would otherwise not be possible. The State Engineer's position is that a percentage of this stored water should be declared to be stored "out of priority" according to Section 148-11-25(1). This would provide a "cushion" which could be used in the latter part of the irrigation season or during the fall and winter months if the water was needed to meet compact commitments.

ISSUE NO. 5

Is the confined aquifer (artesian) tributary to the Rio Grande stream system and subject to administration accordingly?

YES

1. U. S. Geological Survey Circular No. 18 estimates upward leakage from the confined to the unconfined aquifer in the amount of six-tenths to eight-tenths acre-feet per acre each year.

2. Circular No. 18 attributes diminishing flows of artesian springs in the valley to the increased withdrawal of water from the confined aquifer with this decline in flow estimated to be about 22,000 acre-feet per year since 1951.

3. The Circular states that it is likely that water from the Conejos River, in the reach between Mogote and Manassa, has been induced into the confined aquifer because of the reduced pressures in the confined aquifer as a result of increased pumping.

4. The bulletin states that apparently there is a hydraulic connection between the Conejos River and the confined aquifer along the fault and/or depositional contact of the valley fill and the volcanic San Luis Hills and that the timing of depletion and flow of the Conejos River correlate with increased withdrawal of water from the confined aquifer.

5. The confined aquifer derives its recharge supply from surface water around the periphery of the stratum of blue clay.

6. Every indication is that depletion from the confined aquifer has seriously affected the flows of the Conejos River, other surface streams, and the availability of water in the unconfined aquifer.

7. The fact that the confined aquifer is tributary, appropriators from this aquifer should be required to remedy injury to senior vested rights, including the compact "call" at Lobatos.

NO

1. The confined aquifer in the San Luis Valley is not, and historically has never been, considered as tributary in that it does not naturally contribute to the flow of the Rio Grande.

2. Administration of diversions from the confined aquifer would be a serious detriment to the economy of the San Luis Valley.

3. The considerable cost of the drilling and equipping of artesian wells would be wasted if appropriations from that aquifer were administered in the priority system.

4. Water in the confined aquifer does not fit the definition of "underground water" under Section 148-21-3(3) and (4).

5. Historically diversions from the confined aquifer have not been administered and should not be administered now because of Section 148-21-27(1)(vi).

6. Contributions to the compact commitments at the state line by appropriators from the confined aquifer were never anticipated by the negotiators of that compact.

STATE ENGINEER'S POSITION

The confined aquifer is tributary to surface streams in the sense that it derives its water from surface streams, is hydraulically connected to the surface streams and influences the movement of water of the natural streams. A water right can not be acquired in Colorado by adverse possession and appropriations from the confined aquifer are subject to all of the provisions of Article 148-21. A reasonable lessening of material injury to prior vested rights must be made by appropriators from the confined aquifer in increasing amounts over a transition period to permit those appropriators to continue to pump from the confined aquifer.

ISSUE NO. 6

Should the surface water appropriators be given preference in the granting of wells in the unconfined aquifer?

YES

1. The recharge of the unconfined aquifer comes primarily from application of water by surface decree holders.
2. Granting of well permits to persons who do not irrigate by surface water diversions deplete the aquifer and interfere with sub-irrigation as historically practiced for many years.
3. All of the water, including that in the unconfined aquifer, is already appropriated and further appropriations are injurious to existing water users.
4. In some cases, well permits granted intercept return flow to the surface stream diminishing the water available for delivery to the compact thereby increasing the obligation to senior water rights.
5. If wells are granted indiscriminately to non-surface water irrigators, the water level in the unconfined aquifer is lowered, lessening the pressure differential between the confined and unconfined aquifers and permitting additional leakage from the confined aquifer.

NO

1. Under Colorado Water Law, return flow from surface application of irrigation water reverts to the ownership of the public and the right to divert unappropriated water can not be denied.
2. Sub-irrigation is wasteful of water since the higher water table increases evaporation and non-beneficial consumptive use, renders many thousands of acres of land unusable because of salt deposits, and encourages the growth of phreatophytes.
3. In areas where ground water withdrawal lowers the water table, land can be reclaimed and put back into production benefitting the economy of the San Luis Valley.
4. Water in the unconfined aquifer in areas of extremely shallow water table could be salvaged from evaporation and non-beneficial consumptive use.

STATE ENGINEER'S POSITION

The very nature of this problem is so complex that different areas must be treated in a different way in order to accomplish the intent of the legislature, namely, to maximize the beneficial use of all of the waters of the state and by the same token protect existing water rights. New well permits, other than those granted for alternate points of diversion or changes in point of diversion are not being granted in areas south of the "hydraulic divide" (approximately three miles north of the Rio Grande) since these wells would intercept return flow to the natural stream, diminishing the surface run off at Lobatos Gaging Station to the detriment of prior vested rights. New well permits, except as alternate points of diversion or changes in points of diversion, are not being granted above the periphery of the confining blue clay stratum because this area is considered to be the source of recharge for the confined or artesian aquifer. New well permits are being granted in areas of the closed basin where the lowering of the water table will provide salvage water and not be injurious to a prior vested water right.



DIVISION OF WATER RESOURCES

Department of Natural Resources
300 Columbine Building
1845 Sherman Street
Denver, Colorado 80203

January 8, 1974

TO WHOM IT MAY CONCERN

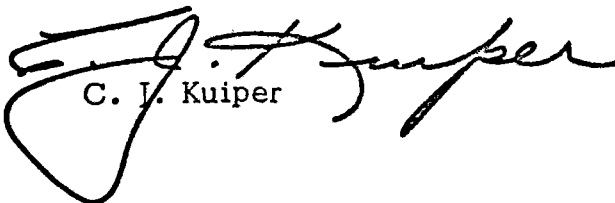
FROM: C. J. Kuiper, State Engineer

SUBJECT: Supplement to Administrative Problems in the San Luis Valley
as outlined by the memorandum of December 4, 1973

Enclosed please find five more issues, numbered 7 through 11,
in addition to those issues outlined by the above referenced memorandum.

These issues will be considered along with the others in the
Administrative Hearings to be held in Carson Auditorium, Adams State College,
Alamosa, Colorado on January 23, 24, 25 and 26, 1974. The Legal Notice on
these hearings is being forwarded to the county newspapers in the affected
areas as of this date.

CJK:grl


C. J. Kuiper

enclosure

ISSUE NO. 7

Is the present formula for distributing return flows above the Lobatos Gaging Station acceptable to water users diverting from the Rio Grande and those diverting from the Conejos River?

YES

1. From the best information available, the formula is satisfactory to the water users in the Conejos River.

NO

1. From the best information available, the formula is not satisfactory to the water users diverting from the Rio Grande.

STATE ENGINEER'S POSITION

The State Engineer's position is to be determined after an administrative hearing on the issue.

ISSUE NO. 8

Should surface streams which are north of the "Hydraulic Divide" be administered in a common priority list with the Rio Grande system?

YES

1. Streams north of the "Hydraulic Divide" generally originate in the encircling mountain areas and are tributary to the confined (artesian) aquifer which is, in turn, tributary to the surface stream system.

NO

1. Although these streams are the sources of recharge to the confined aquifer, the surface water in the stream, if diversions were shut off would flow into the Closed Basin and even to the sump area. Evaporation and non-beneficial consumptive use would waste this water.

2. By permitting diversions and irrigation above the blue clay layer, the recharge to the confined aquifer is increased.

3. Irrigation from the surface stream below the edge of the blue clay is put to a beneficial use whereby permitting it to proceed to the sump area would amount to a waste of water.

STATE ENGINEER'S POSITION

The peripheral streams encircling the Closed Basin north of the "Hydraulic Divide" should not be administered in a single priority system with the surface stream system if it would constitute a waste of water. Each individual stream should be analyzed individually to ascertain whether or not such administration with the surface stream system of the Rio Grande would constitute waste or non-beneficial use of water.

ISSUE NO. 11

Should we have a priority tabulation common to the entire San Luis Valley with tabulations for individual streams and districts available on request and for purposes of administration?

YES

1. Section 148-21-27(1)(a), Colorado Revised Statutes 1963, as amended, requires a tabulation of water rights in order of seniority of all water rights in the water division.

2. This subsection also requires separate priority lists for all water rights which take water from a common source and are in a position to affect one another.

NO

1. A division-wide tabulation of priorities is misleading since water administration would not be handled according to this priority list.

2. Any tabulation of water rights in order of seniority, as presently constituted, are misleading in that the priority number does not coincide with the priority number which is shown on the court decree.

STATE ENGINEER'S POSITION

In order to comply with the statutory requirements, a tabulation of water rights in the entire division is necessary as well as separate priority lists for all water rights in a common source and in a position to affect one another. Decreed water rights have been recorded in the Water Data Bank with adequate programming to obtain a list of water rights according to priority by districts, geographical locations such as townships, tributary streams or any combination. When the final determination is made on operating criteria for the San Luis Valley as a result of hearings on this and other issues, separate priority lists to administer water rights which affect each other will be available. Ample opportunity for protesting the final tabulation, including abandonments, is provided in Section 148-21-28, CRS 1963, as amended. This section provides for written protests to the Water Clerk and with the Division Engineer not later than November 30, 1974.