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Governor



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State Engineer

DIVISION OF WATER RESOURCES

DEPARTMENT OF NATURAL RESOURCES

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December 10, 1974

Mr. C. J. Kuiper, State Engineer
Division of Water Resources
300 Columbine Building
1845 Sherman Street
Denver, Colorado 80203

Dear Mr. Kuiper:

Please find submitted herewith the 1974 Annual Report for Irrigation Division No. 1, headquartered at Room 208, 8th and 8th Office Building, Greeley, Colorado 80631.

On behalf of the staff of Division 1, I would like to express our appreciation for the cooperation, guidance and courtesies extended by yourself and the members of your staff over the past year.

Sincerely,

W. G. Wilkinson
Division Engineer

dw

ANNUAL REPORT
DIVISION NO. 1
1974 IRRIGATION YEAR
NOV. 1, 1973 - OCT. 31, 1974

BY

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1974 ANNUAL REPORT

I. INTRODUCTORY STATEMENT

Division 1 covers an area of some 28,068 square miles or approximately the northeast one-fourth of the State of Colorado. Of this, approximately 19,500 square miles is in the South Platte River Basin, 8,165 square miles in the Republican River Basin, and 403 square miles in the Laramie River Basin.

SOUTH PLATTE RIVER

The South Platte River starts at the Continental Divide, flows through South Park, down mountain canyons, out onto the plains in the Denver area, thence northeasterly and into Nebraska near the northeast corner of Colorado. The flow of the South Platte is augmented by a number of tributaries in the South Park area, the principal ones being the Middle and North Forks of the South Platte and Tarryall Creek. After leaving the mountains the South Platte is further augmented by several major tributaries arising at and east of the Continental Divide and flowing to the South Platte from the north and west. These major tributaries entering the South Platte in the Denver to Greeley area are Bear, Clear, Boulder and St. Vrain Creeks, and the Big Thompson and Cache la Poudre Rivers. Only normally minor and intermittent streams supplement the river flow from the south and east. However some of these, such as Plum, Cherry, Boxelder, Kiowa, Bijou, Badger, Beaver as well as Lone Tree, Coal, Wild Cat and Pawnee Creeks from the north and west are each capable of producing a major flood due to the extent and topography of their individual watersheds when subjected to intense precipitation.

In addition to the obvious tributary streams, the South Platte River is further supplemented very extensively, as are the tributaries themselves, by what is commonly referred to as return flow. This is water from springs, waste ditches, drains, seepage, etc., resulting generally from diversions for various uses, precipitation, and high water tables. These additional sources enter the streams in relatively small amounts at extremely numerous locations along the entire reaches of the streams.

The water supply is further supplemented by a number of diversions from transmountain sources. The water from these transmountain sources is controlled and used by specific ownership entities and, as such, the first use of it is not subject to appropriation as a part of the waters of the South Platte Basin. These transmountain diversions are treated in more detail later in this report.

The elevations in the South Platte Basin vary from 14,000 feet at points along the Continental Divide to 3,400 feet at the Colorado-Nebraska line. The western one-third of the basin is mountainous in character and provides the principal source of water as the result of precipitation.

Of the 12,481,000 acres in the South Platte Basin, 8,694,000 acres are in farms and ranches. The balance of the area is owned by federal and state governments, public agencies, or included within municipalities. Within the farm areas are 852,000 irrigated acres and 7,842,000 acres of dry land according to the 1964 Agricultural Census.

The principal use of water in the mountain valleys is for meadow irrigation. Large volumes of water are released on meadows adjacent to the streams and, of this volume, a major proportion returns to the stream for reuse at lower elevations. The largest area of mountain valley irrigation is in South Park at elevations up to 11,000 feet. Other uses in the mountain areas include those of small municipalities, domestic, stock, power, mining, commercial and recreation needs.

The greatest use of water, by far, in the South Platte Basin is for agricultural purposes in the plains area at elevations between 3,500 and 5,000 feet. The water here supports a well developed, diversified agricultural economy that ranks high nationally in productivity. Much of the demand for water in areas downstream some 40-50 miles from the mountains is supplied from wells and by return flow from uses further upstream.

The 1974 irrigation season was most interesting from an administrative standpoint. While most of the problems were variations or consequences of the perennial difficulties associated with water supply and distribution, each problem in itself took on a significance to those involved which had to be dealt with on a day to day basis.

Undoubtedly the most challenging situation confronting the division staff was occasioned by the order of the Water Court, effective March 16, 1974. This order was the culmination of several years of legislative activity and court litigation involving administration of surface and underground water supplies for a variety of uses with the eventual agreement by all parties involved in a stipulation acceptable to the court*. With the issuance of the court order it was necessary to bring wells under regulation. Staff personnel, principally water commissioners and deputies, were very active in contacting well owners and operators, advising them of the requirements upon them and helping them either program their well diversions or operate under an augmentation plan in order that they could comply with the court approved rules and regulations. No written orders were issued by the division engineer until after he had received a written demand for delivery of water to senior surface rights which were not filled at that time. This first occurred on July 10. Replacement water was ordered into and delivered to the stream in compliance with several augmentation plans. At the same time any well owner who was found in violation and refused to comply was issued a written order. Three well owners who controlled a total of 24 wells refused to honor the orders and were cited into Water Court as a result of complaints seeking injunctive relief instituted by the division engineer through the office of the attorney general. All of the violators either joined in a group augmentation plan or presented their own plan to the court for consideration before hearing thus avoiding the pending court action.

Replacements in varying amounts were made to the surface streams for the balance of July through August and the first week of September. The maximum rate of replacement at any one time was 99.3 cfs. While this was considerably less than the actual depletion caused by the wells or even the five percent of the depletion as mentioned in the rules and regulations it was sufficient to satisfy the immediate needs of those senior rights making

*The court order is discussed in greater detail in Section V (B) of this report. (W-7209, W-7232, W-7242, W-7249, W-7289, W-7290, W-7295, W-7296 and W-7298)

valid calls. This fact served to confirm the past belief of many administrative officials that replacements of this general magnitude would prove to be sufficient in most cases. Undoubtedly different conditions will result in different requirements in future years.

In reviewing the water supply in 1974 for the South Platte River Basin, several interesting facts are worthy of note.

A good carryover of reservoir storage from the 1973 season coupled with a near normal snowpack allowed most of the reservoirs to be filled early in the spring. However the whole year was noteworthy in regard to precipitation. From January through September precipitation was approximately 60 percent of average. South Park was particularly hard hit in that the snow pack, spring and summer moisture were all deficient. The farming areas in the rest of the division were also very dry through the spring and considerable difficulty was experienced in getting the soil in shape and later in getting the crops germinated and growing. A disproportionate amount of the reservoir storage was depleted in that effort.

Providentially, a general rain starting on June 8 brought the desired relief. This was the only good precipitation all summer and had man been able to schedule the time, intensity and duration of the rain it is unlikely that he could have done any better. The ground was soaked, soil conditions improved, reservoirs refilled and, as an added benefit, tensions relaxed.

The water supply situation was further benefitted in that period by alternating warm and cool periods which extended the snow melt, thereby allowing almost full use of the resulting stream flows within the state.

Following the aforementioned spring runoff and June 8 precipitation the weather turned hot and crops flourished. Although stream flows fell and the balance of the season was abnormally dry, through the judicious use of reservoir water, wells pumping under augmentation plans and good management by the farmers the overall agricultural production in the division was probably the best of record. High yields and good prices made it an excellent year for the crop farmer generally.

The economic picture for all of agriculture was not so bright however. Livestockmen have suffered disastrous losses since the fall of 1973 as a result of high feed costs and declining markets. The situation continues to be out of balance and most serious at the end of 1974 with no immediate relief in sight.

REPUBLICAN RIVER

The Republican River Basin in Eastern Colorado covers 5,226,000 acres. Of this area 4,690,000 acres are in farm and ranch land with 86,000 acres under irrigation and 4,604,000 acres of dry land as reported in the 1964 Agricultural Census.

This area is relatively dry and the surface streams, many of which are intermittent, provide only enough water for some lands adjacent thereto. The normal precipitation in this area is about 17.1 inches of which 13.6 inches or 80 percent falls during the April through September period.

Precipitation in the Republican River drainages for 1974 was well below normal for the year but the moisture received was exceptionally well timed. A snow in April revived a wheat crop which had been practically given up as lost and the June 8 rain fell at the time the wheat was filling. As a consequence the dryland wheat, which earlier had appeared to be a failure, produced a bumper crop with yields running up into the 50 bushel per acre category.

Irrigated land production was also exceptionally good. Since the principal source of water in this high plains area is from wells in designated ground water basins which are not subject to the regulations in the South Platte tributary areas, an adequate supply was available upon demand. Favorable temperatures coupled with the water applied boosted yields as they did in the South Platte irrigated lands.

Irrigated land values continue to climb particularly where the source is ground water. Generally speaking \$1000 per acre for land under sprinklers is considered a fair price.

High production has also pushed up the price on dry wheat land.

LARAMIE RIVER

The Laramie River Basin in North Central Colorado contains 258,000 acres of which 4,800 acres are irrigated and 15,000 acres are nonirrigated ranch land according to the 1964 Agricultural Census.

This basin is a mountain valley with the principal water use being for meadow irrigation and livestock purposes. There are no municipalities or villages in this basin so the domestic uses are minimal.

The Laramie River Basin had adequate water for irrigation this season to satisfy the allotments under the Laramie River Agreement and Federal Court order. The said court order provides that 19,875 acre feet of Laramie River water or its tributaries in Colorado may be annually diverted for use outside of the Laramie River Basin and that an additional 29,500 acre feet may be annually diverted for irrigation use within the Laramie River drainage with not more than 1,800 acre feet of such amount to be used after July 31 of each year. The Laramie River Agreement between the users of water in Colorado, being the meadowland users and the transmountain divertors, further provides for volumetric allotments to designated lands within the basin. This amounts to 6.0887 acre feet per acre for the season of which only 0.3715 acre feet may be diverted after July 31. The 1974 meadowland diversions were 22,558 acre feet and transbasin diversions to Water District No. 3 were 19,841 acre feet.

Practically all irrigation on the Laramie River is on native hay. A very good crop of high quality hay has been reported.

The Laramie River Basin is becoming increasingly popular as a recreation area, particularly as related to fishing. Some changes of ownership to recreation interests have occurred and more are anticipated although the water use is expected to remain quite stable. The changes in ownership appear to be more concerned with control of fishing rights and public access now than in the past. Some plans are being made for subdivision development with wells as the source of domestic water. Because of the terms of the Laramie River Agreement some doubt exists as to the propriety of using either surface or underground water for municipal type use.

II. PERSONNEL

There have been several changes in the division staff this year. We have three new faces in the Greeley Office, Harold, Howard and Babette. Harold Coffey transferred here from the Durango Office to fill our chief hydro vacancy. This vacancy was created when Ray Liesman was transferred to an Assistant Division Engineer slot. Howard Law joined us in November 1974 as a 1042 Water Commissioner to fill the vacancy left by the resignation of Ben Saunders. Babette Harman joined us in September as our intermediate clerk typist to fill the vacancy left by Becky Holloway's resignation.

Tom Platt retired on June 30th after 43 years as water commissioner in District 6. His deputy, Ernie Ward, was promoted to water commissioner. Dale Anderson was hired as Ernie's deputy.

Terry Covelli came to work as a deputy for Bob Samples in March of this year after Quinto Brunelli's resignation.

Ron Roberts resigned in May and was replaced by Jack Canterbury as deputy water commissioner in District 23.

Randy Seaholm went to work for us as a hydro in the Denver Office on Friday, November 22, 1974. During the year we also had three other fellows in Denver briefly. Bob Kragel and Dave DeYoung were transferred to Alamosa and Pueblo after short training periods. Dennis Adams worked for about five weeks and then resigned.

PERSONNEL

NAME	WATER DISTRICT	CLASSIFICATION	OCT. 31, 1974	POSITION	GRADE	STEP	DATE OF LAST CHANGE	MONTHS 1973 - '74		MILEAGE	STATE
								WORKED	BUDGETED		
										PERSONAL STATE VEH.	VEH. NO.
Dugan Wilkinson		WRE IV	60	7	7-	'73		12		19,084	4227
Jim Clark		WRE III	56	6	10-	'70		12	642		
Ray Liesman		WRE II	51	4	7-	'73		12			
Don Brazelton		WC II (1042)	35	3	9-	'74		12		8,848	5077
Dorothy Wankelman		Sr. Ck. Steno.	22	5	3-	'74		12			
Bev Thomas		Int. Ck. Typist						4			
Becky Holloway		Int. Ck. Typist						5			
Babette Harman		Int. Ck. Typist	15	4	11-	'74		2			
Bob Samples	1	WC IV	39	6	4-	'72		12		24,233	4578
Paul Meehl	2	WC III	39	7	1-	'74		12	14,110		
Jack Neutze	3	WC III	39	6	7-	'74		12	2,134		
Lloyd Blewitt	4	WC III	39	7	12-	'73		12	9,840		
Stix Palmer	5	WC II	35	6	12-	'69		12	10,843		
Tom Platt	6	WC II						8	7,535		
Arlyn Davison	7	WC II	35	6	1-	'70		12	10,748		
Joe Clayton	8	WC III	39	7	11-	'71		12	15,322		
Ralph VanGorden	9	WC I	31	7	7-	'70		12	12,263		
Wes Hayman	23	WC I	31	5	6-	'74		12	19,255		
Bill Gleason	48	WC I	31	7	10-	'69		4 1/2	5,042		
Jack Fisher	49-65	WC I	31	4	11-	'71		2 1/2	4,988		
Bob Littler	64	WC III	39	7	7-	'70		12	17,865		
Terry Covelli	1	DWC	25	1	4-	'74		7	15,938		
Quinto Brunelli	1	DWC									
Tony Heit	2	DWC	25	6	7-	'70		8	10,794		
Bruce Smith	3	DWC	25	2	7-	'74		7 1/2	4,824		
Wayne Lee	4	DWC	25	3	8-	'74		7 1/2	6,157		
Larry Young	5	DWC	25	5	7-	'74		7	3,971		
Ernie Ward	6	DWC						3			
Ernie Ward	6	S						1			
Ernie Ward	6	WC II	35	7				4	13,133		
John Noonon	8	DWC						5	3,277		
Bill Stewart	8	DWC						2	2,448		

NAME	WATER DISTRICT	CLASSIFICATION OCT. 31, 1974	DATE OF LAST CHANGE	MONTHS 1973 - '74		MILEAGE	STATE						
				WORKED	BUDGETED			PERSONAL STATE	VEH. NO.				
		POSITION	GRADE	STEP	DATE	STEP	CHANGE						
Jack Canterbury	23	DWC	25	1	6- '74	7	6,817						
Dick Vannorsdel	48	DWC	25	2	8- '73	3	1,597						
Ted Bell		WRE I	45	5	7- '74	12	13,135	3638					
Bob Cooper		WRE I	45	2	1- '74	12	14,188	4483					
Harold Coffer		WRE II	51	2	7- '74	9	8,340	205					
Ahmad Andesha		WRE I	45	5	7- '74	12	13,120	4637					
Doug Walcher		WRE I	45	2	7- '74	12	10,630	5003					
George Sievers		Engr. Tech.	27	1		3							
Ben Saunders		WC I				6							
Dale Anderson		DWC	25	1	6- '74	7	7,028						
Bud Walcher													
Jerome A. Mallon, Jr.		Engr. Tech.	27	1		3							
Richard Saterdol		Engr. Tech.	27	1									

III. WATER SUPPLY

A. SNOW PACK

Snow pack in the South Platte Drainage area was slightly above normal the 1st of April, except in the South Park area where it was 90 percent of average. Boulder Creek Drainage was best at 114 percent of the 15 year average. Soil moisture ranged from 86 percent of average on Boulder Creek to 114 percent on the Cache la Poudre. Carry-over storage in the area reservoirs was above average.

Heavy snowfall occurred in the headwaters of most South Platte tributaries during April resulting in the following soil moisture and snow water figures:

1974

SUMMARY OF SNOW MEASUREMENTS (MAY 1ST)

WATERSHED	NO. OF COURSES AVERAGED	THIS YEAR'S SNOW WATER AS PERCENTAGE OF:	
		LAST YEAR	AVERAGE+
Big Thompson	4	102	107
Boulder	3	98	125
Cache la Poudre	8	84	127
Clear Creek	6	125	130
Saint Vrain	3	64	90
South Platte	3	86	93

SOIL MOISTURE (MAY 1ST)

WATERSHED	NO. OF STATIONS	THIS YEAR'S MOISTURE AS PERCENTAGE OF:	
		LAST YEAR	AVERAGE+
Big Thompson	3	113	90
Boulder	1	63	72
Cache la Poudre	2	120	90
Clear Creek	2	97	93
Saint Vrain	3	113	90
South Platte	2	96	84

+ 1958-1972

III. WATER SUPPLY

B. PRECIPITATION

STATION	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		% AVERAGE FOR WATER YEAR 10-1 to 9-30
	PRECIP.	% OF AVERAGE PRECIP.	PRECIP.	% OF AVERAGE PRECIP.	PRECIP.	% OF AVERAGE PRECIP.	PRECIP.	% OF AVERAGE PRECIP.	PRECIP.	% OF AVERAGE PRECIP.	PRECIP.	% OF AVERAGE PRECIP.	
BOULDER	3.07	173	T	0	2.08	84	0.51	26					
CHEESMAN	2.46	184	0.15	9	1.55	105	3.30	119	0.61	25	0.57	35	92
CHEYENNE WELLS	0.44	49	1.00	34	2.38	98	0.52	15	1.75	84			
DENVER AP WSFD	2.28	133	0.06	3	2.01	99	2.34	133	0.16	14	0.98	61	98
ESTES PARK	1.68	133	0.34	18	1.42	67	2.63	132	0.27	13	1.30	84	87
FT. COLLINS	1.65	97	0.01	0	3.01	154	1.65	108	0.12	10			
FT. MORGAN	0.81	75	0.26	11	1.36	60	3.04	185	0.63	53	0.20	16	82
GREELEY	2.77	210	0.10	5	3.33	157	0.43	31	1.37	118			
KASSLER	1.87	96	0.24	9	1.86	93	0.83	52	0.33	25	1.38	77	78
LAKWOOD	1.31	80	0.20	9	2.32	124	1.07	68	0.23	21	1.33	80	83
LONGMONT	2.87	191	0.08	4	2.94	137	1.21	111	0.54	57			
PARKER	1.38	123	T	0	2.34	106	2.03	119	1.03	62	0.43	31	76
RED FEATHER LAKE	1.92	105	T	0	3.60	164	1.59	78					
STERLING	0.27	24	0.29	9	2.42	88	1.05	38	1.52	89	0.18	14	75
WRAY	2.21	205	0.98	33	4.28	111	1.51	53	0.59	25	0.05	3	80

*AVERAGES ARE FOR THE 15 YEAR PERIOD 1958-1972 AND ARE COMPUTED BY THE KANSAS CITY RIVER FORECAST CENTER.

III.

D. GENERAL

A water budget is herewith submitted for the 1973 irrigation year. Due to the number of variables involved and the unavailability of complete and accurate data, the figures herein shown are, in many instances, estimates or approximations at best. Figures are omitted if there is no reasonable basis for making an estimate.

WATER BUDGET

DIST.	INFLOW INTO DISTRICT	YIELD OF DRAINAGE AREA	TOTAL SUPPLY	IRRIGATION DIVERSIONS	ESTIMATED DEPLETION BY IRRIGATION	MUNICIPAL DIVERSIONS	ESTIMATED DEPLETION BY MUNICIPALITIES	OTHER DIVERSIONS	ESTIMATED OTHER DEPLETIONS	RUNOFF @ STATELINE OR MOUTH
1	1626000	275000	1901000	243411						1085000
2	1326700	723128	2047875	341701	141300	4385	2190	17675	1000	1626000
3	179566	541083	720649	388075	268600	31050	21420	2449	200	162300
4	230700	192958	423658	200056	152487	7891	6000			224249
5	153698	257903	411601	137056	64890	10650	4565			233500
6	46641	269317	315958	98923	29023	65009	53435			116750
7	839	264537	265376	86414	59664	17723	8684	13000	5200	115000
8-80	565060	225000	790060	92496	46250	174628	51810	46181	5000	590800
9	0	113442	113442	14648	7600	2634	1050	520	50	96160
23	12190	180000	192190	132224	43270					223905
48				39845	27150					
49				3044	1520					
64	1229658	195042	1424700	170297	98250					1149000
65				3949	1975					

DIVERSIONS USED FOR BUDGET PURPOSES INCLUDE:

- 1) Diversions from Stream Sources
- 2) Diversions from TM Sources
- 3) Diversions from Storage Sources
- 4) Diversions from Project Sources
- 5) Releases from in system facilities

III.

C. FLOODS (CONTINUED)

Seldom do adverse conditions exist from which some beneficial circumstances are not experienced. The past year was abnormally low in precipitation and consequently the possibility of flooding was correspondingly minimized. No flooding of a serious nature occurred during the 1974 irrigation year.

The following tabulation shows the annual flows in acre feet at the major control gaging stations in the Division and the highest daily flow during that period. Note that some of the flows are for the Water Year, October 1 - September 30, and others are for the Irrigation Year, November 1 - October 31. Most figures are preliminary reports and subject to revision.

STATION	WATER YEAR		IRRIGATION YEAR	INSTANTANEOUS	
	OCT. 1, 1973 to OCT. 1, 1974	OCT. 1, 1974		NOV. 1, 1973 to NOV. 1, 1974	PEAK FLOWS
South Platte below Cheesman	91,910			May 17	484
North Fork at South Platte	148,100			May 10	605
South Platte at South Platte	263,900			May 17	905
Bear Creek at Morrison	29,130			May 10	171
Bear Creek at Sheridan	31,100			June 8	349
South Platte at Denver	201,100			June 8	3390
Clear Creek at Golden	157,300			June 19	1360
Clear Creek at Derby	64,030			June 8	1280
South Platte at Henderson	390,400			June 8	7600
Middle Boulder Creek at Orodell				May 30	475
South Boulder Creek at Eldorado	50,790			May 4	28
Coal Creek at Plainview	2,300			June 18	641
St. Vrain Creek at Lyons	69,340			June 9	1810
St. Vrain Creek at Platteville	139,300		139,900	July 13	660
Big Thompson at Canyon	107,180		107,390	June 9	663
Big Thompson at LaSalle	76,330		74,720	June 17	2940
Cache la Poudre at Canyon	268,200		270,300	June 9	1870
Cache la Poudre at Greeley	126,750		125,000	June 9	8120
South Platte at Kersey	695,500		659,400	June 11	3880
South Platte at Balzac	417,500		362,000	January 24	2060
South Platte at Julesburg	466,000		388,000		

III.

E. UNDERGROUND WATER

Considerable progress was made this past year in bringing the use of water from underground sources under administration in a manner that implemented the conjunctive use of ground and surface supplies. With the adoption of the Rules and Regulations Governing the Use of Underground Water in the South Platte River and its Tributaries* by the Water Court, the majority of well owners realized that they had a responsibility to the surface streams. They took action to provide the necessary relief to senior water rights thereby allowing the wells to continue pumping. Generally speaking three courses of action were open to the well owners. They could join in some available group augmentation plan, propose an individual plan of their own or comply with the limitations set forth in the rules and regulations which allowed pumping on Mondays and Tuesdays without restriction in 1974.

Most well owners chose to belong to a group augmentation plan under which they could pump without restriction after paying a modest assessment. The most popular augmentation group was GASP, Ground Water Appropriators of the South Platte. That organization was formed in 1972 in anticipation of well regulation and has attracted membership of irrigation, municipal, commercial and industrial wells throughout the plains areas of the South Platte and its tributaries. Membership is voluntary and assessments are based upon the anticipated volume of pumping for the season. The required replacements to the surface system are from varied sources. Six wells in the Sterling area provide the major source for GASP and are themselves subject to the same rules and regulations requiring replacement of depletion when necessary. Fortunately, as a result of location, the major volume of depletion on these six wells occurs during the off irrigation season when there are no demands on the stream. Other sources of Gasp replacement are leased reservoir and CBT rights and groundwater recharge projects. Current membership in Gasp is 2,907 wells.

The second largest augmentation plan operated in 1974 was that of the Ground Water Subdistrict of the Central Colorado Water Conservancy District. This Subdistrict was established by the District Court under the Conservancy District Act with defined legal boundaries. Membership of wells within the subdistrict is mandatory and assessments against the wells on the basis of pumping capacity are levied and collected by the counties in which they are located. The so called Central Subdistrict encompassed 1,105 member wells in 1974. The major sources of their replacement water were Union Reservoir and CBT. Some replacement was also made from releases of the Lower Clear Creek and Platte River Ditch.

The Larimer County Underground Water Users Association formed a group of voluntary membership for an augmentation plan after being active for several

years in matters of legislation and litigation involving wells. Assessments for the some 213 member wells were based upon a combination of pumping capacity and annual pumping volumes. They relied upon leased CBT water for their required replacement in 1974.

Several individual organizations proposed separate augmentation plans which provided for replacement water from sources owned or controlled by them. These included the Bijou Irrigation Company, Monfort of Colorado, Sakata Farms of Brighton, Public Service of Colorado and Colorado State University.

Due to the complex nature of most of the augmentation plans previously mentioned, formal acceptance by the State and Division Engineers had not been made at the time replacement water was required. In spite of the fact that agreement on the details or necessary corrections had not been made, there was a general willingness to proceed with the necessary replacements to meet the immediate problems and continue on such an interim basis until the plans could be agreeably finalized.

The replacement water released into the system by the various augmentation plans at the time of demand in 1974 was as follows:

GASP	5383 A.F.	Monfort	155 A.F.
Central	1908	Public Service	100
Lar. Co.	694	Sakata	13
Bijou	566	C.S.U.	11

TOTAL 8830 A.F.

A number of individual operating plans were approved by the Division Engineer. These plans were generally variations in the pumping periods as provided in the Rules and Regulations. Since the 48 hours of pumping on Monday and Tuesday of each week did not fit the needs of some operators, other schedules were worked out allowing a total of 48 hours per week to achieve optimum use of the wells within the limits contemplated by the regulations.

The Division I administrative staff takes this means of acknowledging the efforts and cooperation of all those well owners or operators who have, through their participation in augmentation or approved operating plans, recognized their responsibilities as water users by complying with the laws even though most of them have strong reservations as to the equity of such laws. More especially, appreciation is extended to those individuals who served as leaders and on boards of directors, giving of their time and efforts to develop plans for integrated use of ground and surface supplies thereby preserving the agricultural economy of the region.

Drilling of new wells into the tributary aquifers has been largely confined to those defined as exempt wells. The largest number of permits have been issued for in-house use only wells. Owners of lots in subdivisions which have been approved by the various county commissions prior to May 8, 1972 are ordinarily eligible for an in-house use well on that tract. Domestic well permits are issued for tracts of 35 acres or more on which that would be the only well.

Several applications for approval of Augmentation Plans involving the construction of in-house or domestic wells have been adjudicated by the Water Court with orders to the State Engineer to issue the necessary permits.

Permits were usually granted for the drilling of replacement wells in those situations where the original well had failed in some manner. Limitations are imposed on replacement wells in regard to their location, production, and abandonment of the replaced structure.

New permits have been granted for irrigation wells in the designated ground water basins when they comply with the established guidelines for the particular area. Naturally, the physical opportunities for such compliance are reduced with the issuance of each new permit.

The drilling of wells which tap the deep, so called nontributary formations came under more restrictive regulation with the legislative adoption of criteria for such ground water removal. Under the statute, a permit limits the withdrawal to a rate capable of extracting the known supply under the surface property of the owner over a one hundred year period.

III. WATER SUPPLY

F.

TRANSMOUNTAIN DIVERSION

OCTOBER 1, 1973 - SEPTEMBER

DIVERTING STRUCTURE	SOURCE	SOURCE DISTRICT	RECEIVING DISTRICT	CONTROLLING (
Wilson Supply Ditch	Sand & Deadman Creek	48	3	Divide Canal &
Deadman Ditch (Incl. in Wilson Supply)	Deadman Creek	48	3	Divide Canal &
Bob Creek Ditch	Nunn Creek	48	3	City of Greele
Columbine Ditch	Deadman Creek	48	3	City of Greele
Laramie Poudre Tunnel	Laramie River	48	3	Water Supply &
Skyline Ditch	West Fork Laramie River	48	3	Water Supply &
Cameron Pass Ditch	Michigan River	47	3	Water Supply &
Michigan Ditch	Michigan River	47	3	North Poudre I
Grand River Ditch	Colorado River	51	3	Water Supply &
Eureka	Colorado River	51	4	City of Lovela
Alva B. Adams Tunnel	Colorado River	51	4	U.S.B.R.-N.C.C
Moffat Tunnel	Fraser River	51	6	City of Denver
Jones Pass Tunnel	Williams Fork	51	6	City of Denver
AKA August P. Gumlich or Williams Fork Tunnel	(Incl. in Moffat Tunnel)			
Berthoud Pass Ditch	Fraser River	51	7	Farmers Res. &
Vidler Tunnel	Montezuma Creek	36	7	Hebert Young
Roberts Tunnel	Blue River	36	23-8	City of Denver
Boreas Pass Ditch	Indiana Creek	36	23	City of Aurora
Hoosier Pass Tunnel	Blue River	36	23	City of Colo.
Aurora Homestake	Homestake Creek	37	23	City of Aurora

* INCLUDED IN WILSON SUPPLY DITCH

** CORRECTED FOR DEADMAN IN WILSON SUPPLY

III.

F.

HYDROGRAPHIC REPORT
DIVISION ONE
1974

GENERAL

In addition to the normal functions of discharge measurement and record processing, a considerable part of the hydrographic effort was devoted to maintenance and repair and to the installation of new stations and equipment. A good part of the new station installations were required because of flood damage during the 1973 Water Year. Some repair work was required because of vandalism.

New stations were installed on the South Platte River near Fort Lupton and South Platte River near Kersey to replace stations destroyed in the 1973 flood. These are both equipped with bubbler gages, as is the new station installed at Clear Creek near Golden. A new station has also been installed at Clear Creek at Derby to provide more space for Weather Bureau equipment. The station at Big Thompson River at Mouth has been provided with a new lower section because of failure of the wooden well from age.

Four stations have recently been equipped with digital recorders and telemarks for use by the Weather Bureau. More of these are being made or are planned for the near future.

STREAM FLOW

Stream flow information for key stations throughout the Division is as follows for the 1974 Water Year:

	TOTAL FLOW AC.-FT.	INSTANTANEOUS PEAK FLOW CFS	MAXIMUM DAILY FLOWS CFS
CACHE LA POUUDRE AT CANYON MOUTH	270,300	2940	2580
BIG THOMPSON @ CANYON MOUTH	107,180	660	632
ST. VRAIN @ LYONS	69,340	641	566
CLEAR CREEK @ DERBY	64,030	1280	694
BEAR CREEK @ MORRISON	29,130	171	151
SOUTH PLATTE @ SOUTH PLATTE	263,900	905	885
SOUTH PLATTE @ DENVER	201,100	3390	1670
SOUTH PLATTE @ HENDERSON	390,400	7600	3180
SOUTH PLATTE @ KERSEY	695,500	8120	6710
SOUTH PLATTE @ WELDONA	535,700	4360	3780
SOUTH PLATTE @ BALZAC	417,500	3880	2160
SOUTH PLATTE @ JULESBURG	466,000	2060	1970

HYDROGRAPHIC ACTIVITY

STREAM FLOW MEASUREMENTS
1974 WATER YEAR

The following number of measurements were made by Division One Hydrographers:

<u>HYDROGRAPHER</u>	<u>STREAMS</u>	<u>CANALS</u>	<u>TOTAL</u>
Andesha, A. Z.	176	22	198
Adams, D. M.	33	2	35
Bell, T. S.	199	11	210
Coffer, H. R.	65	49	114
Cooper, R. H.	324	25	349
Liesman, R. S.	33	21	54
Walcher, R. D.	<u>299</u>	<u>8</u>	<u>307</u>
	1129	138	1267

These figures include a number of measurements made by summer employees, who contribute significantly to our hydrographic effort. Total hydrographic mileage was 97,450 miles. Measurements or mileage by Glen Brees or Bud Walcher in Division One are not included.

SUPPLEMENTAL HYDROGRAPHIC REPORTS

ANNUAL REPORT
 COLORADO-BIG THOMPSON PROJECT
 1974

This is a cooperative effort between the U.S. Bureau of Reclamation, the Northern Colorado Water Conservancy District and The Division of Water Resources. Water is diverted from the Western Slope through Alva B. Adams Tunnel. Power is generated in a series of five power plants by the Bureau, then the water is distributed to East Slope users by the Conservancy District.

ACTIVE PROJECT STORAGE

<u>Western Slope</u>	<u>Nov. 1, 1973</u>	<u>Nov. 1, 1974</u>	<u>Diff.</u>
Willow Creek	7631	7812	+181
Granby	<u>449640</u>	<u>393385</u>	<u>-56255</u>
Total Acre Feet	<u>457271</u>	<u>401197</u>	<u>-56074</u>
<u>Eastern Slope</u>			
Carter	51367	58007	+6640
Horsetooth	86716	51661	-35055
Boulder	<u>6746</u>	<u>2017</u>	<u>-4729</u>
Total Acre Feet	<u>144829</u>	<u>111685</u>	<u>-33144</u>

DISTRIBUTION OF PROJECT WATER

<u>WATER DISTRICT</u>	<u>CARRIER</u>	<u>TOTAL ACRE FEET</u>
1	Hansen Feeder Canal via Big Thompson	5,262.0
3	Hansen Supply Canal via Cache La Poudre	103,960.7
	Direct Delivery	14,525.3
4	Hansen Feeder Canal via Big Thompson	61,960.8
	St. Vrain Supply via Little Thompson	12,799.8
	Direct Delivery	6,665.0
5	St. Vrain Supply Canal via St. Vrain	25,866.8
	Direct Delivery	16,100.2
6	Boulder Cr. Supply Canal via Boulder Cr.	20,950.4
	Direct Delivery	4,486.3
	Total to all districts, including replacement water.	272,577.3
	Quota water declared available - 100% or 309,477 ac.ft.	
	Replacement water - 2,170.6 ac.ft.	

COMPARISON BETWEEN ORDERED AND ACTUAL DELIVERIES

<u>STREAM</u>	<u>ORDERED</u>	<u>DELIVERED</u>	<u>DIFFERENCE</u>
Cache la Poudre	103,960.7	105,412.0	+1451.3
Big Thompson	67,222.8	*67,687.0	+464.2
Little Thompson	12,799.8	12,933.2	+133.4
St. Vrain Creek	25,866.8	26,267.8	+401.0
Boulder Creek	20,950.4	21,415.2	+464.8
Turnouts	41,776.8	42,042.0	+265.2
	272,577.3	275,757.2	+3179.9

*Deliveries less Big Thompson "Skim", Dille Tunnel diversions during 1974 irrigation season.

PROJECT GAIN AND LOSS

<u>INFLOW</u>	<u>ESTES PARK AREA</u>	<u>TOTAL ACRE FEET</u>
	<u>NOV. 1, 1973 - NOV. 1, 1974</u>	
Alva B. Adams Tunnel	249,560	
Wind River	385	
Big Thompson River	80,360	
Fish Creek	749	
Storage Nov.1, 1973	2,407	333,461

<u>OUTFLOW</u>	<u>NOV. 1, 1973 - NOV. 1, 1974</u>	<u>TOTAL ACRE FEET</u>
Estes Park Water District	190.	
Town of Estes Park	490.	
Estes-Foothills Canal	279,830.	
Big Thompson River	54,670.	
Storage Nov. 1, 1974	<u>2,144.</u>	337,324.

Apparent Gain 3,863 acre feet

CARTER LAKE AREA

<u>INFLOW</u>		
Estes-Foothills Canal	279,830.	
Storage Pinewood, Flatiron	1,980.	
Storage Carter Nov. 1, 1973	51,367.	
Dille Tunnel	<u>19,100.</u>	352,277.

OUTFLOW

Hansen Feeder Canal	87,176.	
Big Thompson River	114,234.	
St. Vrain Supply Canal	79,402.	
Little Thompson Water District	2,919.	
Storage Carter No. 1, 1974	58,007.	
Storage Pinewood, Flatiron	2,086.	
Measured Seeps	<u>1,620.</u>	345,444.

Apparent Loss 6,833 acre feet

HORSETOOTH AREA

<u>INFLOW</u>		
Hansen Feeder Canal	83,955.	
Storage Nov. 1, 1973	87,016.	170,971.

OUTFLOW

Hansen Supply Canal	103,961.	
Direct Delivery	14,525.	
Measured Seeps	950.	
Storage Nov. 1, 1974	43,661.	163,097.

Apparent Loss 7,874 acre feet

BOULDER AREA

<u>INFLOW</u>	<u>NOV. 1, 1973 - NOV. 1, 1974</u>	<u>TOTAL ACRE FEET</u>
Boulder Feeder Canal	24,032.	
Storage Nov. 1, 1973	6,746.	30,778.

OUTFLOW

Boulder Cr. Supply Canal	27,456.	
Dry Cr. Replacement	457.	
Storage Nov. 1, 1974	<u>2,017.</u>	29,910.

Apparent loss 868 acre feet

SUMMATIONS

Estes Park Area	+3,863.
Carter Lake Area	-6,833.
Horsetooth Area	-7,874.
Boulder Area	<u>- 868.</u>

Total Apparent Project Loss 11,712 acre feet

OPERATION SKIM

In conjunction with the Colorado-Big Thompson Project, Operation Skim diverts Big Thompson River water for power generation purposes and returns it to the river. Upper Big Thompson River water is diverted through Estes Foothills Canal into Olympus Tunnel for power generation at Polehill and Flatiron Power Plants. Near the mouth of Big Thompson Canyon river, water is diverted through Dille Tunnel. River water from both diversions is then returned to the river through the Big Thompson Power Plant.

Skim operations were conducted from April 29 to August 21, 1974 as follows:

<u>MONTH</u>	<u>WATER DIVERTED</u> <u>ACRE-FEET</u>
April	331
May	15,550
June	21,840
July	7,700
August	<u>1,820</u>
	47,241

Harold R. Coffey
 Harold R. Coffey
 WATER RESOURCES ENGINEER

III

G. RESERVOIR STORAGE DISTRICT NO. 2

NAME	SOURCE	AMOUNT - A.F.		
		11-1-73	5-1-74	10-31-74
Bar - Oasis	South Platte	20110	25259	12776
Behrns	South Platte	20	35	20
Beulah	South Platte	0	0	4
Bowles No. 1	South Platte	5	0	25
Bowles No. 2	South Platte	45	25	45
Brantner No. 2	Brantner Gulch	11	11	11
Carlin	South Platte	0	0	0
Church Lower Lake	Dry Creek	120	120	120
Coal Ridge (Sandhill)	Little Dry Creek	565	428	547
Fulton Waste	South Platte	262	400	210
German No. 2	Big Dry Creek	72	46	80
German No. 3	Big Dry Creek	2	0	3
German No. 4	Big Dry Creek	30	18	45
German No. 6	Big Dry Creek	12	3	15
German No. 8	Big Dry Creek	54	50	16
German No. 9	Big Dry Creek	18	16	48
German No. 12	Big Dry Creek	88	92	85
Great Western	Clear Creek	2686	2352	2466
H. A. Smith	South Platte	20	40	40
Henry	South Platte	0	0	0
Horse Creek	South Platte	3234	15312	338
Ireland No. 1	South Platte	0	25	118
Ireland No. 5	South Platte	0	0	0
J. B. Smith	Todd Creek	140	150	140
Karsh	Big Dry Creek	3	1	3
La Dore	Seepage	374	346	360
Loloff	South Platte	145	115	90
Lord	South Platte	268	718	91
Lower Latham	South Platte	0	610	4325
Marshall	Brantner Gulch	32	30	30
Mathison	Big Dry Creek	10	1	25
Maul	First Creek	25	33	33
Meek No. 1	South Platte	25	15	25
Meek No. 2	South Platte	5	1	10
Milton	South Platte	3113	17840	13410
Mose Davis Lake No. 2	South Platte	40	40	40
North Starr	Big Dry Creek	110	115	110
Olds	South Platte	0	10	0
Parson-Holms	Second Creek	-	0	0
Prospect	South Platte	2120	4856	1060
Standley - Kinnear	Clear Creek	24617	36191	21403
Thompson	Big Dry Creek	200	200	200
	TOTAL	58581	105504	58367

III.

G RESERVOIR STORAGE DISTRICT NO. 3

NAME	SOURCE	AMOUNT - A.F.		
		11-1-73	5-1-74	10-31-74
Barnes Meadow	Barnes Meadow	1232	1415	1341
Big Beaver	Big Beaver Creek	0	0	0
Black Hollow	Cache la Poudre	4376	4936	4376
Cache la Poudre	Cache la Poudre	6160	8414	4366
Chambers	Wright. Trap & Fall Cks	1991	4324	1832
Clarks Lake	N Fk Cache la Poudre	0	610	642
Claymore	Cache la Poudre	684	649	33
Cobb	Cache la Poudre	19450	19060	17030
Comanche	Big Beaver Creek	172	430	0
Curtis	Cache la Poudre	886	862	898
Douglas	Cache la Poudre	6453	6634	6498
Dowdy	Pine Creek	818	768	827
Fossil Creek	Cache la Poudre	7307	9592	6917
Gray Lakes	Boxelder Creek	383	1034	425
Halligan	N Fk Cache la Poudre	0	6428	750
Horsetooth	Colo. Big Thompson	95723	133837	51073
Indian Creek	N Fk Cache la Poudre	1814	1887	1906
Joe Wright	Joe Wright Creek	0	0	0
Kluser	Cache la Poudre	907	862	827
Larimer & Weld	Cache la Poudre	3883	6420	5725
Lindenmeir	Cache la Poudre	495	543	553
Long Draw	Long Draw	0	0	195
Long Pond	Cache la Poudre	2814	3129	2989
N. Poudre No. 2	N Fk Cache la Poudre	2175	2516	3257
N. Poudre No. 3	N Fk Cache la Poudre	1033	2206	1732
N. Poudre No. 4	N Fk Cache la Poudre	810	1065	800
N. Poudre No. 5	Cache la Poudre	4331	6092	5436
N. Poudre No. 6	Cache la Poudre	5013	5324	6568
N. Poudre No. 15	N Fk Cache la Poudre	4192	5117	4735
N. Poudre Minor Reservoir	N Fk Cache la Poudre and Cache la Poudre	1191	1532	1824
Park Creek	N Fk Cache la Poudre	7063	6670	4800
Peterson	Unnamed Creek	0	60	0
Portner	Fossil Creek	66	81	68
Res. No. 8	Cache la Poudre	8040	7858	7618
Res. No. 8 Annex	Cache la Poudre	2855	2775	2658
Richards	Cache la Poudre	188	651	760
Rocky Ridge	Cache la Poudre	3711	3795	3383
Seaman	N Fk Cache la Poudre	4315	4581	2441
Seeley		961	830	895
Twin Lake	Trib. of Pennock	0	0	0
Warren Lake	Cache la Poudre	1192	966	1591

III.

G. RESERVOIR STORAGE - DISTRICT NO. 3 (Continued)

NAME	SOURCE	AMOUNT - A.F.		
		11-1-73	5-1-74	10-31-74
W S & S No. 3	Cache la Poudre	4140	4140	3802
W S & S No. 4	Cache la Poudre	0	997	820
Windsor Lake	Cache la Poudre	0	652	969
Windsor Reservoir	Cache la Poudre	8852	13735	8920
Wood Lake	Cache la Poudre	1946	2219	1834
Worster	Sheep Creek	91	771	109
	TOTAL	217713	286467	174223

III.

G. RESERVOIR STORAGE DISTRICT NO. 4

NAME	SOURCE	AMOUNT - A.F.		
		11-1-73	5-1-74	10-31-74
Boulder-Larimer (Ish)	Little Thompson	2204	2225	1604
Boyd Lake	Big Thompson	45619	44291	36941
Carter	Colo. Big Thompson	54673	110290	61313
Cemetery	Big Thompson	226	234	350
Donath	Big Thompson	419	1077	469
Fairport	Big Thompson	213	202	141
Geo. Rist (Buckingham)	Big Thompson	350	284	379
Hertha	Dry Creek	559	1398	415
Horseshoe	Big Thompson	4422	1024	3181
Lake Loveland	Big Thompson	11540	12638	12638
Lawn Lake	Roaring Fork	817	817	817
Lone Tree	Big Thompson	8139	7949	2527
Lon Hagler	Big Thompson	5128	5328	5328
Loveland Lake	Big Thompson	1310	1545	1173
Mariano	Big Thompson	2326	5771	4547
Oklahoma	Big Thompson	347	312	282
Rist Benson	Big Thompson	416	351	432
Ryan Gulch	Ryan Gulch	602	788	630
South Side	Big Thompson	411	442	411
Welsh	Big Thompson	6328	6192	5924
	TOTAL	146049	203158	139502

III.

G.

RESERVOIR STORAGE DISTRICT NO. 5

NAME	SOURCE	AMOUNT - A.F.		
		11-1-73	5-1-74	10-31-74
Allen Lake	Left Hand	700	700	700
Akers & Tarr	St. Vrain	162	170	138
Arbucle No. 2	M. Fk. N. St. Vrain	966	966	966
Arbucle No. 4	S. Fk. N. St. Vrain	420	420	420
Ballinger	St. Vrain	10	10	10
Baxter	St. Vrain	182	196	164
Beaver Park	Beaver Creek	1246	535	1008
Bellmire	St. Vrain	27	27	22
Button Rock	N. St. Vrain	12622	11563	12967
Calkins Lake	St. Vrain	136	106	136
Clark	St. Vrain	78	80	73
Clennon	St. Vrain	120	120	87
Clover Basin	St. Vrain	570	570	570
Copeland	N. St. Vrain	20	54	70
Crystal	St. Vrain	136	136	130
Divide	St. Vrain	288	300	260
Foothills	St. Vrain	1650	1650	908
Genevieve	St. Vrain	66	74	59
Gold Lake	Left Hand	160	400	320
Green Lake	Middle St. Vrain	110	120	120
Hartford	St. Vrain	80	87	72
Hewitt	St. Vrain	34	34	30
Highland Lake	St. Vrain	455	455	420
Highland N. 1	St. Vrain	677	654	853
Highland No. 2	St. Vrain	2711	2874	2408
Highland No. 3	St. Vrain	801	1027	1324
Hill	St. Vrain	110	110	130
Holt	St. Vrain	148	148	150
Ide & Starbird No. 1	St. Vrain	112	112	111
Ide & Starbird No. 2	St. Vrain	56	51	60
Independent	St. Vrain	160	164	158
Isabelle	S. Fk. St. Vrain	594	594	470
Kistler & Holliday	St. Vrain	5	5	5
Left Hand	Left Hand	184	190	172
Left Hand Park	Left Hand	1648	1648	1403
Left Hand Valley	Left Hand	1772	3783	2775
Little Gem	St. Vrain	62	68	76
Logan	St. Vrain	26	28	17
Marie	St. Vrain	400	402	370
Marshall	St. Vrain	24	24	24
McCall	St. Vrain	196	506	506
McCaslin	St. Vrain	119	119	107
McIntosh	St. Vrain	1281	2329	2202

III.

G. RESERVOIR STORAGE DISTRICT NO. 5 (CONTINUED)

NAME	SOURCE	AMOUNT - A.F.		
		11-1-73	5-1-74	10-31-74
McKay	St. Vrain	46	50	41
Miantenoma	St. Vrain	130	139	116
Minnie	St. Vrain	54	70	64
Moeller	Walker Gulch	48	50	29
Mulligan	St. Vrain	46	51	44
Myron Isabell	St. Vrain	60	76	62
Oligarchy No. 1	St. Vrain	1452	1737	1621
Parmalee	St. Vrain	40	40	36
Pleasant Valley	St. Vrain	2428	2428	2491
Sanborn	St. Vrain	200	214	177
Silinde	St. Vrain	80	88	76
Supply No. 1	Big Cascade	296	296	110
Swede	Left Hand	198	207	200
Thomas	St. Vrain	545	545	445
Union	St. Vrain	12715	12715	11408
Walker	St. Vrain	73	77	69
Zimbeck	St. Vrain	56	62	55
	TOTAL	49791	42454	50015

III.

G.

RESERVOIR STORAGE DISTRICT NO. 6

NAME	SOURCE	AMOUNT - A.F.		
		11-1-73	5-1-74	10-31-74
Albion	Albion Creek	1111	1111	1111
* Ballinger Hollow		150	150	150
Barker	M. Boulder Creek	9808	4072	9700
Baseline	S. & M. Boulder Creek	3271	5380	3505
Boulder	Big Thompson Project	8046	9218	3317
Davis No. 1 & 2	Middle Boulder Ck	96	218	146
* Elmwood	South Boulder Ck	20	0	40
* Erie	South Boulder Ck	128	52	90
Glacier Summer	North Boulder Ck	228	228	228
Great Western	Clear & Coal Cks	2661	2571	2387
Green Lake No. 1	North Boulder Ck	105	105	105
Green Lake No. 2	North Boulder Ck	332	332	332
Green Lake No. 3	North Boulder Ck	285	285	285
* Green Lake No. 4	North Boulder Ck	88	88	88
* Green Lake No. 5	North Boulder Ck	70	70	70
Goose Lake	North Boulder Ck	1036	1036	1036
Gross	S. Boulder Ck & Moffat	30308	26135	2525
Haden	Middle Boulder Ck	376	406	182
Hillcrest	S. Bldr Ck & M Bldr	1937	1860	1947
Island	North Boulder Ck	333	333	333
* Jasper	Middle Boulder Ck	0	326	0
Leggett	S & M Boulder Creeks	1399	1341	1406
Louisville	South Boulder Creek	103	103	103
Lower Boulder Ext.	Middle Boulder Ck	372	124	287
* Marfell Lake No. 1	South Boulder Ck	10	0	10
* Marfell Lake No. 2	South Boulder Ck	0	0	12
Marshall	South Boulder Ck	4408	9365	4662
McKay	South Boulder Ck	304	441	304
* Mesa	Middle Boulder Ck	95	95	95
* Mesa Park	Middle Boulder Ck	225	150	150
Panama No. 1	Middle Boulder Creek	3426	4790	4265
* Prince No. 1	South Boulder Creek	80	20	40
* Prince No. 2	South Boulder Creek	83	60	60
Silver Lake	North Boulder Creek	3577	974	3527
Six Mile	Middle Boulder Creek	745	1088	976
Sky Scraper	Middle Boulder Creek	146	146	146
Smart	Coal Creek	589	745	567
* Teller Lake No. 1	South Boulder Creek	35	35	20
* Teller Lake No. 5	South Boulder Creek	4	8	8
* Thomas	South Boulder Creek	10	0	0
Valmont	S & M Boulder Creeks	6807	6627	6831
* Waneka	South Boulder Creek	350	240	350
West Lake	South Boulder Creek	0	0	0
	TOTAL	83157	80328	51396

* NO STAFF DECREED CAPACITY ASSUMED TO BE EQUAL TO ACTUAL CAPACITY

III.

G. RESERVOIR STORAGE DISTRICT NO. 7

NAME	SOURCE	AMOUNT - A.F.		
		11-1-73	5-1-74	10-31-74
* Broad	Clear Creek	0	52	0
Campbell No. 1 (Long Lake)	Ralston Creek	1160	1113	787
* Fall River Group of Reservoirs	Fall River	343	343	0
Leyden	Clear Creek	0	798	0
* Loch Lomond Group	Fall River	0	1462	0
* Main	Clear Creek	550	606	606
Maple Grove		550	406	550
Ralston	Moffat via Gross	7135	8454	10410
Standley	Clear Creek	25116	35629	22233
Tucker	Ralston	254	584	87
	TOTALS	35108	49447	34673

* NO STAFF DECREED CAPACITY ASSUMED TO BE EQUAL TO ACTUAL CAPACITY

III.

G.

RESERVOIR STORAGE DISTRICT NO. 8

NAME	SOURCE	AMOUNT - A.F.		
		11-1-73	5-1-74	10-31-74
Allis Reservoir	Carpenter Creek	40	80	40
Aurora Rampart	South Platte	1261	1268	639
Cherry Creek	Cherry Creek	14771	16040	13812
* Fairview & Enl.	Dear Creek	0	0	115
* Fairview No. 2	Dear Creek	0	0	86
Lininger	Beaver Creek	673	673	673
Marston	South Platte	17025	16675	16149
McLellen	South Platte	5470	5164	5110
Platte Canon	South Platte	923	864	904
Tinker & Shaffer & Enl.	Gulch	10	15	15
Wakeman & Enl.	Willow Creek	60	65	40
Waucundah	Bear Springs Creek	115	335	110

DISTRICT NO. 8-80

Altura R. (Duck)	Geneva	37	56	56
Cheesman	S. Fk. South Platte	58298	66693	41720
Wellington	Buffalo Creek	3036	3824	2072
	TOTAL	101719	111752	81541

* DECREED CAPACITY ASSUMED TO BE EQUAL TO ACTUAL CAPACITY

III.

G. RESERVOIR STORAGE DISTRICT NO. 9

NAME	SOURCE	AMOUNT - A.F.		
		11-1-73	5-1-74	10-31-74
Bergen No. 1 (East)	Turkey Creek	100	515	270
Bergen No. 2 (West)	Turkey Creek	245	600	500
Bowles	Bear Creek	1650	1900	1920
Carmody	Bear Creek	0	0	0
Deane	Turkey Creek	310	520	285
Grant A (West)	Bear Creek	60	58	60
Grant B (South)	Bear Creek	125	195	190
Grant C (East)	Bear Creek	60	95	60
Harriman	Bear Creek	365	500	520
Henry Lake	Bear Creek	125	185	165
Johnston	Bear Creek	280	750	620
Kendrick	Bear Creek	70	225	100
Kingfisher Lake	Turkey Creek	70	120	70
Patrick	Bear Creek	785	1000	690
Soda No. 1 (West)	Bear Creek	240	246	0
Soda No. 2 (East)	Bear Creek	745	1500	605
Tule No. 1 (Upper)	South Platte	85	85	80
Tule No. 2 (Lower)	South Platte	90	90	90
Ward	Bear Creek	800	775	630
Willow Sp. #1	Turkey Creek		105	70
	TOTAL	6205	9464	6925

III.

G. RESERVOIR STORAGE KISTRICK NO. 23

NAME	SOURCE	AMOUNT - A.F.		
		11-1-73	5-1-74	10-31-74
Antero	So. Fk. South Platte	15878	15838	15917
Eleven Mile	So. Fk. South Platte	98768	94226	95454
Jefferson*	Jefferson Creek	Full	3/4 Full	1/8 Full
Montgomery	Md. Fk. South Platte and Hoosier Tunnel	3683	924	3025
Tarryall	Tarryall Creek	<u>107000</u>	<u>107000</u>	<u>107000</u>
	TOTAL	225329	217988	221396

*No Staff

III.

G. RESERVOIR STORAGE DISTRICT NO. 64

NAME	SOURCE	AMOUNT - A.F.		
		11-1-73	5-1-74	10-31-74
Julesburg R.	South Platte	19794	22814	14096
North Sterling	South Platte	38600	71450	16710
Prewitt	South Platte	<u>15370</u>	<u>38360</u>	<u>24210</u>
	TOTAL	73764	122624	55016

III.

G.

RESERVOIR STORAGE DISTRICT NO. 1

NAME	SOURCE	AMOUNT - A.F.		
		11-1-73	5-1-74	10-31-74
Empire	South Platte	3554	34662	4639
Riverside	South Platte	9672	58633	21013
Jackson Lake	South Platte	14580	34444	3058
Bijou No. 2	South Platte	3150	4300	3360
Klug No. 1	Box Elder	633	633	0
Heart	Little Crow	150	446	122
Sidwell Reservoir #1	Lone Tree Creek	48	48	8
Sidwell Reservoir #2	Lone Tree Creek	91	91	91
	TOTAL	31878	133257	32291

IV.

WINTER WHEAT

1973 FINAL

IRRIGATED

NON IRRIGATED

1973 PRELIMINARY

COUNTY OF COUNTY IN DIV. I	PORTION OF COUNTY		IRRIGATED		NON IRRIGATED		TOTAL VALUE	VALUE	BUSHELLS x 1000	VALUE x \$1000
	ACRES	YIELD bu/acre	YIELD bu/acre	ACRES	YIELD bu/acre	VALUE x \$1000				
Adams	2500	38.0	38.0	125500	29.0	6554.9	6723	137000	3637.8	13641.8
Arapahoe	100	40.0	40.0	60900	27.0	2878.2	2884	57000	1425.0	5343.8
Boulder	1200	38.0	38.0	5100	28.0	232.8	307	8100	277.0	1038.8
Cheyenne	800	40.0	40.0	46000	16.0	1348.4	1404.6	62800	1237.2	4639.5
Clear Creek										
Denver	700	39.0	39.0	5800	22.0	219.5	266.4	6900	167.8	629.3
Douglas	800	50.0	50.0	29000	22.0	1085.8	1156.3	27000	531.9	1994.6
Elbert										
Gilpin	300	49.0	49.0	2900	37.0	171.4	195.0	3400	112.2	420.8
Jefferson	6700	40.0	40.0	195300	22.0	7732.1	8217.0	244000	5687.1	21326.6
Kit Carson	1000	44.0	44.0	12000	31.0	636.0	711.4	13500	407.4	1527.8
Larimer	700	40.0	40.0	33200	21.0	1234.6	4848.0	35000	756.0	2835
Lincoln	500	46.0	46.0	131500	28.0	6591.3	6631.1	149000	3730.5	13989.4
Logan	3000	52.0	52.0	44000	27.8	1955.8	2205.0	48500	1327.5	4978.1
Morgan	40	37.0	2.4	40	20.0	1.3	3.7			
Park	2800	45.0	45.0	108200	34.0	6475.8	6696.8	110000	3759.6	14098.5
Phillips	1000	55.0	55.0	70500	42.0	5123.8	5217.7	72500	2614.0	9802.5
Sedgwick										
Teller	3600	41.0	41.0	260400	24.2	11233.5	11498.0	263000	6671.7	25018.9
Washington	4000	52.9	52.9	169000	27.0	7988.0	178000	178000	3969.4	14885.3
Weid	3400	41.0	41.0	100600	22.0	3962.4	4210.8	123000	3139.8	11774.3
Yuma										
TOTALS	33140			139994		65425.6	63175.8	1538700	39451.9	14794.5

1972 FINAL

IV.

POTATOES

CORN FOR SILAGE

HAY

PORTION OF COUNTY IN DIVISION I	POTATOES			CORN FOR SILAGE			HAY		
	ACRES	YIELD cwt/acre	VALUE x \$1000	ACRES	YIELD tons/acre	VALUE x \$1000	ACRES	TONS x 1000	VALUE x \$1000
Adams				5,000	18.7	1,203.0	15700	47.2	2,121.6
Arapahoe				1,500	16.0	302.4	6300	10.9	459.2
Boulder				6,100	20.0	1,493.9	16200	44.6	1,809.0
Cheyenne	39			3,200	19.0	766.1	6350	10.8	513.4
Clear Creek									
Denver				400	24.0	121.2	8600	11.8	496.7
Douglas				3,200	9.0	362.9	20000	40.8	1,199.7
Elbert	69								
Glipin				300	20.0	74.1	6300	14.3	583.5
Jefferson				15,700	19.0	3,759.0	28500	59.9	2,556.0
Kit Carson				26,200	19.5	6,310.0	42000	123.3	4,736.6
Larimer				530	10.0	66.8	25000	26.5	1,081.0
Lincoln	26.5			17,100	19.8	4,190.0	50500	126.2	5,248.0
Logan				16,800	21.0	4,357.0	27300	77.4	3,117.0
Morgan	2,800	280	1,842.4				21000	12.6	541.8
Park				1,400	16.5	291.1	13100	29.6	1,162.9
Phillips				7,000	19.5	1,686.0	10200	27.8	1,086.9
Sedgwick				100	13.0	16.5	2700	3.2	130.8
Teller				4,500	17.5	992.9	36700	47.5	1,981.9
Washington				101,500	21.0	26,330.0	113500	310	11,754.0
Weid	3,850	285	2,575.6	9,100	17.0	1,949.0	38000	78.8	3,197.0
Yuma									
TOTALS	6,650		4,418.0	219,630		54,271.9	473820		43,777.0

OATS

1972 FINAL

IRRIGATED Non Irrigated

PORTION OF COUNTY IN DIVISION I (%)	IRRIGATED			Non Irrigated			TOTAL VALUE x \$1000
	ACRES	YIELD bu/acre	VALUE x \$1000	ACRES	YIELD bu/acre	VALUE x \$1000	
Adams	1000	60.8	49.2	800	29.3	19.0	68.2
Arapahoe							
Boulder	700	59.0	31.8	250	40.0	7.7	39.5
Cheyenne							
Clear Creek							
Denver	50						
Douglas							
Elbert	69	38.0	15.3	150	15.0	18.2	33.5
Gilpin				1300	12.0	12.3	12.3
Jefferson	100	58.0	4.6	100	30.0	2.4	7.0
Kit Carson	100	44.0	4.1	300	20.0	5.7	9.8
Larimer	1000	61.0	52.5	100	35.0	3.0	55.5
Lincoln				30	10.0	.3	.3
Logan	900	53.0	37.2	800	20.0	12.5	49.7
Morgan	700	90.7	54.0				54.0
Park							
Phillips	150	50.0	5.6	350	22.0	5.8	11.4
Sedgwick	100	53.0	4.2	750	51.3	30.4	34.6
Teller							
Washington	50	48.0	1.9	300	30.0	7.2	9.1
Weld	3500	60.0	173.6	3000	28.0	69.6	243.2
Yuma	100	50.0	4.0	400	18.0	5.8	9.8
TOTALS	8450		437.0	8630		199.9	637.9

SUGAR BEETS

1972 FINAL

NON IRRIGATED

IRRIGATED

PORTION OF COUNTY IN DIVISION I (%)	IRRIGATED			NON IRRIGATED			TOTAL VALUE x \$1000
	ACRES	YIELD Tons/acre	VALUE x \$1000	ACRES	YIELD bu/acre	VALUE x \$1000	
Adams	2350	17.4	744.4				
Arapahoe	2250	18.0	747.4				
Boulder	315	16.4	84.3				
Cheyenne							
Clear Creek							
Denver							
Douglas							
Elbert							
Gilpin							
Jefferson							
Kit Carson	16900	18.5	5146.4				
Larimer	6350	18.4	2205.6				
Lincoln							
Logan	11500	18.6	3898.0				
Morgan	13000	21.0	4739.7				
Park							
Phillips	7000	18.2	2196.4				
Sedgwick	2800	20.1	966.6				
Teller							
Washington	2150	17.1	640.3				
Weld	45600	19.7	16548.8				
Yuma	10800	18.6	3418.7				
TOTALS	121015		41336.6				

SPRING WHEAT
1972 FINAL

NON IRRIGATED

IRRIGATED

PORTION OF COUNTY IN DIVISION I (%)	IRRIGATED			NON IRRIGATED			TOTAL VALUE x \$1000
	ACRES	YIELD bu/acre	VALUE x \$1000	ACRES	YIELD bu/acre	VALUE x \$1000	
Adams	220	27.3	10.6	780	14.0	19.3	29.9
Arapahoe							
Boulder	80	25.0	3.2	20	10.0	.3	3.5
Cheyenne	39			80	14.0	1.8	1.8
Clear Creek							
Denver				20	20.0	.7	.7
Douglas							
Elbert	69						
Gilpin							
Jefferson							
Kit Carson				100	13.0	2.1	2.1
Larimer	300	26.0	13.1	300	11.0	5.6	18.7
Lincoln	26.5			15	13.0	.3	.3
Logan				1600	11.5	30.7	30.7
Morgan	50	28.0	2.3	50	11.0	.9	3.2
Park	87.4						
Phillips				100	11.0	1.8	1.8
Sedgwick				20	15.0	.5	.5
Teller	47.5			830	10.1	13.7	20.9
Washington							
Weld	170	25.9	7.2				
Yuma	80	30.0	4.1				
TOTALS	900		40.5	3915		77.70	118.2

IV.

DRY BEANS
1972 FINAL

1973 PRELIMINARY

NON IRRIGATED

IRRIGATED

COUNTY	PORTION OF COUNTY IN DIVISION I (%)	IRRIGATED				NON IRRIGATED				TOTAL VALUE x \$1000	ACRES	PRODUCTION CUT	VALUE x \$1000
		ACRES	YIELD lbs/acre	VALUE x \$1000	ACRES	YIELD lbs/acre	VALUE x \$1000	ACRES	PRODUCTION CUT				
Adams		400	1100	40			40						
Arapahoe		1400	2100	226.4			226.4			1300	25400	558.8	
Boulder	39												
Cheyenne													
Clear Creek													
Denver													
Douglas													
Elbert	69	70	1400	9.0	70	550	6.9	9.0	70	420	9.2		
Gilpin													
Jefferson													
Kit Carson		6000	1350	721.1	100	750	6.5	727.6	3900	31200	686.4		
Larimer		4000	1900	676.4				676.4	4000	74000	1628.0		
Lincoln	26.5	55	1400	6.1	25	700	1.5	7.6	100	600	13.2		
Logan		4700	1900	785.7	600	600	31.8	817.5	3400	62900	1383.8		
Morgan		8900	2000	1494.5	100	500	4.5	1499.0	8100	105300	2316.6		
Park	87.4												
Phillips		4900	1600	674.2	100	700	6.1	680.3	5000	80000	1760.0		
Sedgewick		5600	1600		200	250		702.8	6700	107200	2358.4		
Teller	47.5												
Washington		800	1100	75.7				75.7	300	3600	79.2		
Weld		24400	1700	3483.4	100	400	3.5	3486.9	20500	352200	7748.4		
Yuma		5100	1510	659.9	200	500	8.7	668.6	2100	33300	732.6		
TOTALS		66325		8852.4	1495		69.5	9617.8	55470	876120	19274.6		

CORN FOR GRAIN

1972 FINAL

1973 PRELIMINARY

NON IRRIGATED

IRRIGATED

COUNTY	PORTION OF COUNTY IN DIVISION I (%)	IRRIGATED				NON IRRIGATED				TOTAL VALUE x \$1000	ACRES	BUSHELLS x 1000	VALUE x \$1
		ACRES	YIELD bu/acre	VALUE x \$1000	ACRES	YIELD bu/acre	VALUE x \$1000	ACRES					
Adams		6,300	105.3	1,107.0				4,600	437.0	1,114.4			
Arapahoe		450	104.0	74.0				1,500	50.9	129.8			
Boulder		3,400	104.0	587.0				3,400	307.0	782.5			
Cheyenne	39	1,600	115.0	297.9				2,150	193.5	492.3			
Clear Creek													
Denver		50	82.0	6.5				100	8.0	20.4			
Douglas		275	82.0	34.7				1,700	51.2	130.3			
Elbert	69				485	15.0	11.0						
Gilpin													
Jefferson		100	104.0	18.8				100	7.0	17.5			
Kit Carson		41,800	118.0	7,691.0	200	15.0	7.8	58,000	6,356.0	16,207.8			
Larimer		3,000	117.0	589.7				5,000	470.0	1,198.5			
Lincoln	26.5	215	105.0	36.6	55	15.0	1.3	345	32.6	83.2			
Logan		22,500	114.0	4,131.7	2,500	24.6	97.3	25,000	2,465.0	6,285.8			
Morgan		41,500	126.0	8,261.8	1,000	21.0	33.2	48,000	5,062.0	12,908.1			
Park	87.4												
Phillips		17,800	126.0	3,454.3	6,200	27.6	263.3	28,000	2,506.5	6,391.6			
Sedgwick		11,000	120.0	2,112.0	1,500	21.0	50.0	1,400	1,228.0	3,131.4			
Teller	47.5												
Washington		7,100	126.0	1,404.1	300	20.0	9.9	11,000	1,100.0	2,805.0			
Weld		5,250	115.2	10,346.0	1,000	24.0	41.5	61,500	6,142.0	15,662.1			
Yuma		73,500	109.0	12,419.5	6,500	24.0	240.5	84,000	9,076.0	23,143.8			
TOTALS		235,840.0		52,572.6	19,740.0		755.8	348,395.0	35,492.7	90,505.3			

IV.

BARLEY

1972 FINAL

1973 PRELIMINARY

IRRIGATED

NON IRRIGATED

PORTION OF COUNTY IN DIVISION I (%)	IRRIGATED			NON IRRIGATED			1973 PRELIMINARY			
	ACRES	YIELD bu/acre	VALUE x \$1000	ACRES	YIELD bu/acre	VALUE x \$1000	TOTAL VALUE x \$1000	ACRES	BUSHEL x 1000	VALUE x \$1000
Adams	1,700	62.9	154.8	15,100	31.0	677.4	832.2	13,400	441.0	926.1
Arapahoe	200	56.0	15.2	6,000	30.0	242.9	258.1	5,400	148.1	311.0
Boulder	6,400	53.0	567.4	1,400	34.9	81.8	649.2	7,100	364.0	764.4
Cheyenne	39			100	30.0	4.3	4.3	200	4.2	8.8
Clear Creek										
Denver										
Douglas				1,200	34.5	55.9	55.9	1,200	26.4	55.4
Elbert	70	57.0	5.5	2,000	25.0	68.5	74.0	4,150	125.7	264.1
Gilpin										
Jefferson	250	56.0	19.6	950	48.0	63.8	83.4	1,200	45.0	94.5
Kit Carson	400	64.0	33.3	1,500	20.0	39.1	72.4	2,700	76.4	160.5
Larimer	12,200	62.0	1,333.0	4,300	42.0	318.8	1,651.8	18,200	902.2	1,895.7
Lincoln	25	60.0	2.3	50	24.8	1.8	4.1	160	3.4	7.2
Logan	800	44.0	50.7	5,000	30.0	216.0	266.7	5,800	200.0	420.2
Morgan	3,900	67.0	379.6	2,900	29.0	121.8	501.4	8,200	397.0	833.4
Park										
Phillips	50	56.0	3.7	550	34.0	24.7	28.4	2,400	88.8	186.5
Sedgwick	50	50.0	3.5	950	32.0	42.2	45.7	3,000	123.0	258.3
Teller										
Washington	1,300	55.0	23.7	3,900	33.0	183.9	207.6	8,400	304.4	638.6
Weld	21,400	57.3	2,125.7	12,500	33.0	716.1	2,841.8	30,500	1,387.8	2,914.4
Yuma	100	58.0	7.8	200	20.0	5.4	13.2	600	12.9	27.1
TOTALS	47,845.0		4,725.8	58,600.0		2,864.4	7,590.2	112,610.0	4,650.3	9,766.2

IV.

SORGHUM FOR GRAIN

1972 FINAL

1973 PRELIMINARY

NON IRRIGATED

IRRIGATED

COUNTY	PORTION OF COUNTY IN DIVISION I (%)	IRRIGATED				NON IRRIGATED				TOTAL VALUE x \$1000	ACRES	BUSHELS x 1000	VALUE x \$1000
		ACRES	YIELD bu/acre	VALUE x \$1000	ACRES	YIELD b7/acre	VALUE x \$1000	ACRES					
Adams		200	60.0	18.8	250	16.0	6.3	25.1	400	16.0	37.1		
Arapahoe		100	60.0	9.5	250	16.0	6.3	15.8	600	13.5	31.3		
Boulder													
Cheyenne	39	78	62.0	7.6	3237	29.0	145.4	153.0	8500	312.8	725.7		
Clear Creek													
Denver													
Douglas													
Elbert	69	104	56.0	8.9	380	12.0	7.0	15.9	1173	18.6	43.2		
Gilpin													
Jefferson													
Kit Carson		1800	68.2	192.5	3200	25.0	125.7	318.2	4500	131.1	304.2		
Larimer													
Lincoln	26.5	27	70.0	2.9	1166	24.0	44.0	46.9	5500	102.2	237.1		
Logan		150	70.0	17.4	750	36.4	45.3	62.7	2700	101.8	236.2		
Morgan		200	65.0	21.5	750	28.0	34.9	56.4	2600	77.2	179.1		
Park	87.4												
Phillips		250	58.0	22.5	3050	26.0	122.9	145.4	4300	151.5	351.5		
Sedgwick					350	38.0	22.3	22.3	1800	92.0	213.4		
Teller													
Washington	47.5	100	55.0	8.6	1900	25.0	74.1	82.7	1500	27.1	62.9		
Weld		150	72.0	17.8	650	36.0	39.5	57.3	800	22.0	51.0		
Yuma		2000	53.0	165.0	19000	29.0	859.9	1024.9	20000	677.8	1572.5		
TOTALS		5159		493.0	34933		1533.6	2026.6	54373	1743.6	4045.2		

V. COMPACTS AND COURT STIPULATIONS

A.

No serious problems were encountered this year in the administration of the Interstate Compacts.

The South Platte River Compact, Colorado and Nebraska being the signatory states, specifies that the flow of the river at the state line between April 1st and October 15th of each year shall be at least 120 cfs. Otherwise, diversions below the Washington-Morgan County line, junior to June 14, 1897, will be curtailed sufficiently to provide said 120 cfs or such portion thereof as might be produced by suspending those diversions.

The flow at Julesburg gage fell below the 120 cfs Compact figure for approximately 108 days during the period of April 1st to October 15th.

The decree of the United States Supreme Court, in the case of Wyoming vs. Colorado, limits Colorado allocations to 49,375 acre-feet per calendar year. Of this amount 19,875 acre-feet is allocated to the Transmountain Users. The Meadowland Users are entitled to the remaining 29,500 acre-feet, with the restriction that not more than 1,800 acre-feet shall be diverted after July 31 in any calendar year. The Meadowland Users are also entitled to use any non-diverted Transmountain water.

As mentioned in the introductory statement, the 1974 diversions from the Laramie River within Colorado were 42,399 acre-feet or approximately 86 percent of the allowable diversion under the federal court order.

The Republican River Compact allocates water to the signatory states, Colorado, Kansas and Nebraska, on the basis of beneficial consumptive use. Colorado's total allocation of 54,100 acre-feet is broken down as follows:

North Fork of the Republican River Drainage Basin	10,000 ac.ft.
Arikaree River Drainage Basin	15,400 ac.ft.
South Fork of the Republican River Drainage Basin	25,400 ac.ft.
Beaver Creek Drainage Basin	3,300 ac.ft.

and in addition, for beneficial consumptive use in Colorado annually, the entire water supply of the Frenchman Creek (River) Drainage Basin in Colorado and the Red Willow Creek Drainage Basin in Colorado.

The computed annual consumptive use in Colorado in the Republican River Basin for the 1973 Water Year was as follows.

North Fork of Republican River	3,740
South Fork of Republican River	5,290
Arikaree River	2,790
Beaver Creek	0
	<hr/>
	11,820

V.

B. COURT STIPULATIONS AND LITIGATION

Litigation concerning the administration and use of ground water was carried over from previous years into 1974 during which it was resolved, at least for the time being.

In 1972 the State Engineer had proposed Rules and Regulations for the use of ground water thereafter. A number of protests were filed with the court. These protests were entered by a good cross section of water users representing wells and surface rights for municipal, industrial, commercial and irrigation uses.

Hearings in the Water Court started in June of 1973 and were continued in October of that year. After the State had completed its testimony the protestants' attorneys, the State's attorneys and the Water Court felt it would be most desirable to attempt to reach some stipulated agreement on the basis of the testimony and the desires of the litigants. It was agreed that proposals by all parties would be submitted for examination and then conferences held to determine those areas of agreement and, if possible, to reach some final acceptable solution. Consequently several such general meetings were held as well as sub group conferences in which open discussion by all parties was pursued.

The last formal hearing on this particular combination of cases was held by the Water Court on March 15, 1974. At that time the final draft of the stipulation approved by the litigants was signed by the Court as an order effective the following day.

The accepted Rules and Regulations, a copy of which is included in the appendix of this report, provided that any nonexempt well drawing water from an aquifer tributary to the South Platte River would thereafter be curtailed except upon Mondays and Tuesdays of 1974 and on Mondays of 1975 unless it were pumping under an approved plan of augmentation, alternate point of diversion for a valid surface right or under its own priority which entitled it to operate within the appropriation system. Provision was also made for operation of wells under plans approved by the Division Engineer which recognized a different, but essentially equivalent, cycle of operation than the weekly unrestricted pumping for 1974 and 1975.

The Rules and Regulations further outlined the requirements for acceptable augmentation plans which would allow wells to operate without restriction by replacing water into the streams in amounts not to exceed the depletion caused to the stream at the time and place of such depletion when a valid demand was placed on the stream by a senior water right.

One of the minimum guidelines adopted by the Court for approval of such augmentation plans was that replacement water be made available to the Division Engineer in an amount equal to 5 percent of the projected annual volume of ground water diversion under the plan from which he could draw water to compensate the lawful senior requirements at a rate not to exceed 5 percent of the capacity of the participating wells. However, in the event this amount of water was determined by the Division Engineer to be insufficient to relieve the injury to senior surface rights demanding their water, the rate of depletion would be determined by use of the Glover formula using prescribed engineering values following which the replacement rates would be modified accordingly.

Compliance with the Rules and Regulations while not universal was nevertheless better than expected. Many well operators and owners took immediate steps to join an augmentation group or provide a plan of their own. Others did nothing until contacted by administrative officials following which they joined in an augmentation plan, however sometimes with reluctance. A few well owners refused to comply with written orders for regulation and consequently were summoned into Water Court upon the complaint of the Division Engineer. Prior to hearing on the complaint these well owners joined an operating augmentation plan or in one instance submitted their own plan for court approval. This particular plan is still pending in court and regulation of the subject wells will depend upon such decision.

The Water Court has heard a number of cases during the year. Those applications involving plans of augmentation have taken the most time for preparation and review. Two distinct interpretations of the law, insofar as it relates to replacement of depletion, have become apparent.

On the one hand, the general feeling of the Division of Water Resources and the owners of most of the older water rights as well as many attorneys is that the law which allowed wells to operate without regulation if the current depletion from such well use were replaced in the stream at times of senior demand was adopted to accommodate an existing condition while recognizing the priority system at the same time without wrecking havoc upon the agricultural economy of the region.

On the other hand, many subdividers and water users with expanding needs, as well as their attorneys, take the position that the law allows any new user, particularly underground water users, to take advantage of the depletion replacement concept. The augmentation plans they are presenting provide water from some surface source to offset the depletion resulting from the anticipated use of the proposed wells. In those cases using direct irrigation rights, the historic consumptive use of the rights have been considered as adequate for this purpose if the full amount of the transferred right is left in the stream.

The right to augment any water use, whether it be from ground or surface sources, by replacement of depletion only becomes more questionable when reservoir water is used as the augmentation source. In these cases the applicants take full credit for the reservoir water released to the stream thereby realizing 100 percent consumption of such supplies. This same reasoning is applied to water from transmountain sources and in some cases to return flows following initial uses.

Administrative officials feel that if new wells or surface uses are permitted on the basis of depletion replacement requirements only, it follows that old water rights and uses should have the same privilege. If this should be the policy it then becomes quite conceivable that water from all reservoirs, trans-mountain sources, and even identifiable return flows would be subject to 100 per-cent consumptive use by the owner thereof. This would constitute a profound change in water use and create an additional burden on the stream to the immediate disadvantage of previously established water rights operating under the priority system as it has been historically administered.

No doubt the courts will provide some legal guidelines for future cases. Hopefully, the cases upon which such decisions will be made will be of such range and interest that the courts will be provided the breadth of testimony to fully explore the law and the equities of water users.

The State Engineer has protested the ruling of a referee of the Water Court in W-7265 in which the applicant was given a water right with an order to the State Engineer to issue a permit for a well. The proposed location of the well is approximately 3000 feet from a thread of the South Platte River and is, of course, in the river alluvium. A previous application for a well permit had been denied by the State Engineer because of the effect the well would have on the river in which no unappropriated water was available. The application to the Court stated that the well would be entered in an augmentation plan so that it might pump without regulation. This particular case clearly raises the question of whether a new well should be given the same latitude of use as an old well established prior to the passage of Senate Bill 81 in 1969. If the courts sustain the referees decision it would seem that the statutes providing authority to the State Engineer to grant or deny well permits on the basis of effect upon the stream and other water rights would become meaningless since the applicant could go to court, receive a decree and have a permit ordered on the basis of his intent to divert unappropriated water and, in its absence, to participate in an augmentation plan.

A series of applications to the Water Court for approval of plans of augmentation for subdivisions in the Red Feather area, tributary to the Cache la Poudre River have drawn objections from the Cache la Poudre Water Users Association. These applications were entered by substantially the same landowners who are asking for some 3,200 individual in-house use wells. Reservoir water will be the principal source for depletion replacement. Hearings have been set for January 6 and are expected to explore some of the differences in concept previously mentioned.

The Colorado Supreme Court reversed the ruling of the Water Court in the Lundvall Case. The lower court had held that the statute giving authority over the granting of permits and establishing priority lists in the designated ground water basins was unconstitutional in that it improperly granted judicial authority to the Commission and the State Engineer over water that was tributary to surface flows. The higher court found that the General Assembly had acted within its proper authority in enacting the law and that the water in question was not significantly tributary under the statute.

The unprecedented growth of suburbs north of Denver has placed an additional burden on limited water supplies. For the first time in the history of Colorado, municipalities are attempting to invoke the clause in Section 6 of Article XVI of the Colorado Constitution which states that those using water for domestic purposes shall have the preference over those claiming for any other purpose. The cities of Thornton and Westminster have initiated condemnation proceedings on that portion of Standley Reservoir owned by the Farmers Reservoir and Irrigation Company who had refused to consider a sale to the cities. The City of Thornton has also offered the Farmers Highline Irrigation Company \$8,000,000 for their rights on Clear Creek and the accompanying system. At the present time the offer has been refused and consequently condemnation is anticipated by that irrigation system.

While the immediate problem is local, the long range impact is of great importance. With the loss of irrigation water the agricultural production potential of thousands of acres will be severely curtailed in this time of world wide food shortages. The companion problem, although not a subject of litigation, is the rapid encroachment of municipal and industrial growth on highly productive agricultural areas.

V.

C. LEGISLATION

The only legislation adopted in 1974 that directly affected administration of water rights was Senate Bill 7. The passage of Senate Bill 7 by the State Legislature repealed and reenacted Section 148-21-23, CRS 1963, as amended. This statute provides that an applicant must file his Plan of Augmentation with the Clerk of the Water Court before he submits his plan to the State Engineer for temporary approval.

The purpose of the bill was to make public such Plans of Augmentation through the monthly publication of all applications to the Water Court and to further allow the State Engineer to investigate the plan and, if so approved, allow operation of the plan pending final action of the Water Court.

Other water bills approved by the Assembly were:

Senate Bill No. 4 concerning the annual report to the General Assembly on proposed contracts involving the revolving Water Projects Construction Fund as administered by the Colorado Water Conservation Board.

Senate Bill No. 5 which authorized expenditures from the Colorado Water Conservation Board Construction Fund for projects feasibility investigations.

Senate Bill No. 6 giving the Board of County Commissioners of each county authority for flood control purposes to enter upon private lands to remove channel obstructions which are a flood hazard.

House Bill No. 1165 provided the State's authority and jurisdiction over the drilling and operation of geothermal wells would be exercised through the Oil and Gas Commission.

VI. DAMS

A. RESERVOIRS

The Dams and Reservoir Section of the Division of Water Resources has developed a very effective reservoir inspection program and as a consequence orders for repair and maintenance have been issued to the owners of a large number of structures. Generally speaking, compliance with these orders has been satisfactory. The resulting upgrading in safety and servicability of the reservoirs in the Division is ample evidence of the necessity for the long overdue inspection program. Some of the major construction or repairs accomplished in the various water districts are illustrative of the continuing efforts of the owners and the State.

W.D. NO. 1

Jackson Lake was drained by the end of the irrigation season to permit grouting of cracks and holes in the concrete facing of the earthfill dam and adding thickness to a deteriorated section of the facing by guniting of that section. Sand beaching on the east end of the reservoir was also done to help reduce the damaging effect of wave action.

Seepy areas along the downstream toe of the Empire Reservoir dam indicated that the toe drains had become clogged. Storage in the reservoir was curtailed in the fall of '73 until this situation was remedied by the installation of new toe drains. These drains are being extended in the fall of '74.

The well augmentation organization, GASP, has acquired ownership of the Rosener Reservoir on San Arroyo Creek and has finished repair work on the gates to make them operable for their recharge releases.

Although no work was necessary on the dam of Bijou Reservoir No. 2, the inlet structure from the Bijou Ditch was enlarged and repaired with the goal of using the reservoir more effectively in a well augmentation program.

W.D. NO. 2

The major repairs to the dam and the construction of a large O.G. concrete spillway for the Lower Latham Reservoir were finished early enough in the spring to allow filling. This work was necessitated by the failure of the structure on April 12, 1973. Reconstruction was made possible by the granting of a small projects loan by the federal government through the Bureau of Reclamation.

The completion of spillway construction on Standley Reservoir was the final step in complying with the State requirements for operating the reservoir to its capacity. The storage level had been restricted for several years due to movement of the embankment and spillway inadequacies. Plans for modification of the outlet facilities have been approved by the State Engineer.

The City of Aurora has completed construction of the Quincy Dam east of that city and the structure has been approved by the State Engineer for storage of water. The flood of May 8, 1974, together with the existing embankment saturation caused some sloughing on the downstream slope of Horse Creek Reservoir. Drains have been installed and repairs made as required.

W.D. NO. 3

The enlargement of Long Draw Reservoir has been completed to the satisfaction of the State Engineer. The capacity of the reservoir has been expanded from 4,400 to 11,000 acre feet and should be a definite asset to the owner, Water Supply and Storage Company, and a benefit to the Poudre River system. A federal small projects loan supplied the capital necessary for the construction.

Inspection and drill testing on the Cache la Poudre Reservoir Dam revealed excessive saturation of the embankment and seepage through the masonry walls of the outlet conduit. A forty foot section of aluminum liner plate was grouted inside the outlet to help remedy that situation and the level of storage in the reservoir will be restricted until the saturation problem can be safely controlled. The owners are considering various methods of control including widening of the embankment, a bentonite curtain, adequate drains and construction of a totally new dam downstream from the present structure.

The City of Fort Collins is still studying the feasibility for enlargement of Joe Wright Reservoir. Sizings from 2,500 to 6,800 acre feet are being considered.

W.D. NO. 4

The replacement of the south outlet of Horseshoe Reservoir has been completed and accepted by the State Engineer. The repairs were the result of the nearly disastrous failure of the structure on October 3, 1973.

Wave damage to the upstream slope of Boyd Lake Reservoir made it necessary to place additional riprap in the area of the outlet control structure. The reservoir is now fully operational.

Preliminary plans for the construction of additional spillway capacity on Lone Tree Reservoir have been approved and actual repair work will be started soon to allow full use of the reservoir in 1975.

W.D. NO. 5

The development in 1973 of surface seepage on the downstream face of the embankment of Foothills Reservoir as the storage level was held near capacity for a few weeks disclosed the need for the toe drain repair work which was completed in 1974.

Orders for maintenance work such as spillway clearance and tree removal have been ordered on several other reservoirs in District 5.

W.D. NO. 7

Outlet seepage problems caused a near failure of the Lookout Mountain Dam, owned by the City of Golden. Satisfactory repairs have been completed on that structure.

W.D. NO. 8

Construction work continues on Chatfield Dam upstream from Denver on the South Platte River. Completion of this flood control structure is anticipated in 1975.

W.D. NO. 23

Several meetings with City of Aurora officials were held during the year to discuss outlet capacities for the proposed Spinney Mountain Reservoir, upstream from Eleven Mile Reservoir on the South Platte River. After studying historic stream records it was concluded that an outlet capacity of 1750 cfs would accommodate historic seven day flows while reservoir storage levels were held at approximately 10 ft. above the outlet.

W.D. NO. 64

A steel liner plate was grouted into the outlet conduit of North Sterling Reservoir this fall.

W.D. NO. 80

The outlet conduit repair work and valve additions to Cheesman Reservoir were completed satisfactorily prior to the 1974 irrigation season.

Throughout the Division a large number of requests have been made to reservoir owners to provide the hydrologic studies necessary to determine the adequacy of the reservoir embankments and spillways.

As built plans are being required for those structures which have no construction plans on file. Generally speaking the owners have also been asked to remove deep rooted growth from the embankments to preclude further root penetrations and to allow closer observation of surface conditions. Toe drain cleaning or installation has been required in instances of downstream slope saturation. Operational outlet controls as well as maintenance of the other integral outlet components have been ordered as necessary.

VI.

B. LIVESTOCK WATER TANKS - EROSION CONTROL DAMS

The total number of livestock water tanks and erosion control dams approved between November 1, 1973 and October 31, 1974 are presented below in tabular form by water district:

DISTRICT	NO. OF LIVESTOCK TANKS	TOTAL CAPACITY (AF)	NO. OF EROSION CONTROL DAMS	TOTAL CAPACITY (AF)
1	7	38.	7	23.4
2				
3			1	5.0
4				
5	1	5.0		
6				
7	2	6.5		
8	2	8.0	1	1.5
9	1	1.2		
23	3	17.9	1	4.0
48				
49	2	14.6		
64				
65	2	7.57		
80				
	20	98.77	10	33.9

VII. WATER RIGHTS

A. TABULATION AND ABANDONMENT

Early in 1974 water commissioners began preparing lists of water rights to be submitted for possible abandonment. These lists were reviewed by the Division Engineer and the State Engineer. The 1974 abandonment list for Division I contained 718 structures which were abandoned in total or reduced in amount.

The July 10, 1974 revised tabulation and abandonment list were published and received at the end of July. Due to a Herculean effort on the part of our secretaries, we were able to mail 470 copies by certified mail to owners or last known owners of abandoned water rights by August 7, 1974. An additional 88 copies were sent to subscribers of the Court's resume list. Many of these rights have not been used for in excess of 30 years. Therefore, the owners were difficult to locate as was evidenced by the fact that only 279 copies were accepted by the addressees.

From August 10 to September 10, objections were received to 203 structures which had been placed on the abandonment list. A number of attorneys also protested the short time available to review and check into water rights on the abandonment list for their clients.

As the objections were being reviewed in the Division office, it became apparent that the October 10 deadline for filing revisions with the Water Clerk was a near impossibility.

On October 2, 1974, Judge Carpenter entered an Order in Case W-7792 that the Defendants, (Northern Colorado Water Conservancy District, et al) would have until May 2, 1975, to further proceed. The Plaintiffs, (C.J. Kuiper, State Engineer, et al) were ordered to take no further action with respect to C.R.S. Section 148-21-28 until after response by the Defendants.

VII. WATER COURT
 B. DIVISION 1

WATER DIVISION 1 CASES FILED:

1973	Filings	Wells	Other
November	21	6 186-Aug	16
December	28	22 3217-Aug	8 8-Aug
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1974			
January	30	10 410-Aug	61
February	14	11 795-Aug	7 1-Aug
March	25	25 3148-Aug	63 6-Aug
April	15	8 100-Aug	6 3-Aug
May	23	6 57-Aug	16 20-Aug
June	45	4 34-Aug	31 107-Aug
July	36	42 874-Aug	32
August	18	8	15
September	28	21 72-Aug	26
October	17	7 50-Aug	18 6-Aug
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TOTAL	300	170 8943-Aug	299 151-Aug
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Cases Decead November 1973 through October 1974 -- 1325
 Structures Decead: 2212 wells and 5896 wells in Augmentation Plans
 Other Structures Decead: 279

VIII.

A. ORGANIZATIONS

CONSERVANCY DISTRICTS

Upper South Platte Water Conservancy Distrect	James Settele	President	Fairplay
Central Colorado Water Conservancy District	John W. Rayburn	Manager	315 Denver Ave. Ft. Lupton
Northern Colorado Water Conservancy District	Earl F. Phipps	Manager	P. O. Box 679 Loveland
Lower South Platte Water Conservancy District	Gary R. Friehauf	Secretary- Treasurer	P.O. Box 1725 Sterling
St. Vrain & Left Hand Water Conservancy District	Verna Sigg	Secretary	1755 N. Main Longmont

VIII.

B. ORGANIZATIONS

WATER DISTRICT NO. 1

DITCH AND RESERVOIR COMPANIES

A. A. Smith Irrigating Canal Reservoir, Milling and Pipeline Company	Dave Spencer	Pres.	Snyder
Beaver Creek Ditch Company	John Higgins	Secy.	Brush
Beaver Ditch Company	Charles Henry	Pres.	Brush
Bijou Irrigation Company	John Samples	Secy.	104 West Beaver Ft. Morgan
Bijou Irrigation District	"	"	"
Corona Ditch Company	Jacob Orr	Owner	2855 Indiana Golden
Duel and Snyder	E. L. Caneva	Pres.	Rt. 1 Ft. Morgan
Fort Morgan Canal Company	Lindy Crumley	Supt.	111 East Railroad Ave Ft. Morgan
Gill & Stevens Ditch Company	Harold Hansen	Pres.	Rt. 1 Brush
Hillrose Irrigation District	Roy Boyles	Secy.	Hillrose
Hoover Ditch Company	Mrs. Pat Peterson	Secy.	Kersey
Iliff Irrigation District	Adam Koehler	Secy.	Sterling
Illinois Ditch Company	George Allard	Pres.	Kersey
Jackson Lake Reservoir Company	Lindy Crumley	Supt.	111 East Railroad Ave Ft. Morgan
Johnson & Edwards Ditch Company	William Tramp	Pres.	Hillrose
Lower Platte & Beaver Irrigation Company	Roy Boyles	Secy.	Hillrose
Logan Irrigation District	John Elsenach	Pres.	Sterling
Morgan, Prewitt Reservoir Co.	John Samples	Secy.	104 West Beaver Ft. Morgan
North Sterling Irrigation District	Alex Michel	Supt.	Foote Building Sterling
Putman Ditch Company	Harlan Snider	Pres.	Masters
Riverside Irrigation Company	Cecil Osborne	Supt.	Box 455 Ft. Morgan
Riverside Irrigation District	"	"	"
Snyder Ditch & Reservoir Co.	Gene Peterson	Pres.	Snyder
Tetsel Ditch Company	John Anderson	Pres.	Merino
Trowell Ditch Company	Willis Elson	Pres.	Hillrose
Upper Platte & Beaver Canal Company	John Higgins	Secy.	Farmers State Bank Brush
Union Ditch Company	B. B. Peterson	Pres.	Snyder
Weldon Valley Ditch Company	Maurice Jones	Pres.	Weldona
Kiowa-Bijou Groundwater Basin	Donald F. McClary		231 Main Street Ft. Morgan

WATER DISTRICT NO. 2

DITCH AND RESERVOIR COMPANIES

Big Dry Creek Ditch & Reservoir Company	Mrs. G. R. Norden	Secy.	Rt. 1 Ft. Lupton
Burlington Ditch Reservoir and Land Company	Tom Fisher	Supt.	Platteville
Brighton Ditch Company	George Stieber	Pres.	Rt. 1 Box 104 Ft. Lupton
Coal Ridge Ditch Company	Ray Sarchet	Pres.	Ft. Lupton
Delta Ditch Company	Robert Davis	Pres.	712 10th Street Greeley
Denver Water Board	James Ogilvie	Manager	144 W. Colfax Denver
Farmers Independent Ditch Co.	Carl Linden	Pres.	1st National Bank Greeley
Farmers Reservoir & Irrigation Co. (Milton Reservoir)	Mel Sarchet	Pres.	7 Hudson
Fulton Ditch Company	Albert Hattendorf	Pres.	639 Jessup Brighton
Gardners Ditch Company	Sylvester DiGiacomo	Pres.	6820 York Denver
German Ditch Company	Casper Sack	Pres.	Bloomfield
Godfrey Ditch Company	Jerome Loeffler	Pres.	LaSalle
Henrylyn Irrigation District	Ralph Rouse	Manager	Box 141 Hudson
Highland Ditch Company	Mr. George Jergens	Secy.	Kersey
Little Burlington Ditch Co.	Mel Sarchet	Pres.	Hudson
Lower Latham Ditch Company	Victor R. Klein	Pres.	Kersey
Lupton Bottom Ditch Company	Ray Sarchet	Pres.	Ft. Lupton
McCanne Ditch & Reservoir Co.	Edwin Tepe	Secy.	Brighton
Meadow Island No. 1 Irrigation Co.	Wm. Mayer	Secy.	Rt. 2 Box 74 Platteville
Meadow Island Irrigation Co.	Ruben Gustafson	Secy.	Rt. 2 Box 145 Ft. Lupton
New Brantner Ditch Company	Mike Roskop	Pres.	Brighton
North Star Reservoir Company	G. R. Norden	Pres.	Rt. 1 Ft. Lupton
Platte Valley Irrigation Company	E. D. Bruntz	Pres.	LaSalle
Platteville Irr. & Milling Co.	John Kunzman	Secy.	Rt. 2 Box 120 Ft. Lupton
Slate Ditch Company	George Breikler	Pres.	Ft. Lupton
Union Ditch Company	John Sitizman	Secy.	LaSalle
Walter & Roberts Ditch Company	Roy Lunvall	Pres.	Greeley
Western Mutual Ditch Company	Ed. Fritzler	Pres.	LaSalle
Wellington Reservoir Company	Jim Erger	Secy.	Brighton
Thompson Ditch Company	G. R. Norden	Secy.	Rt. 1 Box 196 Ft. Lupton

WATER DISTRICT NO. 3

DITCH AND RESERVOIR COMPANIES

Arthur Irrigation Company	Wm. Stover	Secy.	United Bank Bldg. Ft. Collins
B. H. Eaton Ditch Company	Mrs. Carol Schmidt	Secy.	P.O. Box 98 Windsor
Boxelder Ditch Company	Wm. Stover	Secy.	United Bank Bldg. Greeley
Boyd Irrigation Company	Roger Houtchens	Secy.	1007 9th Avenue Greeley
Cache La Poudre Irrigation Co.	Cecil Elliott	Pres.	Ft. Collins
Divide Canal & Reservoir Co.	Don E. Engel	Secy.	106 Elm Eaton
Dixon Canyon Ditch & Reservoir Co.	Wm. Stover	Secy.	United Bank Bldg. Ft. Collins
Greeley Irrigation Company	Edgar Bartels	Secy.	1301 9th Street Greeley
Jackson Ditch Company	Vivienne Woodward	Secy.	2319 E. Mulberry Ft. Collins
Kern Reservoir & Ditch Company	C. W. Kirby	Pres.	P.O. Box 220 Windsor
Kitchell Reservoir Company	Alice Fisher	Secy.	Rt. 4 Ft. Collins
Lake Canal Company	John Hartman	Secy.	United Bank Bldg. Ft. Collins
Lake Canal Reservoir Company	"	"	"
Larimer County Canal No. 2 Irrigation Company	Wm. Stover	Secy.	United Bank Bldg. Ft. Collins
Larimer & Weld Irr. Company	Don E. Engel	Secy.	106 Elm Eaton
Larimer & Weld Reservoir Co.	"	"	"
Mail Creek Ditch Company	Wm. Stover	Secy.	United Bank Bldg. Ft. Collins
New Cache La Poudre Irr. Co.	Jim Muroya	Secy.	708 8th Street Greeley
New Mercer Ditch Company	Wm. Stover	Secy.	United Bank Bldg. Ft. Collins
North Poudre Irrigating Co.	Larry Cox	Mgr.	North Poudre Irr. office Wellington
No. 10 Ditch Company	Alden Hill	Secy.	160 W. Mountain Ave Ft. Collins
Ogilvy Land & Irr. Company	Mrs. Shirley Wayman	Secy.	1007 9th Avenue Greeley
Pleasant Valley & Lake Canal Co.	Ward Fischer	Secy.	1st National Bank Building Ft. Collins
Taylor & Gill Canal Company	Wm. Seaworth	Pres.	Rt. 3 Ft. Collins
Tunnel Water Company	Vivienne Woodward	Secy.	2319 E. Mulberry Ft. Collins

WATER DISTRICT NO. 3 (continued)

DITCH AND RESERVOIR COMPANIES

Warren Lake Reservoir Company	Wm. Stover	Secy.	United Bank Bldg. Ft. Collins
Water Supply & Storage Company	Vivienne Woodward	Secy.	2319 E. Mulberry Ft. Collins
Whitney Irrigation Company	Mrs. Carol Schmidt	Secy.	P.O. Box 98 Windsor
Wm. Jones Irrigation Company	Geo. Firestien	Pres.	Farmers Spur Greeley
Windsor Reservoir & Canal Co.	Don Engel	Secy.	106 Elm Eaton

WATER DISTRICT NO. 4

DITCH AND RESERVOIR COMPANIES

Arkins Water Association	Mrs. Joy Cross	Secy.	P.O. Box 6 Masonville
Bald Mountain Water Association	Charles McAfee	Secy.	Rt. 2. Box 319N Loveland
Beeline Ditch Company	Guy A. Shable	Secy.	Rt. 1 Box 65 Milliken
Big Thompson Manufacturing Ditch Company	Robert Christensen	Secy.	P.O. Box 642 Loveland
Big Thompson & Platte River Ditch Company	Guy A. Shable	Secy.	Rt. 1 Box 65 Milliken
Blower Ditch Company	Henry Pope, Jr.	Supt.	Rt. 1 Box 138 Longmont
Boulder & Larimer County Irrig- ation & Manufacturing Ditch Company (Ish)	L. V. French	Secy.	Rt. 2 Box 23 Berthoud
Buckhorn Highline Ditch Co.	Mrs. Zella R. Soderburg	Secy.	Star Route Box 31' Loveland
Buckhorn Water Users Association	Mrs. Helen L. Mettlen	Secy.	Masonville
Central Weld County Water District	Dale D. Olhausen	Secy.	115 18th Street Greeley
Consolidated Hillsborough Ditch Company	Don Davis	Secy.	1st National Bank Johnstown
Consolidated Home Supply Ditch & Reservoir Company	W. R. Keirnes	Secy.	Star Route Box 450 Loveland
Culver Irrigation Company	George Landers	Secy.	P.O. Box 209 Longmont
Diagonal Water & Sanitation District	Jim Hudson	Secy.	1200 28th Street Boulder
Eagle Ditch Company	Mrs. Donald H. Lemmon	Secy.	Rt. 2 Box 120 Berthoud
Eglin Ditch Company	Wayne Hicks	Secy.	Rt. 2 Box 127 Berthoud
Evans Ditch Company	Town Clerk of Evans	Secy.	Evans
Fairport Reservoir Company	Nellie Ver Straten	Secy.	Rt. 1 Ft. Collins
Farmers Irrigation Ditch & Reservoir Company	F. Ray DeGood	Secy.	P.O. Box 657 Loveland
Greeley-Loveland Irrigation Co.	Carroll E. Flack	Secy.	803 23rd Avenue Greeley
George Rist Ditch Company	W. R. Kiernes	Secy.	Star Route Box 450 Loveland
Handy Ditch Company	Louis Bein	Secy.	Box 460 Berthoud
Hill & Brush Ditch Company	Jim Nelson	Secy.	Rt. 1 Milliken
Kershner Ditch Company	Harry Soderberg	Secy.	Star Rt. Box 317 Loveland
Little Thompson Valley Water District	Lovilo Fagan	Mgr.	307 Welch Avenue Berthoud
Longs Peak Water Users Assn.	Mrs. Joanne Macy	Secy.	P.O. Box 714 Longmont

WATER DISTRICT NO. 4 (continued)

Louden Irrigation Reservoir and Canal Company	Ralph Benson		925 West 29th Loveland
Loveland & Greeley Reservoir Company	Carroll E. Flack	Secy.	808 23rd Avenue Greeley
Mariana Water District	Lovilo Fagan	Secy.	307 Welch Avenue Berthoud
Masonville Union Ditch & Reservoir Company	Ben Milner	Secy.	Star Route Loveland
Minor Longdon Ditch Company	Elmer Rutt		Rt. 1 Box 3 Johnstown
New Ish Ditch & Reservoir Co.	Horace G. McCarty	Secy.	P.O. Box 658 Longmont
North Carter Lake Water District	Lovilo Fagan	Secy.	307 Welch Avenue Berthoud
Osborn & Caywood Ditch Company	Donald J. Befus	Secy.	716 S. County Rd. 1! Berthoud
Perkins Ditch Company	Arnold Friend	Owner	Star Route Loveland
Rist & Benson Reservoir Co.	Ralph Benson	Supt.	925 West 29th Loveland
Rockwell Ditch Company	Max H. Schaal	Secy.	Rt. 1 Box 50 Berthoud
Ryan Gulch Reservoir Co.	Lavilo Fagan	Secy.	307 Welch Avenue Berthoud
Seven Lakes Reservoir Co.	Carroll Flack	Secy.	808 23rd Avenue Greeley
South Side Irrigation and Reservoir Company	Robert Ausenhus	Secy.	203 East 5th St. Loveland
Victory Irrigating Canal Co.	Cal Carter	Secy.	Star Route Loveland
Wind Cliff Water Association Inc.	Mrs. Vivien Wylene Buser	Secy.	62 Elmhurst Lane, Riverdale Bettendorf, Iowa

WATER DISTRICT NO. 5

DITCH AND RESERVOIR COMPANIES

Allen Lake Reservoir Company	Frank Gould	Supt.	Foothills Highway Boulder
Beckwith Ditch & Reservoir Co.	Mark Benson	Secy.	1500 Florida Ave. Longmont
Bonus Ditch Company	Dick Tanaka	Secy.	Rt. 2 Longmont
Boulder & Left Hand Irrigation Company	Nels Jensen	Secy.	436 Coffman St. Longmont
Clover Basin Ditch & Reservoir Company	Wayne Jurgens	Secy.	Longmont
Davis & Downing Ditch Company	Gordon Kennedy	Secy.	Rt. 3 Longmont
Denio & Taylor Ditch Company	Harold Dawson	Secy.	Longmont
Highland Ditch Company	George Landers	Secy.	1st National Bank Longmont
Highland Lake Reservoir Co.	"	"	"
Ide & Starbird Reservoir Co.	L. A. Biddle	Secy.	Mead
Independent Reservoir Co.	George Reynolds	Secy.	Longmont
James Ditch Company	Don Andrews	Secy.	Rt. 3 Box 171 Longmont
Last Chance Ditch Company	Al Kurtz	Pres.	
	Harold Nelson	Secy.	Rt. 4 Longmont
Left Hand Ditch Company	Frank Gould	Supt.	Foothills Highway Boulder
Longmont Supply Ditch Company	George Landers	Secy.	P.O. Box 209 Longmont
Lower Baldwin Ditch Company	Dean Prieskorn	Secy.	Longmont
Niwot Irrigation Ditch Company	Robert Sewald	Secy.	Rt. 2 Longmont
Oligarchy Irrigating Company	George Landers	Secy.	P.O. Box 209 Longmont
Peck Ditch Company	George Wagner	Secy.	Rt. 3 Longmont
Pella Ditch Company	Rueben Fredstrom	Secy.	Rt. 3 Longmont
Palmerton Consolidated Ditch Co.	James Goss	Secy.	Rt.3 Longmont
Pleasant Valley Reservoir & Ditch Company	Russell Palmer	Secy.	1264 6th Ave. Longmont
Rough & Ready Ditch Company	"	"	"
Smead Ditch Company	Warren Bashor	Secy.	Rt. 3 Longmont
South Flat Ditch Company	David Wagner	Secy.	Rt. 3 Longmont
South Ledge Ditch Company	Reinhold Loukonen	Secy.	Lyons
Supply Ditch Company	George Landers	Secy.	1st National Bank Longmont

WATER DISTRICT NO. 5 (Continued)

Swede Ditch Company	Ed Sanderson	Secy.	Rt. 3 Longmont
Upper Baldwin Ditch Company	Dean Prieskorn	Secy.	Longmont
Union Ditch Company	Frances Hill	Secy.	LaSalle
Union Reservoir Company	"	"	"
Zweck & Turner Ditch Company	Russel Zweck	Secy.	Rt. 3 Longmont
St. Vrain & Lefthand Water Conservancy District	James Cinea	Ex Director	Longmont

WATER DISTRICT NO. 6

DITCH AND RESERVOIR COMPANIES

Andrews & Farwell Ditch & Reservoir Company	Forest White	Secy.	2994 No. 75th Boulder
Baseline Land & Reservoir Co.	Mrs. Margaret Nelson	Secy.	Rt. 1 Box 218 Erie
Boulder & Left Hand Irrig. Co.	Niels Jensen	Secy.	Longmont Nat'l Banl Longmont
Boulder & Weld County Ditch Co.	Ethel Ziegler	Secy.	831-17th Ave. Longmont
Boulder & White Rock Ditch & Reservoir Company	Frank F. Flanders	Secy	P.O. Box 209 Longmont
Butte Irrig. & Milling Co.	Gene Sawhill	Secy.	7996 Valmont Dr. Boulder
Carr & Tyler Ditch Co.	Milton Nelson	Pres.	2040 W. Longs Peak Longmont
Coal Ridge Ditch	Mildred Sarchet	Secy.	Rt. 2 Box 162 Ft. Lupton
Community Ditch	M. L. Sarchet	Pres.	10107 Melody Dr. North Glenn
Consolidated Lower Boulder Reserv. & Ditch Co.	Mrs. Ray Nelson	Secy.	Rt. 1 Box 210 Erie
Davidson Ditch & Reservoir Co.	Helen Dominico	Secy.	10315 Baseline Lafayette
Dry Creek No. 2 Ditch Co.	C. B. Beitelshes	Secy.	Rt. 1 Box 322 Boulder
East Boulder Ditch Co.	Public Serv. Co Of Colorado (Leonard Reichwein)	Pres	P.O. Box 840 Denver
Enterprise Irrig. Ditch Co.	"	"	"
Erie Coal Creek Ditch & Reservoir Co.	Dave Oscarson	Pres.	Rt. 1 Erie
Farmers Ditch Company	H. O. Dilsaver	Secy.	3016 Kalmia Ave. Boulder
Godding Daily & Plumb Ditch	Niels Jensen	Secy.	384 Main St. Longmont
Godding Ditch Co. Highland South Side	Niels Jensen	Secy.	Longmont Nat'l Banl Longmont
Goodhue Ditch & Reservoir Co.	Mrs. Gale Harmon	Secy.	Lafayette
Houck No. 2 Ditch Co.	Milton Nelson	Owner	2040 W. Longs Peak Longmont
Leggett Ditch & Reservoir C.	Niels Jensen	Secy.	Longmont Nat'l Banl Longmont
Green Ditch Company	Roger Fell	Secy.	7861 Valmont Dr. Boulder
Harden	City of Boulder	Part Owner	Boulder
Harris	K. Waremburg	Owner	Louisville
Houck No. 2 Ditch Co.	Milton Nelson	Owner	2040 W. Longs Peak Longmont
Howard Ditch Company	Bill Suittes	Secy.	65 Manhattan Dr. Boulder

WATER DISTRICT NO. 8

WATER DISTRICT NO. 6 (Continued)

Jones & Donnelly Ditch Co.	Harley Keeter Jr.	Secy	6379 Valmont Dr. Boulder
Kerr No. 1 & 2 Kinnear Ditch & Reservoir	Mrs. J. Mayhoffer M. L. Sarchet	Owner Pres.	Louisville 10107 Melody Dr. North Glenn
Last Chance Ditch Co.	City Westminister	Part Owner	Westminister
Lynner-Cottonwood Consolid- ated Ditch Co.	Walter Wise	Secy	11587 Jasper Rd. Canfield-Erie
Lower Boulder Ditch Co.	Margaret Nelson	Secy.	Rt. 1 Box 218 Erie
Martha M. Mathews	A. S. Bailey	Part Owner	Broomfield
Marshall Reservoir	M. L. Sarchet	Pres.	10107 Melody Dr. North Glenn
Marshallville Ditch Co.	Ewalt Anderson	Secy	Rt. 3 Box 325 Boulder
McGinn Ditch Company	Alice Clyncke	Secy	7124 Baseline Rd. Boulder
McKay Reservoir	M. L. Sarchet	Pres.	10107 Melody Dr. North Glenn
N. K. Smith & Tyler-Ditch	Max Serafina	Owner	Rt. 4 Longmont
New Anderson Ditch Company	Wm. Light	Pres.	City Hall Boulder
North Boulder Farmers Ditch Co.	John Reich	Secy	P.O. Box 227 Boulder
Original Cottonwood No. 2 Ditch Company	Albert Kolb	Secy	Rt. 3 Box 316 Boulder
Rural Ditch Company	Catherine C. Owen	Secy	1020 Emery St. Longmont
Silver Lake Ditch Co.	Everette Long	Secy	3240 Broadway Boulder
Schearer Ditch Company	L. W. Van Fleet Russ Hawkins	Owner Supt	Denver 3 So. Cherryvale Boulder
Smith & Emmons Ditch Co.	Ward Burrett	Secy	Rt. 4 Box 54 Longmont
Smith & Goss Ditch Co.	City of Boulder	Part Owner	Boulder
South Boulder Canon Ditch Co.	Joe Beauprez	Pres.	1042 No. 95th Lafayette
South Boulder & Bear Creek Ditch	Tim Shanahan	Pres.	Marshall
South Boulder & Coal Creek Ditch Co.	Ruth Bowes	Secy	9182 Dillon Rd. Louisville
Tom Delehand Ditch	Milton Nelson	Pres.	2040 W. Longs Peak Longmont
William C. Hake	Mrs. J. Mayhoffer	Owner	Louisville

VIII.

C. GROUNDWATER MANAGEMENT DISTRICTS

Although some consideration was given to forming management districts under the Basin Authority Bill adopted in 1969, no such districts were formed.

The ground water management districts in the non-tributary areas continue to function as they have in the past. These districts are shown in the following tabulation:

GROUND WATER MANAGEMENT DISTRICTS

NORTHERN HIGH PLAINS

Frenchman Management District	Ben Saunders	Mngr.	Holyoke
Sandhills Management District	Ben Saunders	Mngr.	
Central Yuma Management District	Ben Saunders	Mngr.	
W - Y Management District	Fred Wurtsmith	Secy.	Yuma . 220 South Main
Arikaree Management District	Fred Wrate	Secy.	Cope
Plains Management District	Cliff Hawthorne		Burlington 1454 Martin Ave.

KIOWA-BIJOU

North Kiowa-Bijou	Don McCleary	Attny.	Ft. Morgan
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LOST CREEK

George Bush			Keenesburg
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CAMP CREEK

IX.

A. WATER COMMISSIONER'S SUMMARY

W.D.	Irrigation Use Diversions AF	No. of Acres Irrigated	Ac. Ft. Per Acre	Industrial Use Diver- sions Ac.Ft.	Municipal Use Diver- sions Ac.Ft.
1	208,825	123,304	1.69	4,182	610
2	278,946	201,723	1.38	11,375	
3	238,563	281,700	.85		26,271
4	127,827	107,706	1.19		6,447
5	89,145	91,350	.98	160	
6	122,978	166,700	.74		11,415
7	102,926	51,250	2.01		1,368
8-80	37,228	29,078	1.25	29,072	108,957
9	16,990	9,830	1.73		
23	13,030	15,000	.89		
48	22,532	4,845	4.65		
49-65	4,817	6,521	.74		
64	178,802	159,269	1.12		
TOTALS	1,442,609	1,249,076	1.15	44,789	155,068

IX.

B. WATER COMMISSIONER'S SUMMARY

GAIN OR LOSS TO RIVER	W.D.	AMOUNT IN STORAGE ACRE FEET		
		11-1-73	5-1-74	10-31-74
- 413	1	31,878	133,257	32,291
+ 214	2	58,581	105,504	58,367
+ 43,490	3	217,713	286,467	174,223
+ 6,547	4	146,049	203,158	139,502
- 224	5	49,791	42,454	50,015
+ 31,761	6	83,157	80,328	51,396
+ 435	7	35,108	49,447	34,673
+ 20,178	8-80	101,719	111,752	81,541
- 720	9	6,205	9,464	6,925
+ 3,933	23	225,329	217,988	221,396
	48			
	49			
+ 18,748	64	73,764	122,624	55,016
	65			
+123,949 TOTALS		1,029,294	1,362,443	905,345

X. SUGGESTIONS AND RECOMMENDATIONS

A. PERSONNEL

The Rules and Regulations of the Colorado State Personnel System establish the criteria for computing the compensation of employees. Article 4 states that employees who either work all scheduled work days of the month or have a combination of work and paid leave for all scheduled work days shall be paid a full months salary. It further states that permanent part time employees will be paid on an hourly or daily prorata basis if they do not work all of the scheduled work days. Holidays are counted as work days for permanent full time employees and also for permanent part time employees if the part time employee works the scheduled working days immediately preceeding and following the holiday.

1. Water Commissioners and deputies customarily are on call for duty at all times regardless of the hour of the day or day of the week. While it is desirable to adhere to a resasonable schedule it is quite often impossible to do so and still accomplish the necessary administrative requirements.

As a result of the nature of the work and the unpredictability of time requirements, these employees often find it necessary to work more than eight hours a day and also on weekends and holidays. Likewise they may find it unnecessary or inadvisable to work a full eight hour day and on every scheduled work day, particularly the days immediately before and after a holiday.

Consequently the Division Engineer feels that if a part time water commissioner or deputy works the number of days in a month that is numerically equivalent to the number of scheduled work days with holidays considered, that employee should be given credit for a full months work regardless of the fact that he may have worked on weekends or holidays. This determination should be made on the basis of the time sheets submitted without the need of additional paperwork in the nature of letters, notices or forms.

2. Leave Slips. The Division believes the present requirements for full letter size forms in triplicate to be a nuisance and a waste of paper. The replaced single, small slip form was more desirable.

B. DATA REPORTING

1. The suspension of use of the opscan sheets for entering data into the computer is being considered for all current diversions and information. Division No. 1 would encourage the dropping of the opscan method and substituting a key punch operation. If the key punching could be done centrally from the semimonthly reports submitted by the various water commissioners, the field personnel would be correspondingly relieved of that demand on their

time and could devote more time and effort to their primary task of water administration. This Division would further recommend that keypunching be done at Greeley, either by installation of a keypunch in the Division office or by contract at the University of Northern Colorado. If a contract is necessary, it would be necessary to develop a budget for data service.

The big advantage of a central division keypunch and print out would be to make diversion data in computer form available with a shorter time lag.

Some difficulties have been experienced this year in retrieving diversion information to incorporate in this report. Since the current year's data is much more desirable than presenting year old information, anything done to speed up final print out would be helpful. Access to the data bank through a remote terminal in the Division office has been discussed previously. Such a convenience would be most desirable.

C. WELLS

1. The inclusion of wells into the administrative system is a reality now with the acceptance of the Rules and Regulations. It is expected that most wells will be operated under some plan of augmentation. With the staff available such administration is necessarily on a group basis, using generalized calculations for annual pumpage and depletions. More accurate information could be generated with more manpower. For instance, annual well production could be approximated by records of power used. If the regular part time deputy water commissioners could be retained on a full time basis they could be used to gather the power consumption information among other duties on off season periods.

Many of the well construction permits issued by the State Engineer include conditions upon the use of the water, applications to the Water Court, meters, volume of pumping and physical features of the well. To properly enforce compliance with the conditions an extended field inspection program is necessary. Again, off irrigation season employment for the part time employees would promote compliance with the approved conditions.

The periodic tabulations of well permits might carry coded information of conditions made a part of the permits to make the information more accessible to field personnel.

D. WATER COURT APPEARANCES

Objections have been raised in the Water Court to the participation of representatives of the Division of Water Resources in hearings on applications before the Court when no formal objections or notice of appearance have been filed as provided by statute. With one exception the voluntary appearance and participation by the Division Engineer or a representative of his office has raised no unfavorable comment but, to the contrary, has been welcomed.

The Division Engineer feels that the assistance of counsel and other engineers is most desirable in many hearings so steps need to be taken to allow their involvement without question. For that reason the Division Engineer should analyze all applications at the earliest possible date, determine those cases on which he would like assistance and then inform counsel and the engineering section of his concerns so they might enter an appearance in a timely manner and develop such testimony as necessary. The appearances could be withdrawn later if such action appeared to be appropriate.

WATER NEWS

November 1, 1973

Division No. 1, W. G. Wilkinson, Division Engineer

Precipitation for the past month has been well above normal, causing some problems with harvest. The areas of greatest concern have been Water Districts 1 and 64 which have been plagued by wet fields. Hail in the Fort Morgan-Brush area, September 25, 1973, and heavy snow extending from near Kersey to the state line on October 11, 1973, have caused heavy crop damage and harvest delay.

A tip of our hats to staff members whose diligent efforts in recognizing and coping with serious reservoir situations were much appreciated.

Following heavy precipitation on September 8, 1973, Bob Samples found that the normally dry Rosener Reservoir in San Arroya Creek contained several thousand acre-feet of water behind closed outlet gates, the controls of which were in a water filled pit. Don Brazelton, working under water with a pipe wrench, managed to get one gate open enough to afford relief to the reservoir.

Lloyd Blewitt and Ted Bell took active parts in the emergency at Horseshoe Reservoir. A disastrous failure of the Horseshoe Reservoir Dam, northeast of Loveland, was narrowly averted on October 3, 1973, by the timely efforts of officials and volunteer help. A major leak near an outlet structure was discovered shortly after noon on that date and remedial action started immediately. Trucks and equipment from Larimer County, the State Highway Department, private contractors, Loveland Fire Department, and neighbors operating under the able direction of Norman Wilson, superintendent, and company officials worked throughout the afternoon and night to effectively control the flow of water through the breach in the dam and the partially destroyed outlet structure. Car bodies, rock, heavy equipment tires, mattresses and baled hay were all used effectively in the emergency. Maximum outflow was estimated at approximately 600-800 cfs before it was brought under control. Only through the fortuitous combination of the readily available equipment, materials and willing volunteers was complete loss of the reservoir averted.

A Division staff meeting was held October 10, 1973 at the Kodak Plant near Windsor. Following the business session, Kodak conducted a most interesting tour through their beautifully designed complex. Our thanks to Kodak for their gracious hospitality in providing accommodations for the meeting and tour.

We are happy to have Bob Cooper dividing his time between the Greeley and Denver hydrographic offices. Bob lives in Fort Lupton so it's handy to go either way.

Division 1 personnel on the move:

Paul Meehl and his family took advantage of annual leave in mid-October to visit relatives and get in some sailing near Corpus Christi, Texas.

November 1, 1973

-2-

Lloyd and Betty Blewitt are celebrating the end of the irrigation year with a quick trip to California.

Ted Bell and family took a few days off to visit son, Orlyn and family in Durango. Their return trip was complicated by a snow storm.

Don Brazelton was confined to several days by what his doctor diagnosed as the mumps. Don says he wishes he was as young as the illness might suggest.

Jim Clark returned to work October 1, 1973, after spending an enjoyable month in Europe. He entertained us during lunch hour recently by showing pictures taken on his trip.

Division No. 1, W. G. Wilkinson, Division Engineer

Thanksgiving Day has come and gone. We give thanks for a bountiful supply on our banquet tables. We are looking forward to another feast tonight on the occasion of our Annual Dinner for the Division 1 Water Officials Association.

Greeley office personnel are busily working on the annual report in hopes of completing it by December 12th.

A building to house our stream gaging equipment on the South Platte at Kersey has been designed. Solicitations for bids were sent out on November 16th with opening of the bids scheduled for December 3rd.

The hearing of protests to the State Engineer's proposed Rules and Regulations governing the use, control and protection of surface and ground water rights located in the South Platte River and its tributaries was adjourned on November 6 until December 11. At that time Judge Carpenter will hear new proposed Rules and Regulations which will be a result of all Protestants and the State Engineer working together. It is hoped that rules we can all live with will be forged by this group of lawyers and engineers.

The Ground Water Appropriators of the South Platte (GASP) held their annual meeting on November 19 from 1 - 5 p.m. The turnout for this meeting was quite good.

Don Brazelton and Ben Saunders have spent several days in the field during the last two months checking compliance on wells permitted for household use only. Happily, they found very few violations.

Thornton is negotiating with the Farmers Reservoir and Irrigation Company for purchase of Standley Reservoir. According to a recent news release, Thornton made an offer of 9.3 million dollars. If this offer is not accepted, we understand that Thornton plans to initiate condemnation proceedings.

Eric Wendt, Secretary Manager of the Lower South Platte Water Conservancy District, died unexpectedly on November 25. Mr. Wendt was a dedicated and conscientious official working for the eventual construction of the Narrows Reservoir. We extend our sympathy to the Wendt family in their loss.

January 1, 1974

Division No. 1, W. G. Wilkinson, Division Engineer

The Division 1 Water Officials Association Annual Dinner at Lucerne was well attended and a good time was had by all. Stix Palmer was in charge of entertainment and put on a very good slide show of division employees at work and play (which way to Fairplay?).

The annual report was completed on schedule and turned in to the State Office on December 13th at the Division Engineers Meeting. The Denver staff again presented a good meeting. This year the largest amount of time was devoted to the computer and the ways in which it is beginning to serve us. We observed the State Engineer's Computer Terminal and were told that information stored in the Water Data Bank will probably be more easily available to water users soon through satellite terminals in the division engineer's offices.

The weather remained very dry until December 19 when considerable snow fell on the Eastern slope. It is hoped that much more will follow (it did!), otherwise the prospect of a dry year, together with the possibility of well regulation, could make things a little tense in this part of the state.

The dam inspections for the Corps of Engineers are progressing nicely. These inspections are being made by State employees under a contract with the Corps as a part of the Federal Dams Safety Act.

The annual meeting of most canal and reservoir companies are held during the winter months. Upon the request of company officials, the local water commissioners or other division staff members attend and participate in many such meetings. We find this helpful as a means of exchanging ideas and information.

We have heard much in recent years relative to adoption of the metric system. We suddenly realized that progress beyond the conversation stage had been made when we received a new map from the Geological Survey. The map, which reflected environmental geologic and hydrologic studies, was keyed in metric units. How soon will we be discussing water in terms of cubic meters per second or hectare meters?

Bruce Smith, Deputy Water Commissioner in District 3, left for Europe on November 26th and will return about March 1. Hope you are having a good time, Bruce.

A joyful holiday deason was enjoyed by other members of the staff.

WATER NEWS

February 1, 1974

Division No. 1, W. G. Wilkinson, Division Engineer

The day of January 15th was spent in informal discussion with Judge Carpenter and all parties protesting the State Engineer's Rules and Regulations. It is felt that one more day of discussion will be sufficient to complete hammering out an agreement that will be satisfactory to all parties involved. February 7th is set as that day of discussion in the Water Court.

A meeting of the Eight County Flood Control Commission in Greeley on January 10th was told by Congressman James P. Johnson that federal funds for flood control work in this area are not in sight. It was indicated that the year 1990 would probably be the earliest funds for projects could be expected. This means that any funding and help received must come from the state or local level.

An unofficial report as of the 1st of January indicates that Gramby Reservoir will spill this year. This is because of the large amount of snow already in place above CBT project facilities on the western slope. Another factor increasing the chances of a spill is the large carryover storage in eastern slope reservoirs, making it impossible to bring much water over.

Today is the first day for all water commissioners in Division 1 to begin recording diversions and storage figures for entry into the data bank. We hope that we have learned enough over the past two years to keep the information flowing smoothly.

On January 16th, Bob Cooper spent most of the afternoon and part of the evening trying to get his truck out of a hole in Waterton Canyon above Denver. He ended up walking about eight miles for help. This made a fairly full day after chopping ice for approximately four hours to start with.

April 1. 1974

Division No. 1. W. G. Wilkinson, Division Engineer

The Rules and Regulations Governing the Use, Control and Protection of Surface and Ground Water Rights Located in the South Platte River and its Tributaries become effective on Saturday, March 16th. It is felt that the signing of the accord by the various parties protesting the Rules and Regulations is a real milestone in Colorado Water Law.

Repairs on the Lower Latham Reservoir Dam are nearing completion at this time. It is hoped that storage can begin by the Middle of April

The March 1 snow report indicated that we are still above normal in most areas with the extremes being 117 percent of normal on the Cache la Poudre and 82 percent of normal on the South Platte. Fort Morgan had 14 inches of snow on March 10, which should help the April 1st soil moisture report. Storage in area reservoirs is 104 percent of normal and will provide some supplemental water.

We would like to welcome Becky Holloway to the staff. She replaced Beverly Thomas who left us on March 15th.

Dugan Wilkinson spent a week in Southeast Nebraska recently and as of the date of this newsletter he is in Seattle, Washington, attending a workshop sponsored yearly by the Association of Western State Engineers.

WATER NEWS

May 1, 1974

Division No. 1, W. G. Wilkinson, Division Engineer

In the early hours of Saturday, April 13th, a storm moved into Division 1 dumping a large amount of high moisture content snow. This snow resulted in a flood down Lost Creek on Tuesday, April 16th, and caused considerable property damage in the Prospect Valley area.

The Division Staff Meeting was held at Farm Fare Cafeteria in Greeley on April 18th. In addition to Division 1 staff, we had Bill Mattern, Reiner Haubold, Don Moore and Will Burt in attendance. The main subject covered in the meeting was implementation of the Rules and Regulations. All reports we have at the present time indicate a high degree of compliance with the well regulations, that is, most people are joining organizations that will protect their wells by delivering replacement water to the stream at times of call. We would like to emphasize that wells without a plan will be regulated this year whether there is a call on the river or not.

Potential water supply remains good at this time, with snowpack figures slightly above the 15 year average.

Concrete work on Lower Latham Reservoir is completed and water is now being stored.

We would like to express our sympathy to Bill Mattern and family on the passing of his mother.

WATER NEWS

June 1, 1974

Division No. 1. W. G. Wilkinson, Division Engineer

The new Kersey Bubble Gage, complete with 4 foot by 6 foot concrete blockhouse is now in operation on the South Platte. The next station to be built will be the replacement for the one lost at Fort Lupton during the 1973 flood.

Records reveal that the month of May through the 22nd is the driest in fifty years for this area; this has been accompanied by strong winds doing considerable drying of crop lands. In addition to these two factors, we can add the cool weather at the higher elevations that has kept the snowpack pretty much in place. This all adds up to a tight water situation.

Our Water Commissioners have done quite well entering diversion records in the Water Data Bank. At this point we are pretty much up-to-date with all diversions occurring since November 1.

We were sorry to lose the services of Ben Saunders recently. He left our employment to accept a position as Manager of the Frenchman, Sandhill and Central Yuma Ground Water Management Districts. His absence leaves a vacancy we hope to fill soon. Good luck, Ben, with your new job.

July 1, 1974

Division No. 1, W. G. Wilkinson, Division Engineer

The big news for this month was the crop saving rain of June 8th. Precipitation for that day varied from 1.5 to 3.5 inches around the Division. This resulted in a peak of 7700 cfs at Kersey the evening of June 8th. The amazing thing about this large flow was that only approximately 1000 cfs passed the Julesburg Station about midnight June 12th. This quick utilization of the water was made possible by storing a large portion in Riverside, Jackson, Prewitt, North Sterling and Jumbo Reservoirs. The rain breathed new life into many thousands of acres of crops that had been given up as lost and will increase the yield on others considerably.

The Fort Lupton Gaging Station, a carbon copy of the new Kersey Station, was installed in record time by the "Greeley Sandbag Crew" and is now operational.

We would like to welcome several new deputy water commissioners. Dale Anderson will fill Ernie Ward's old position, with Ernie moving up to Commissioner in District 6. Jack Canterbury replaces Ron Roberts in District 23 and Bill Stewart will be filling in for John Noonan until John gets to feeling better. We would also like to welcome George Sievers back for another summer as an Engineering Technician.

Tom Platt's retirement party at the Rhinelander Restaurant in Longmont was a very pleasant occasion. Tom was presented with a Certificate of Appreciation signed by the Governor for over 43 years of outstanding service to the State of Colorado. He also received several nice gifts. You will be very much missed around here Tom, but we wish you and Cleo many happy years of retirement.

We hope to see John Noonan and Larry Young, who have both spent a few days in the hospital, operating under a full head of steam again soon.

August 1, 1974

Division No. 1, W. G. Wilkinson, Division Engineer

The water supply situation has improved some in the last month even though at present our precipitation remains at about 70 percent of normal in the northern part of the Division.

On July 12th, the Northern Colorado Water Conservancy District increased their allotment to 100 percent. This means that for each unit of Colorado-Big Thompson held, one acre foot is available for delivery.

We are continuing to check for wells pumping in violation to the Rules and Regulations. At present the owners of these wells are being issued orders to stop pumping immediately. Non-compliance results in violators being cited immediately into Water Court. Results of recent court action have been set forth in other sections of this newsletter.

We are having problems obtaining copies of the July tabulation due to printing difficulties, however, we expect to have copies available for mailing early in August.

Congratulations to the recent newlyweds; Glenna Bell, daughter of Ted Bell was married on June 29th and Pete Wankelman, son of Dorothy, was married on June 22nd.

Congratulation are also in order for George Sievers who won his flight in a golf tournament recently held in Montrose.

If anyone sees a fish wearing glasses in the Cache la Poudre River, please notify Ted Bell as he lost a pair there during a recent dunking.

WATER NEWS

September 1, 1974

Division No. 1, W. G. Wilkinson, Division Engineer

The end of the irrigation season is approaching rapidly. The water supply has remained adequate for most of the season in spite of precipitation being below average all year. In recent weeks the supply was bolstered by well replacement water being put in the river. This amounted to as much as 86 cfs at times.

We would like to extend our sympathy to Margaret Styduhar on the death of her husband, Rudy, and to Bill Gleason on the death of his sister.

We welcome Rachel Harman to the Greeley staff as a secretary. She replaces Becky Holloway who transferred to the University of Northern Colorado's secretarial staff.

Wedding bells have rung again. Congratulations to Eric Wilkinson who tied the knot on August 10th and to Connie Samples who was married August 17th.

George Sievers of the Greeley staff won the CAPE Golf Tournament. Congratulations, George.

WATER NEWS

OCTOBER 10, 1974

Division No. 1, W. G. Wilkinson, Division Engineer

The September 10th deadline for objections to the July abandonment tabulation brought a flood of mail to the door. We are now attempting to evaluate this mail which included many requests to correct errors in the tabulation not related to the abandonment (see the Legal Section for current information on the status of the tabulation).

There hasn't been a call on the river below Denver since September 6th. This has taken some of the pressure off the administration staff and provided time to do a little of the paper work that continues to pile up.

Amy Michele Liesman, daughter of Ray and Wanda, arrived at Weld County Hospital on August 26th. She weighed in at 6 lbs 13 1/2 oz. and was welcomed home by her big sister, Natalie, a couple of days later.

Bob Cooper, of our staff, surprised his wife, Dee, on her return from a trip to France with a new 2.4 acre ranch in the Greeley area.

On September 29th, the St. Vrain at Lyons was 27 cfs, Coal Creek at Plainview was 0.50 cfs, and Cache La Poudre at Greeley was 75 cfs.

XI.

Stockholders told of Standley suit plans

B.

By LYNN HEINZE
Tribune Staff Writer 11-7-74

FORT LUPTON — For the second year in a row, the stockholders of the Farmers Irrigation and Reservoir Company attended an annual meeting to discuss the possible loss of one of their reservoirs.

Last year, stockholders were told that the cities of Thornton and Westminster had filed land-mark condemnation actions to take the water and storage rights in the Standley Reservoir.

The Standley supplies irrigation water to more than 20,000 acres of land, most of it within Weld County.

More than 250 stockholders, including representatives of Thornton and Westminster, filled the meeting room of the Fort Lupton city hall to conduct business and talk about the suits.

According to chairman of the board Adolf Bohlender the meeting was designed to be informative, "to let our stockholders know what we've done during the past year.

"One thing we've noticed over the past years is that our stock is sold to cities, but we've never yet seen it returned to agriculture through a sale from the cities to a farmer," Bohlender said.

"I just don't think the people in the cities fully understand the impact on the agricultural areas that the loss of this water would have," he added.

One stockholder, Frank Suckla of Fort Lupton, put it another way: "People in the cities are used to getting cheap food and cheap water. They don't seem to realize that water is a valuable commodity and that they should have to pay for it.

"And they don't realize that by taking this water, which supports the production of crops on nearly 20,000 acres, that their supplies of foodstuffs will also be affected.

"True, these 20,000 acres may have little immediate effect, but if the condemnation is successful, other reservoirs and other water rights will go to the cities. Agriculture will suffer, but in the long run, it will be the people of the cities who will stand to lose the most," Suckla said.

"It seems to me that the production of food for a hungry world is far more

important than the cultivation of trees, shrubs and golf courses," Suckla concluded.

Ned Phye, consultant to the Farmers Company, said that the company has no choice but to resist the involuntary taking of water.

"The net result would be to put the farmer out of business. And that's something I think the city officials didn't really realize until recently.

"They must start to understand our situation and how it will affect them, before we can move to meaningful agreements concerning the future of the water in the Standley.

"But when that understanding comes, there are several avenues open to the cities and the company, where the water can be used to our mutual benefit.

"If we can all work together, if the cities begin to understand the results of their actions and recognize the importance of agricultural water and its development, if they understand that to take the water would mean putting these farmers out of business, then other ways can be explored," Phye said.

Meanwhile, Thornton city manager Jim Castrodale said the city has explored "every possible alternative. We have taken this action because we have no other choice.

"We have spent thousands of dollars researching other alternatives. We have tried to negotiate with the Denver Water Board for the past four years," Castrodale said.

But Thornton is ready to talk about joint use of the water, according to Castrodale. "We hope the board (of the Farmers Company) will adopt a posture of discussion of our mutual problems. We have attempted to develop an environment in which meaningful negotiations take place.

"But there was no indication, until a couple of weeks ago, that there was a suitable environment for negotiation. So we have continued to press our suit for the condemnation of the water and storage rights in the Standley," Castrodale said.

Castrodale listed three alternatives which the cities and the company could explore during negotiation. He said the first would be an investigation of the potential enlargement of the Standley, either through excavation or the enlargement of the dam structure.

The second alternative, according to Castrodale, would be a joint study of higher and better uses of the water available in the system. He noted that the company is currently experiencing a 30 to 40 per cent ditch loss, which could be reduced through ditch lining and covering.

But the study would also have to explore other avenues of water conservation as well, Castrodale said. "We wouldn't be creating new water, just conserving the water we have."

The final alternative would be the joint development of further water resources.

"But we will have to have the proper environment for negotiation before we can look at any of these possibilities. And it will have to be the board of directors (of Farmers) who will have to assume a posture of discussion before we can continue" Castrodale concluded.

Standley suit key to water law future

By LYNN HEINZE

Tribune Staff Writer 12-11-74

"The cities made commitments when they agreed to annex large quantities of land which I consider to be irresponsible actions.

"The promised to supply water to the developments and now are unable to meet those commitments, so they find themselves involved in a condemnation suit."

The speaker was water consultant Ned Phye Jr., a former city manager of Westminster and now a representative of the Farmers Irrigation and Reservoir Co.

Phye spoke to the semi-annual meeting of the Weld County Livestock Association Thursday night, telling the group, "Water is the issue. The outcome of the current condemnation proceedings will have a far-reaching effect on every water owner and farmer dependent on irrigation water in the state."

Phye was referring to the suits filed by the cities of Thornton and Westminster against the farmer's irrigation company to obtain the rights to the water stored in the Standley Reservoir.

"Water is the most limited natural resource in the state. Water is power. It can control the growth of this area and the agricultural output of the state.

"The cities involved in this suit are claiming that Article 16 Section 6 of the state's constitution gives the prior right to the cities for the use of water as a domestic use.

"What they are saying, in effect, is that the farmers and ranchers who developed the water resources on the eastern slope were only borrowing the water until the cities needed it," Phye charged.

"This is the first time in the history of the constitution of Colorado that this particular section will be tested.

"If the cities should win the right to condemn the water rights, the effect will reach down to every farmer who uses water for the production of crops," Phye said.

"In fact, the ramifications of the action would reach all water users. If the Supreme Court upholds the right to condemn, no one would feel comfortable about their water rights," Phye said.

Phye said the reason for the suit was that the cities approved annexations faster than they could provide services. "Thornton, for example, has annexed more than 5,000 acres of land in the past five years.

"They were depending on the Denver Water Board to help them meet their commitments of water.

"But the Denver Water Board was stopped from further diversions of water from the west slope. And even though the board has a 42-inch water line running right through Thornton, it told the city to find water somewhere else.

"It's all part of the political games the cities in the metro area play with each other.

"But the trend is clear. If Thornton can get to the big one (Farmer's) then they and other cities will go after other reservoirs up north. And they will continue to reach into Weld County until they get the water they think they need," Phye said.

"People in the metro area don't realize that Weld is the second highest agricultural producer in the nation. They don't consider the necessity for the production of food, or they choose to ignore the fact, as they reach out to take your water," Phye charged.

"And the people don't understand 'ownership.' The average resident in the metro area will only live in a house for five years before he moves on. He doesn't understand what it means to have passed 'ownership' from generation to generation.

"The elected officials of these areas don't know about or understand water. All they know is that if you turn a tap, water will flow into the sink. And that is the total limit of their understanding," Phye said.

"They don't seem to understand that the taking of the water in the Standley will dry up more than 20,000 acres in Weld County.

"It is said that you can't fight city hall. And it is true in some respects. Because the city strategy is to wear down its opponents, divide them and then get a deal on the cities' terms.

"I don't think that will happen in this case. But the members of the farmer's need the support of every water user in the county. They will have a hard time fighting a city which has already spent \$250,000 for legal expenses and has more money in its coffers," Phye said.

"They (Farmers Irrigation and Reservoir Co.) can play the waiting game, but they need support. And they deserve the support since they are fighting for you as well as themselves.

"You'll be hearing a lot more about this case in the near future," Phye said.

Condemnation of irrigation reservoir could have far-reaching effect here

By LYNN HEINZE 12-17
Tribune Staff Writer - 73

A condemnation proceeding which may have far-reaching effects on the future of agricultural water rights in this state was filed recently.

The condemnation is sought by the city of Thornton against the Farmers Reservoir and Irrigation Company, based in Northglenn.

The city is asking the company to relinquish all water and storage rights in Standley Lake, the reservoir structure and all canals and other delivery structures now owned by the company used in conjunction with Standley Lake.

The Standley Lake structure was first developed by the company in 1912 to serve farmers in Adams and Weld counties. With a total storage capacity of about 42,000 acre feet, the company owns rights to about 30,000 acre feet.

The city of Westminster owns storage rights to the remaining 12,000 acre feet. The Thornton suit does not include these storage rights.

The company serves about 200 farmers with more than 20,000 acres of agricultural land in Adams and Weld with water from the Standley. Nearly two-thirds of the farms are in Weld County.

The company also owns rights in two other reservoirs: Barr Lake in Adams and the Milton Reservoir in Weld. These reservoirs are located "down-stream" from the Standley and cannot be used to serve those farmers served by the Standley.

The city's interest in the water rights first came to the attention of the irrigation company on Oct. 3, when it received a purchase offer from the city. The city offered the company \$9.3 million for the package, but only gave the company two weeks to contact its shareholders and make a decision.

According to the company's president, Melvel Sarchett, "We just didn't feel that was enough time to make a decision and get the approval of the stockholders. We told the city officials this.

"Two days later, on Oct. 5, the city filed its first condemnation petition," Sarchett said. "Then the city filed its present condemnation petition two days after the end of the offer period. We had no idea that the city was interested in our water system before they presented us that offer."

In an official release, the city stated that time would be allowed for the farmers to find

other water sources to relieve "the economic impact" on the area.

But according to Sarchett, "We just don't see any possibility of replacing the water rights."

The only other option which would be open to the farmers along the Bull Canal and its laterals would be to go back to non-irrigated use. The major problem here is a drop in production and a change in the production capabilities of the land under non-irrigated conditions.

Many soil experts claim that land once irrigated will not produce after the water is no longer available. The reason given for the condition is the extensive nature of irrigated farming.

Sarchett thinks the change could be made, if necessary, but that producers would stand to lose because of production differences. "It can be done, but the land would not produce for several years.

"The main differences would be in productivity and the crops which could be produced. Right now, most of the land is in sugar beets, corn, alfalfa, and small grains.

"Some of the farms are set up to be self-sufficient dairy and beef feeding operations. The units are just too small to continue to operate for these purposes if the water is not available. They simply are not set up with the acreage or the equipment to produce efficiently on a dry-land basis," Sarchett said.

"They're just not big enough to be practice or profitable," Sarchett said.

The Standley rights are generally considered to be good irrigation rights for agricultural purposes, according to Sarchett. "We don't consider the \$9.3 million offer

Thornton made to be a realistic figure."

But the more important consideration is the possible effect of agricultural water rights in the state.

"This type of action is without precedent in this state," Sarchett said. "If it should be successful, it would place all of Colorado agricultural water rights in jeopardy.

"I understand that similar actions have been tried in other states, but there were not clear-cut decisions either way," Sarchett concluded.

Farmers Reservoir answers water suit

TRIGUNE 2-25-74

The Farmers Reservoir and Irrigation Company filed 40 pages of answers in Golden District Court last week to the condemnation actions filed by the cities of Thornton and Westminster.

The company was named as the defendant in two separate actions brought in October and November by the two cities.

Both cities are seeking the water supply and storage rights in the Standley Lake reservoir in northern Jefferson County.

All rights to the water in the lake and all storage rights, the exception of 12,000 acre feet presently owned by Westminster, are owned by the irrigation cooperative.

The dispute began Oct. 5, when the city of Thornton filed its original condemnation action claiming that it could not locate other sources of water to supply the city's projected needs.

Then Westminster filed its own action Nov. 16 stating that it had to "protect its position" in the Standley in view of the Thornton suit.

Farmers Reservoir, through its attorney John Akolt, filed its reply to the original Thornton action last week. The company requested that the court determine which city's proceeding had the prior right.

In all, the Farmers listed 22 answers and objections to the Thornton condemnation.

The answer noted that the water rights in the Standley were decreed for agricultural use in irrigation and been and are being used to irrigate over 20,000 acres in Weld, Adams, Boulder and Jefferson counties.

If Thornton should succeed in the

condemnation proceeding, Farmers noted, the land served by the reservoir "will become dry land."

Other arguments cited by Farmers for dismissal of the Thornton proceedings were:

—Thornton failed to name the stockholders in the suit or to negotiate with the stockholders for the purchase of the property before filing the suit. The reply stated that the stockholders are indispensable parties since they are the real owners of the property Thornton is seeking to condemn.

—Thornton failed to name Weld, Adams,

Boulder and Jefferson counties in the suit and those counties are indispensable parties since they will lose their tax base when the 20,000 acres becomes dryland.

—Thornton is seeking to condemn water for use outside the city limits, but Thornton has now power under the constitution to condemn property outside the city limits, the reply said.

—"No exiency exists" and contrary to Thornton's contention that no other water rights are available, the answer contends that "upon information and belief" other rights are available to the city.

—Since the water in Farmers is devoted to public use, it is not subject to condemnation for public use.

—Thornton failed to make any serious attempt to agree upon a price for the property or to negotiate in good faith before the condemnation action was brought, as required by law.

Akolt failed a separate motion along with the answer requesting the entire case be moved from the Golden District Court to the Weld County District Court noting that the majority of the water rights in question lie in Weld.

Farmers Reservoir vows to fight⁹⁷ condemnation proceeding

By LYNN HEINZE
Tribune Staff Writer 11-7-74

"The problem in most of these cities is that the people have no real knowledge of water. In fact, their knowledge is generally limited to turning the faucet.

"Now, I can say that because I've been there," Ned Phye, former city manager of Westminster and consultant to the Farmers Reservoir and Irrigation Company, said in an interview Wednesday.

A little more than a year ago, the cities of Thornton and Westminster filed separate condemnation suits against the Farmers Company, seeking the purchase of the Standley Reservoir and other facilities.

And during the last year, the board of directors, its attorneys and Phye have worked to defend the position of the company that the water of the Standley is vested in the farmer-stockholders and the loss of that water would cause irreparable damage to the agricultural economy in the areas served by the company.

"I think what's happened is that most of the people who live out here migrated here from the midwest and now more and more are from the east. They're used to going out and digging a well 30 feet deep and getting all the water they need. Water was never a problem for the people in these areas. If water was a problem, it was because there was too much and you had flooding.

"So these people come out here and are the ones who eventually wind up on councils. They're the ones who become decision-makers and they don't know anything about water. They don't recognize that this is a semi-arid climate.

"They don't recognize that if it hadn't been for the development of these water resources 75 to 100 years ago, this area would still be dry. They don't realize the foresight and the amount of work that went in to develop this irrigation water.

"Nor do they recognize that for the farmer out there, water is his way of life. It's the basis of his business. You can't farm on a year to year basis. They just don't understand that.

"There is little understanding on the part of city officials as to the importance

and the impact of water on agricultural users.

"They may be honest and sincere, but they're ignorant. They're not necessarily dumb, but they're totally ignorant. They say, well hell, we'll get this water and they'll get some money to go out and buy some more water.

"They don't understand that that's a hell of a lot easier said than done. They don't understand the delivery of water. They really and honestly don't think in terms of the impact," Phye said.

Phye said that the city of Thornton has taken the position that it should have the water in the Standley under the rights set out in the constitution which says that the domestic user will have priority over the agricultural user.

Quoting from a release from the city of Thornton, "The farmer, in acquiring water rights for irrigation purposes, has acquired those rights subject to the rights of the cities and towns to acquire this water for domestic and municipal purposes when necessary . . ."

Thornton bases its condemnation action on Article 16, Section 6 of Colorado's constitution. "There has never been a condemnation suit of this kind. And the interpretation of what that section means has never been handed down. It will obviously be a landmark case.

"Here is a state that has been in existence for 100 years and that's one section of the constitution that's never been tried. And there's a reason for that: it will have far-reaching consequences state-wide," Phye said.

But the reason the city of Thornton has decided to test that section of the constitution is because, in Phye's words, "they have their backs against the wall."

Phye said that the cities of Thornton and Northglenn have been engaged in a running battle for several years. He said when the city of Northglenn was an unincorporated area, Thornton felt it would someday become part of that city. Thornton provided all utilities to Northglenn and it seemed like a natural trend.

But then Northglenn incorporated and the city of Thornton moved quickly to annex all of the area around Northglenn in an effort to cut off its growth.

"Well it did that. And in a period of about three years, Thornton annexed about 20 square miles of land. And in annexing the land, it had to make commitments to provide water, sewer and other utilities to the land owners.

"But now they don't have the resources to draw on to meet those needs. And worse yet is the fact that the city has no site, other than the Standley, for the location of a reservoir. And the reservoir has about equal value to the water rights in this area," Phye said.

Phye said the city then "just turned around and decided to get the water from the Standley. So Farmers is caught in the middle."

Phye said he also expects the suburban areas to have more water problems in the future, especially since the adoption of the so-called "Poundstone Amendment" which was passed by the people Tuesday.

"Now that the counties surrounding Denver have cut off development, for all practical purposes, the Denver Water Board won't continue to supply the needs of those communities.

"And the only logical place to look for water is north, to the irrigation canals and reservoirs of that area," Phye said.

The board of directors of the company feel that they are caught up in city cross-currents. Chairman Adolf Bohlander summarized, "Our feeling is that we, as farmers, like to stay home in peace and quiet just doing our job of producing food.

"But we've been imposed on by this condemnation suit. It is something we can't run from and it has created a lot of extra time demand and expense. We are going to face this thing head

on and we hope that we can come to some satisfactory agreement soon. But we can't run from it. One way that the water in the Standley could serve the mutual interests of the cities and the agricultural areas

"We've had quite a lot of interest expressed by other ditch companies and the out-come of this action will pertain to every ditch company in northern Colorado. would be through the use of water saving devices and the possible enlargement of the reservoir itself, according to Phye. He said that three alternatives could be explored.

"We are open and will accept any help from any other ditch company or individuals in this matter," Bohlander said. But it is apparent that the company, on advice from its attorneys, doesn't want other companies named in the suit. The first would be the enlargement of the reservoir. Another would be the development of other water resources on a collective basis and covered canal systems to eliminate water loss through transpiration and evaporation.

Attorney Robert Dick said that the nature of the suit is "so complicated and so cumbersome" that the addition of other groups in the suit would not be advantageous. He did say that any companies or individuals who want to appear as "friends of the court" during the action, will be welcome.

The only hearing set for the action concerns a decision on one of the objections filed by the company attorneys. The objection is one of more than 20 which will have to be answered prior to action on the condemnation suit itself, according to Dick.

"What the board has always considered is the soundness of negotiations as distinguished from litigation. To the extent that litigation is required, the board is adamant in its position to fight," Dick noted.

The board is open to the consideration of mutual water use, however, "when the cities appear to be acting in good faith."

According to director Vic Jacobucci, the loss of the Standley would affect directly the irrigation of more than 16,000 acres of land in Adams and Weld counties and indirectly affect more than 40,000 acres in those counties.

He said the agricultural production, economy and county tax structure would be adversely affected by the loss of the water.

"But we can't explore these possibilities until the towns start acting in good faith and make an honest effort to seek alternatives.

"The old saying that you can't fight city hall is true in many respects. After all, they have a council that will meet on a moments notice, and a full staff of attorneys and engineers who can all work on the project. "And the city can usually just out-wait you. But I don't think that will be the situation here. Farmers is determined to fight this thing out," Phye concluded.

Rules for water enforcement by engineer amended in decree ⁹⁹

(Editor's note: This is the third in a series of articles dealing with the stipulation and decree issued in District I Water Court Friday concerning the regulation ground water diversions in the South Platte basin.)

By LYNN HEINZE
Tribune Staff Writer

Included in the decree issued in District I Water Court Friday were the amended rules and regulations of the state engineer.

The amended regulations are part of the decree and were agreed to by the stipulation of the parties involved in the consolidated civil actions.

The regulations went into effect on Saturday.

The amended rules are similar in some respects to those originally issued in November, 1972, which were slated to go into effect in February of last year. The implementation of those rules was temporarily enjoined pending the outcome of the civil action decided Friday.

Underground water is defined in the regulations according to statute (148-21-3(4)) as "the unconsolidated alluvial aquifer . . . and all other waters hydraulically connected thereto which can influence the rate or direction of movement of water in that alluvial aquifer or natural stream."

The rules don't apply to wells used as domestic or livestock wells, nor do they apply to designated ground water or other wells exempted from administration by the state engineer by court decree or statute.

For those wells which do fall under the jurisdiction of the state engineer, a schedule of continuous curtailment went into effect with the issuance of the decree.

The shut-down was ordered to provide for "a reasonable lessening of material injury to senior appropriators."

Under the terms of the regulations, wells are to curtail pumping five-sevenths of the time this year. Pumps will be permitted to operate on every Monday and Tuesday during the year, according to the regulations.

For 1975, the wells will have to be shut

down six-sevenths of the time, with pumping permitted on each Monday. Then, the wells will be totally curtailed in 1976 and the years following.

There is some flexibility for the well owner as to the actual days of well operation, provided "the senior appropriators are not materially injured," the regulations state.

But the well owner can operate his wells continuously under the regulations if he meets certain conditions.

If the well is operating in accordance with a decreed plan of augmentation, or pursuant to a decree as an alternate point of diversion, or if a change in the point of diversion to the well has been decreed for a surface water right, the well will not be curtailed under the regulations.

The curtailment will not be ordered if the well owner can show proof to the state engineer that the ground water appropriation can be operated under its priority without impairing the water supply to which a senior appropriator is entitled.

The ground water diverter basically has the option of curtailing well use as specified in the regulations or filing an augmentation plan with the court. The state engineer will allow the wells to continue operations during the time that the augmentation plan is before the court under the terms of a temporary augmentation plan.

The well owner cannot operate under such a temporary plan if he has not filed a permanent plan to the court for approval.

The operation of the augmentation plans is expected to vary greatly and is to be designated to meet the individual requirements and circumstances of the particular diversion.

The general rule which is to be applied to determine the amount of replacement water needed in the augmentation plan, according to the regulations, is based on the production of the well.

The replacement water for stream depletion "shall be made available to the division engineer in an amount equal to five per cent of the projected annual volume of a ground water diversion," the regulations state.

CONTINUED ON NEXT PAGE

This water may be used by the engineer to compensate for any adverse effect of the well to a "lawful senior requirement, as evidenced by a senior call," but in an amount which does not exceed five per cent of the volume of the well.

The regulations call for replacement of only five per cent of the well's capacity although curtailment is ordered for more than 70 per cent (five-sevenths) of the capacity.

While there appears to be a discrepancy between the amounts of water called for under the options, the difference involves the availability of the water saved.

Since the waters in the alluvial aquifer are very slow moving and vary hydraulically in their ability to replenish the surface stream, a greater quantity is required to remain in the system in order to meet surface appropriations.

The replacement waters, on the other hand, are to be made available for delivery as reasonably required by the division engineer, "in a quantity, during a period and at the place so as to prevent a deprivation of water to a senior appropriator."

Therefore, the water in hand as replacement for depletion caused by the wells can be delivered quickly into the stream or to the senior appropriator with the valid call, in the quantity and at the time that it is needed.

Since the division engineer does not have to wait for the delivery of the water by means of natural underground hydraulics, a smaller amount of water is required to meet the actual needs of the surface appropriators.

The capacity of the wells is to be determined by either court decree, application for a water right or registration. If one of these methods is not available for consideration, then the maximum capacity or delivery rate of the pump, as substantiated by the owner, will be used for a base.

According to the regulations, wells will not be allowed to operate under a temporary plan of augmentation if the senior surface appropriators are deprived of water to which they would be entitled if the wells were not in operation.

On the other hand, the wells won't be curtailed or be required to replace water withdrawn, even though junior, to surface rights, when water would not have been available for diversion by the surface right under the priority system assuming the absence of ground water withdrawal by the junior right holder.

If the division engineer determines on the basis of "competent evidence" that a temporary plan of augmentation based on the five per cent water replacement criteria is not satisfactory to meet the senior surface right entitlements, modifications to the plan will be made according to specific criteria noted in the regulations.

These criteria include data based on the complex "Glover formula," the transmissivity value of the alluvium, the specific yield or effective voids ratio of the alluvial material and the consumptive use of the water for irrigation purposes.

These criteria are, to say the least, in and of the realm of ground water engineers. Only a few engineering firms in the state are capable of providing much of the information asked in this section.

But these complex criteria are to be used only as an alternate method for determining the quantity of replacement water required of the well owner to meet the entitlements of a senior right holder.

The amended rules and regulations and the decree of which they are a part, are considered to be the foundation of regulation and management of the waters of the state. The purpose of the decree is to bring about the integration of ground and surface water rights in the South Platte River basin.

Most of the participants in the action admit that changes and amendments are likely. But the jurisdiction remains in the court.

To all water users, this means that "the doors of the courtroom are open" for immediate hearings concerning the regulations, without the necessity of filing additional civil actions.



At the signing of the water accord

Attorneys involved in the consolidated civil actions resulting in the decree and stipulation concluded in District I Water Court last week gathered for the signing of the document, considered by many to be a landmark decision. From left, David L. Harrison, Ralph Waldo, George Vranesh, state engineer Clarence

Kuiper, John D. Musik Jr., Judge Donald A. Carpenter, Glenn Saunders, Donald Hamburg, Dave Miller and James D. Geissinger. Hamburg and Geissinger signed the accord in behalf of the state attorney general John Moore. (Tribune photo by Lynn Heinze)

Water accord signed

3-15-74 By LYNN HEINZE
Tribune Staff Writer

"This is probably the single most important issue dealing with water to come out of a Colorado court in the past several years."

That was the reaction of District Water Court I Judge Donald A. Carpenter after parties to a series of civil actions concerning the proposed rules and regulations of the state engineer stipulated to amendments to those in rules in Greeley Friday morning.

The amended rules and regulations, findings of fact, conclusions of law and judgments were signed by the parties to the action and decreed by court just before noon.

Prior to signing the decree, Carpenter told those gathered in the court, "I think a special commendation should be made

to the attorneys in this case, who represent opposite ends of the poles in some cases, for their efforts and their work with engineers which resulted in this document.

"This decree is a beginning and it may be amended from time to time. But it will remain under the jurisdiction of this court.

"The doors of this courtroom will be opened to all water users for the first time. The matters concerning plans of augmentation and of injury which these regulations may cause will be moved up on the docket.

"This court will stand ready to grant a hearing at any time in order to resolve issues of water and its use," Carpenter said.

"I believe that this is the first time that

we have seen such cooperation of such a diversified group of water users. It is truly a great step forward in the history of water law," Carpenter concluded.

The rules and regulations were to have gone into effect in February, 1973, but were delayed pending the outcome of proceedings of the court.

The revised rules and regulations are slated to go into effect Saturday, as decreed by the court. The rules apply to underground water of the South Platte River and its tributaries.

The rules are slated to require the temporary shutdown of wells in order to meet the call of senior right holders on the river, unless a plan of augmentation is approved by the court which satisfactorily provides replacement water to meet a call.

Water Users Face Violation Charges

FT. MORGAN TIMES 7-25-74

Three Morgan County individuals and representatives of Colorado corporations in business in Morgan County have been ordered to appear at a preliminary hearing in the Water Court in Greeley Tuesday, July 30, to answer charges of failing to abide by water court rules and regulations.

The hearing order was signed in the water court of Weld County Tuesday by Judge Donald Carpenter.

Plaintiffs in the complaint are the People of the State of Colorado, C. J. Kuiper, state engineer, and W. G. Wilkinson, division engineer of Water Division 1.

Charged with failing to follow the rules and regulations of the court are Galen Headley and Thelma Headley, living east of Snyder; Weisbart and Co., Inc., aka Weisbart Properties, aka Sam Weisbart Feedyards, aka Sam Weisbart & Co., aka S.

Weisbart, Inc., aka Weisbart and Co., Colorado corporations of Brush and Fort Morgan; Riverside Feeders, Inc., a Colorado corporation, of Brush and Carl Walker, aka Carl Walcker, of Hillrose, defendants.

The hearing was set after the plaintiffs asked for a preliminary injunction against the defendants.

The complaint charges the defendants with failure to comply with the rules and regulations as set forth in the hearing and stipulations made on March 15, 1974, in the Division Water Court.

The rules and regulations call for water users to be curtailed five days out of seven unless they have an approved plan of augmentation whereby they make replacement to the stream in the amount of their depletion, which would allow them to pump without curtailment.

Owners of 19 Morgan Co. wells face court charges

TRIBUNE 7-29-74

The owners of 19 irrigation wells in Morgan County have been ordered to appear in Division I Water Court in Greeley Tuesday to answer charges of non-compliance with the rules and regulations governing well use.

The hearing order was signed in Greeley by Judge Donald Carpenter last week.

Plaintiffs in the complaint are the people of the state of Colorado, C. J. Kuiper, state engineer and W. G. Wilkinson, division engineer for Division I.

Charged with failing to follow the rules and regulations of the court are: Gale Headley of Snyder; Weisbart and Company, Inc., of Brush and Fort Morgan; Riverside Feeders Inc. of Brush and Carl Walker of Hillrose.

The hearing was set after the plaintiffs asked for a preliminary injunction against the defendants.

The complaint charges the defendants with the failure to comply with the rules and regulations as set forth in the hearing and stipulations made on March 15, 1974, in the Division Water Court.

The rules and regulations call for water users to be curtailed five days out of seven unless they have an approved plan of augmentation whereby they make replacement to the stream in the amount of their depletion. If the replacement water is available then the well users may continue to pump without curtailment.

One well rules test case dismissed; two others continued in court here

7-31-74
By LYNN HEINZE
Tribune Staff Writer

Charges of failure to comply with the rules and regulations governing the use of irrigation wells were dropped against one of three defendants Tuesday in District I Water Court in Greeley.

The action came during a preliminary hearing in which the state engineer had asked for a temporary injunction against the use of wells owned by Weisbart and Company, Inc., of Brush and Fort Morgan.

The company asked for a

dismissal after telling the court that all of the wells had been enrolled in the augmentation program under the Ground-water Appropriators of the South Platte (GASP).

Judge Donald Carpenter granted the dismissal.

Two other defendants were granted continuances during the hearing. They were Carl Walker of Hillrose and Galen Headley of Snyder.

Headley was granted the continuance because he said he filed a temporary augmentation plan with the state

engineer. The plan has not been reviewed by the state engineer's staff at this time.

Walker was granted the continuance because he did not have his attorney present to represent him in court.

The charges were the first to be brought under the rules and regulations and stipulations signed in the District I Water Court on March 15. Under the rules, a water user must curtail well use five days out of seven unless he files an augmentation plan with the court. If the plan is approved he may then continue using the wells.

Attorneys near landmark water accord

By LYNN HEINZE
Tribune Staff Writer 3-9-74

"I've never seen as much optimism in that court room since 1969.

"It's been a long and uphill battle, but we're finally at the point where we can agree," according to State Engineer Clarence Kuiper.

The reference was to the District I Water Court in Greeley. The room Friday was the site of what is hoped to be the final work session concerning the rules and regulations regulating the use of ground water.

According to Kuiper, all of the conclusions of law, findings of fact and stipulations concerning the rules and regulations were agreed upon, "with the exception of some minor points" during the session Friday.

"But the important thing right now," Kuiper said, "is the fact that we're close enough to be able to hammer out those minor points of disagreement."

The entire package concerning the regulations is slated for signing next Friday in the District Water Court.

One of the only points of contention not agreed to during the session Friday concerned the flexibility of the state engineer in approving temporary plans of augmentation during the period when the permanent plan is being filed with the court.

"There is a certain amount of flexibility given the state engineer under the augmentation statutes," Kuiper said. "We feel that this flexibility is being infringed upon to a certain degree as the augmentation section is stated in the rules and regulations in the court.

"But we are confident that a com-

promise can be reached before next Friday," Kuiper said.

Several points of contention were agreed upon during the work session Friday, leaving only the one basic point for compromise during the week.

The specific information contained in the finding of fact, conclusions of law and stipulations of the rules and regulations will not be available for release until the signing and decree of court set for next Friday.

The decree is likely to be one of the major landmark decisions handed down

in modern water law. At least two additional water districts in the state are awaiting the decree before proceeding with regulations concerning ground-water.

But the effects of the case are likely to cross state lines as well. The 19 western states face many of the same problems involved with the South Platte River case.

"Many of these states have been struggling along for the past few years, faced with problems of increasing population and increased water use, and have not really known what to do," Kuiper said.

"I would imagine that these states will take a good look at this plan and base

their decisions on what we've learned here. In many ways, we're really ahead of them in water law and management."

The compromise marks one of the first times that a wide spectrum of water users sat at the same table to work out regulations which are mutually agreeable.

Protests to the proposed rules and regulations of the state engineer came from ground and surface appropriators and represented a cross-section of interests which included corporations, public utilities, municipalities, ground-water user associations, irrigation companies and other agricultural use representatives.

"That's the beauty of this case, we have a full spectrum of interests involved. And the final decree should be equitable over the full range," Kuiper said.

"Another important part of the decree will be the fact that it will all be accomplished under the existing laws of the state," Kuiper said.

"The revised rules and regulations are perhaps more far-reaching than the proposed rules, but they are comprehensive enough to be permanent. The rules also allow for more management of the resources than was possible in the past as well," according to district engineer Dugan Wilkinson.

"The revised rules are more specific as to how the management is done. I don't foresee the need that the rules will have to be changed in the near future," Wilkinson said.

The case has involved more than 17 days of actual court testimony to date and countless additional hours by the 13 attorneys representing the various parties to reach the compromise which is to be signed next week.

"We spent a lot of time and effort putting the information before the court," Kuiper said. "This was done to explain the problems and relationships of ground and surface water use as spelled out in the 1969 statutes.

"As a result, I think we have a better understanding by all users. The hearing was an educational process for everybody involved," Kuiper said.

"The purpose of the rules and regulations is to gear the whole operation of the basin to the conservation of water to which Colorado is entitled and to make the maximum beneficial use of the water through management plans," Kuiper said.

Wilkinson said that the best ways for the individual ground water user to meet the augmentation requirements of the regulations was through an organization.

"We would think that it would be better for as many users as possible to be involved in a single organization. With factionalization, the users will find themselves bidding against one another. The only result would be an increase in the costs of the water to everyone," Kuiper said.

"If I were a groundwater user," Wilkinson said, "I think I would do everything possible to sign up for the GASP program before the March 15 cut-off date.

"I'm not saying the plan is better than anyone else's, but it is in operation and is moving toward augmentation.

"A farmer or rancher dependent on groundwater has his entire livelihood at stake, because I think there is no question that the rules and regulations will be in effect this year.

"The GASP plan offers a solution. But it's not the only organization, and it must be a personal decision," Wilkinson concluded.

"Such a group, if it had the numbers and the treasury, could begin to institute programs to save the water which is running out of the state at this minute," Kuiper said.

"We have become used to federal governmental paternalism. It has stifled personal initiative to take on a project like this.

"But the federal government works slowly and we need the work now. Narrows, for example, has been on the drawing boards for nearly 40 years. But the water still runs out of the state.

"This type of group could be instrumental in getting these projects under way," Kuiper concluded.

Water court's decree, stipulation has far-reaching effect

(Editor's note: This is the first in a series of articles dealing with the stipulation and decree issued in District I Water Court Friday concerning the regulation of ground water diversions in the South Platte River basin.)

By LYNN HEINZE
Tribune Staff Writer 3-18-74

The decree issued in District I Water Court in Greeley Friday is likely to have far-reaching effects on well owners in the South Platte River basin.

The decree, and the stipulation to the decree, are considered by many to constitute a land-mark decision in regard

to the regulation of ground water in the state.

In an attempt to better understand this complex issue and the implications of the decree, it is necessary to consider each section of the final document which came out of the court action.

The finding of fact, the first section of the document, is the basis of the amended rules and regulations.

This section notes that ground water in the alluvium of the river's drainage basin and the surface water of the river are hydraulically connected in most areas.

Therefore, removals from either the surface portion or the underground

portion of the river system decreases the water available to the whole system.

Until about 30 years ago, only limited diversions were made from the ground waters of the basin and nearly all diversions were made from the surface waters of the system.

But even after the advent of wells in the river system, there was practically no administration by the state engineer's office of those diversions until 1965.

During the same period, according to the document, surface water diversions were generally administered according to priority.

The state engineer generally attempted to curtail or shut down junior

diversions to the extent necessary to provide water supplies needed for the beneficial use of senior appropriators.

The office of the state engineer had access to records of surface stream flows and used experience gained from the administration of the surface flow to administer the waters of the system "according to practices which were equivalent of regulations." These practices were well known and accepted by water appropriators, the document said.

The practice of administration of the surface waters also took into account the time it takes for the water to flow along the surface streams. As a result, the

curtailment of junior diverters was timed to provide needed water for the senior right holders at the time of their need.

The document further states that the office of the state engineer has become increasingly familiar with the flow characteristics of the ground water portion of the basin in recent years.

Extensive studies of the ground water flow by the office have indicated the flow is at such a slow rate that administration is more intricate and requires greater skill and expertise.

Further, the document states, there is evidence that ground water diversions, "junior in right and time to surface

appropriators," have reduced the supplies of water which might otherwise have been available to senior surface appropriators.

"Sufficient facts exist to support the conclusion that a reasonable lessening of material injury to senior appropriators will be accomplished by the proper regulation of diversions by means of wells," the stipulation concluded.

The stipulation admits that there are periods when there is an overabundance of water in the surface portion of the river system. That over abundance,

Water court's decree has far-reaching effect

3-18-74

Continued from page 1

together with the return flows from beneficial uses, charge and re-charge the ground water aquifer of the South Platte.

The ground water is a slowly-moving body of water which is mostly below the influence of plant transpiration and

evaporation and may be diverted for beneficial use, the document states. However, the diversion must be regulated to protect senior rights.

The time of the impact of the wells on the surface stream does vary, however, depending on the distance of the ground water diversion from the surface stream, the volume and duration of the diversion and the elevation of the ground water aquifer at the time the diversion is made.

The document admits that there may be circumstances where no damage may actually occur to the stream, then adds, "but the burden of assuring that there will be no injury to the senior appropriator must fall on the junior appropriator."

One of the generally accepted methods for calculating any depletion of the stream (needed to determine the amount of water to be replaced) as sited in the document is based on a treatise by Robert E. Glover

entitled "The Pumped Well." The method, generally referred to as the "Glover formula," is based on certain assumed factual idealizations which require expert judgment to be exercised in its application in order to account for variations from these limiting assumptions, the document states.

The stipulation does allow for the application of other methods of determining depletion, if they are more accurate, for the solution of the

problem in a particular case. Due to the anticipated complexity of the application of the amended rules and regulations, jurisdiction over the application of those rules will remain in the District I Water Court, the stipulation states.

It is evident from the proceedings that the factual determinations relied upon are subject to some uncertainty and that judgments required of the office of the state engineer in enforcing and applying the

amended rules and regulations might have a potential adverse effect on the parties in the proceeding.

But, the document states, regulation must proceed on the basis currently available and therefore will come under the continuing jurisdiction of the court.

Court decree based on historical seniority of water rights

(Editor's note: This is the second of a series of articles dealing with the stipulation and decree issued in District I Water Court Friday concerning the regulation of ground water diversions in the South Platte basin.)

By LYNN HEINZE
Tribune Staff Writer 3-19-74

The decree issued in District I Water Court last Friday concerning the regulation of wells in the South Platte basin is based primarily on Colorado Revised Statutes 148-21, otherwise known as the *Water Right Determination and Administration Act of 1969*.

Under 148-21-34(1) the state engineer may adopt rules and regulations to assist in, but not as a prerequisite to, the performance of his duties as outlined in the section.

The proceedings of the court were not for the purpose of suspending the obligations of the state engineer, according to 148-21-34, 35 and 36, but to assure that the rules and regulations be consistent with the basic requirements for implementing the priority system among all appropriators, the decree states.

The decree states that the amended rules and regulations which were included in the decree, become effective on the date of the signing (Saturday) and that the state engineer has the continuing obligation to administer the water supply under his jurisdiction whether or not he's adopted rules and regulations.

In the same section, according to the decree, the legislature made a special provision for integrating ground and surface water (148-21-23).

The section apparently recognizes the amount of time which might be required to gain the approval of the court for augmentation plans. The legislature specifically provided that until the court action is completed the state and division engineers shall develop temporary augmentation plans to allow for the existing uses to continue to assure the beneficial use of the waters of the state.

But, unless the water users file augmentation proceedings with the court, the state engineer may not

authorize temporary plans, the decree states.

To avoid a deprivation of water to some senior appropriators, the decree states, the ground water appropriator shall make replacement water available for delivery as reasonably required by the division engineer, in a quantity, during a period and at a place so as to prevent a deprivation of water to the senior appropriator.

The division engineer shall use valid senior water calls as the normal criteria for requiring such replacements.

This is one of the important stipulations of the decree. In the past, surface water users have issued a call known as a "futile call" which is not allowed under the decree.

The futile call might be issued in May for anticipated water needs later in the irrigation season. Under the provisions of the decree, a call must be valid — in other words, there must be a present need for water in order to conform to the senior water right.

If there is any question as to the validity of a call, the water user may apply to the court, without the necessity of filing another civil action, for a determination of the validity.

The court retains jurisdiction for the purpose of providing this immediate hearing to review the validity of a call, to consider requirements for providing replacement water, the approval or disapproval of temporary augmentation plans, the findings of the division

engineer or other matters contained in the rules and regulations.

The method for providing replacement water has been compared to a checking account in which the division engineer and the well owner act as co-signers.

The well owner, according to the rules and regulations, would supply an amount of water equal to five per cent of the well capacity. This water would be made available to the division engineer.

If there was a valid call on the river, the division engineer could use any or all of the water in the "account."

If all of the water in the "account" was not needed during a given season, the "balance" would remain on hand. In other words, it would continue to be credited to the well owner.

On the other hand, it would not be possible to "over-draw" the account. Under the terms of the decree, the amount of water deposited in the account at the beginning of the year satisfies the well owner's total damage to the river system. Therefore, when the water is all drawn out of the account, there is no additional obligation on the part of the well owner.

GASP extends deadline for sign up

By LYNN HEINZE
Tribune Staff Writer 3-27-74

The application deadline for entry into the Ground Water Appropriators of the South Platte (GASP) has been extended indefinitely by action of the board of directors Tuesday night.

The action came after several applications were received by the Fort Morgan-based non-profit corporation after the March 15 deadline set previously. The decision was made after the directors assessed the water available to the group for replacement under the rules and regulations of the state engineer.

According to director Vic Klein of Kersey, GASP already has some 20,700 acre-feet of water available for replacement during the 1974 irrigation season and is in the process of negotiating for additional water.

Replacement water was obtained from the resources of six large capacity wells drilled and operational in the Sterling area, and from the leasing of water in different locations upstream of Denver to the Nebraska state line.

GASP is operational under a plan of augmentation to supply replacement water to meet the depletion requirements of member wells under the decree of the District I Water Court and the amended rules and regulations of the state engineer.

Because of the limitation of water, Klein said the directors of the group will accept applications "as long as water is available to meet the replacement requirements of the member wells."

Klein also noted that the deadline was

extended this year only "to give farm, feed lot, commercial, industrial, city and town users the opportunity to become part of the GASP replacement plan."

During 1973, GASP had 2,111 member wells in all classifications. This year, according to Klein, the group has 2,972 member wells as of the March 15 deadline. The wells lie in the entire basin

of the South Platte, Klein said.

GASP has agreed to purchase a 17,500 acre-foot reservoir to be used as a ground water recharge site to further augment its replacement capabilities.

According to Klein, GASP is a non-profit corporation formed explicitly for the purpose of managing and acquiring

Continued on page 2

depletion of well users to valid senior calls and vested water rights in the South Platte basin.

GASP's only interest is in the general welfare of the South Platte River basin through cooperation in a voluntary organization in which each well user subscribes according to his own requirements each year, Klein said.

GASP members are entitled to pump their wells as usual and are not subject to shut-down orders as outlined in the rules and regulations of the state engineer.

The regulations call for the curtailment of pumping five-seventh of the time this year, six-sevenths of the time in 1975 and totally in 1976 and the years following.

The curtailment is ordered by the state engineer unless the well owner is under a plan of augmentation which would supply replacement water in the amount of five per cent of the capacity of the well.

Membership in GASP provides such an option, Klein said.

More information is available by contacting the GASP office at 867-5298, or writing Box 974 in Fort Morgan.

Decree spells out ground water rules

By LYNN HEINZE

Tribune Staff Writer 3-16-74

A dozen attorneys, several engineers and a score of observers gathered in the District I Water Court in Greeley Friday as they have an untold number of times in the past few years.

They attended this hearing for the same reason as before: to consider the regulation of ground water in the South Platte River basin.

The attorneys represented a broad spectrum of water users. The cities and towns had their legal representatives on hand. Corporations and quasi-corporations were represented.

The lawyers represented surface diverters and groundwater appropriators.

But in the courtroom this time, the atmosphere was different.

The cold, hard, serious looks normally present in the courtroom were replaced by light conversation, smiles and occasional laughter.

This meeting was called to conclude several months work on amended rules and regulations. The attorneys came to sign the stipulations to those rules and regulations and to witness the decree of the court.

The amended rules and regulations as decreed by the court for the South Platte River and its tributaries became effective today. The rules will remain in effect and in force unless changed or amended as provided by law, according to the decree.

According to the rules, ground water diversions will be continuously curtailed five-sevenths of the time during 1974, six-sevenths of the time during 1975 and totally curtailed during 1976 and thereafter.

The diversion of ground water will be curtailed under this schedule, according to the rules, unless the diverter submits proof to the division engineer that the well is operating pursuant to a decreed plan of augmentation, or that it is operating as a decreed alternate point of diversion, or that a change in point of diversion to the well has been decreed for a surface water right.

The well may also continue to pump if it is operated without impairing the water supply entitled to a senior right holder.

If the well is used for domestic purposes or for the water of livestock, or is decreed exempt from regulation by the court, the curtailment procedure is not applicable.

Any groundwater appropriator affected by the rules may use part or all of the water diverted without regard to curtailment if his diversion is in compliance with a temporary augmentation plan approved by the division engineer and where there is a plan of augmentation filed in the water court both in accordance with the law.

The rules give guidelines which the augmentation plan is supposed to meet. Under these guidelines the replacement water for the stream depletion shall be made available to the division engineer in an amount equal to five per cent of the projected annual volume of a ground water diversion.

This water may then be used by the division engineer to make up for any adverse effect the groundwater diversion has on a senior appropriator. The water will be used only when there is evidence of a valid senior call, but at a rate not exceeding five per cent capacity of the well.

The actual well capacity is to be determined by court decree, if it is adjudicated; by application for a water right, if it is filed by court, or by registration.

The rules also call for other methods of augmentation which are to be used in cases where the division engineer feels that the stream depletion caused by the well is different from the five per cent criteria.

The decree of the court is heralded by many observers as a landmark decision in water law for the state.

But the decree also means that the groundwater user will have to make plans to replace water taken from the aquifer of the river.

The decree is relatively specific in this case: augment or curtail pumping on a fixed schedule.

In addition to the amended rules and regulations, the decree included certain findings of fact and conclusions of law which were stipulated to by the parties to the civil action.

Farmers rejoice as rain snaps drought

By LYNN HEINZE 6-10-77
Tribune Staff Writer

The month-long drought which threatened the county's wheat crop ended Saturday as rains continued falling across most of the county.

Official precipitation reports showed total rainfall ranging from 2.05 in the Grover-Hereford area to more than 3.25 inches in Greeley.

And for the county's wheat growers, the rain "was the genuine lifesaver. We couldn't have asked for much better," according to Lynn Shippis of Nunn.

According to Shippis, the rain lasted for nearly a full 24 hours in the Nunn area. He said the total accumulation amounted to more than 2.75 inches.

The Nunn area was one of the hardest hit by drought in the county, according to reports received last week.

"We've pretty much just been walking on air around here," Shippis said. He estimated that as much as 15 per cent of the crop in the area was burned down before the rain came. "It's doubtful the wheat will come back on that thinner ground."

"But the rain will help the rest of the wheat fill out and that will make a big difference," Shippis also said the rain would bring back a lot of the grass in the area, used by ranchers for grazing of cattle.

Shippis said there was no runoff from the storm to speak of. "It just all went into the ground."

In the Prospect Valley area, Lyle

Cooksey reported about 1.75 inches of rain. "It will help the heads to fill out real well," Cooksey said.

Only a small percentage of the crop was burned badly in this area, according to Cooksey. "But the rain will fill out the heads enough to add maybe five to 10 bushels per acre to the yield."

Rain reports from around the county indicated: 2.05 inches in Grover; 2.56 inches northwest of Greeley; 2.73 in Windsor; 2.74 in Gilcrest, and 3.25 inches in Greeley.

According to Dr. Glenn Cobb, University of Northern Colorado meteorologist, the total rainfall for the county represents a tremendous amount of water.

Assuming two inches as the average precipitation for the county, the rain produced more than 144 billion gallons of water. That's about 433,000 area feet or just a little more than the total annual transmountain diversions into the South Platte basin.

Another way of looking at the amount is that it represents more than twice the combined capacity of Horsetooth and Boyd lakes. The water would weigh more than 1.15 trillion pounds, according to Cobb.

But with all of the rain which fell, there was little evidence of runoff. According to county commissioner Glenn Billings, two roads were temporarily closed because of a slight bridge damage this morning because of local flooding. The

two areas were along county roads 66 and 64.

Some runoff into the South Platte pushed up the flow, but caused no real problems, according to Jim Clark of the Water Resources office in Greeley.

Clark said that the river flow went from about 400 cubic feet per second before the rains began to a peak of about 8,300 cfs on Sunday. This flow compares to 35,000 cfs recorded at the peak of last year's devastating South Platte flood.

Clark said that the very dry farm land in most of the basin was responsible for "sponging up" most of the rainfall.

Cobb said the rain was the result "of all of the right factors finally coming together at the right time."

"For the last few weeks, the surface low pressure systems all moved to the north," Cobb said. "We finally got one to develop to the south, which brought up the cool moist air."

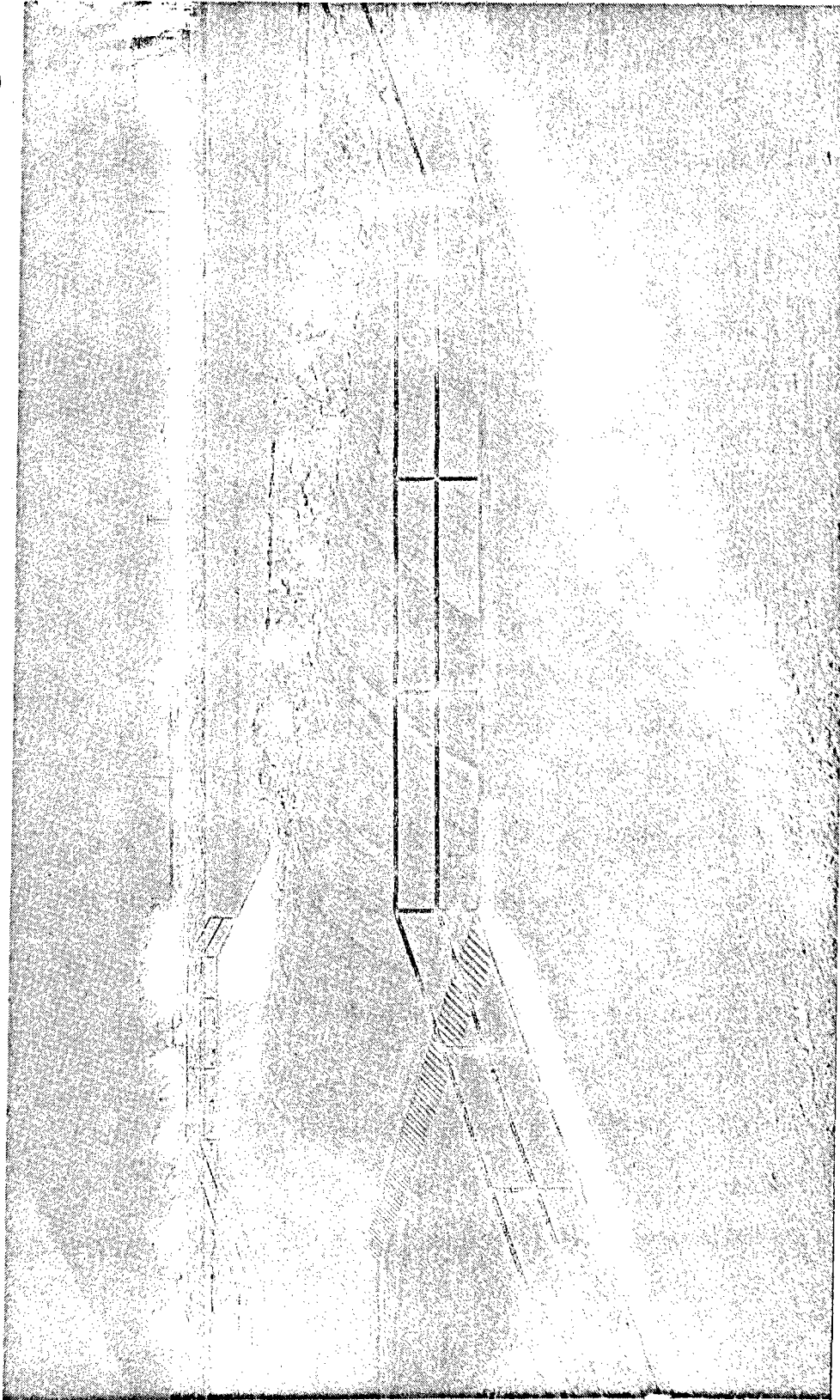
"We also had a cool upper air system in the area and the jet stream finally dipped into the state. All of these things just combined to produce the moisture," Cobb said.

Although the month of May was one of the driest on record, Saturday's rain put the area ahead of the normal rainfall for the year through June, according to Cobb.

In fact, Saturday's rain accounted for 229 per cent of the normal rainfall expected for the entire month of June.

The area has received 8.26 inches of rain so far, about 1.42 inches ahead of the norm. Nearly 80 per cent, Cobb noted, with the last April snow and Saturday's rain accounting for more than half of the total.

Cobb said we will go into a slight warming trend through Friday, with only the chance of scattered thunder storms. The outlook now calls for the first chance of general precipitation later this week, Cobb said.



NEW 360-FOOT SPILLWAY — The ogee spillway spans the gap left in the southwest dike of the Latham Reservoir during last year's failure. The structure cost nearly \$500,000 and was funded by the Federal Disaster Assistance Ad-

ministration which realized the importance of the dam as a protector. (Tribune photo by Marc Newton)

CONTINUED ON NEXT PAGE

Latham Reservoir again stores water

By LYNN HEINZE
Tribune Staff Writer

KERSEY — After more than a year and the expenditure of nearly \$660,000 the Lower Latham Reservoir was again ready for service last month.

In April, 1973, a breach in the dam of the Latham dumped several thousand acre feet of water onto farmlands and into the streets of Kersey.

The reservoir located southwest of town, had served as a source of irrigation water for more than 12,000 acres of farmland. Built in 1900, the reservoir served not only as off-channel storage for the South Platte but also as a detention area which gathered waters from a 169-square-mile drainage area.

Combined with the detention capability of Barr and Milton reservoirs, the Latham stood for 73 years as a protector against flood for the lands below.

But then on April 12 of last year, a breach in the southwest dike to the reservoir turned the protector into a source of disaster.

After the waters had cleared, the Lower Latham Reservoir Co. faced the major task of rebuilding the dam. The dam would have to have a major spillway structure designed to prevent future flooding and complete upgrading of the remaining dikes before state approval for the reservoir would be possible.

The company's shareholders, who were also farmers dependent on the water for the

production of crops, had to make a decision: either spend under seepage for the entire width of the spillway.

On the upstream side of the spillway, 40 feet of riprap, a line of boulders, protects the structure from erosion and excess water loss due to wave action.

Downstream there is a 40-foot stilling basin with chute and baffle blocks and an end sill to develop a "hydraulic jump" which will reduce the discharge velocity.

According to Nelson, Haley, Patterson and Quirk design engineer Bob Boekenkamp, "This is the largest spillway on this type of dam site in the state.

"But it is one of the things which will probably have to be added to many dams in the hear future," Boekenkamp added. "It will definitely do the job." But the spillway was not the only thing which had to be done to the reservoir in order to meet the state requirements.

An upgrading of the entire structure would also have to be carried out while the spillway structure went into place.

To finance this phase of the project, the reservoir company assessed each of the owners of 156 shares of stock \$500. And during a six hour period on the entire 169-square-mile drainage area, an ogee type spillway was constructed to minimize the erosive action of the overflow and water.

So the company applied for a loan from the Farmers Home Administration for Sheet piling was driven through the embankment to

an additional \$158,000. The 40-year, low interest loan provided the funds needed to upgrade the dike.

The money was used to upgrade the upstream side of the dike. The riprap along the dike was removed and dirt was added to make a three to one inside slope. Then the riprap was replaced and new material added to protect the dike.

The dike was also lengthened at both ends in order to prevent runoff from the sides of the structure under maximum stress conditions.

The crest of the dike was also widened two feet to bring it up to state standards.

In order to assure a quick, accurate check of the hydraulic pressures on the dike, some 25 monitoring posts were sunk into the dike. Most of the Piezometers are in the vicinity of the spillway structure.

And finally, in order to make checks of the reservoir more convenient, an improved roadway was added which spans the entire length of the dike structure.

So, after 13 months and 12 days, the Latham was ready again to provide irrigation water and protection.

Well Water Recharge District Is Proposed In Badger-Beaver Area

FORT MORGAN, COLO. TIMES, THURSDAY, MAR. 28, 1974

The Fort Morgan Times

Within the next 30 days, officers of the Badger and Beaver Association will go into District Court to petition for the formation of the Badger and Beaver Water Conservancy District — a well water recharge district.

Between 170 and 175 property owners in the proposed district stand to benefit from the project which is set up to raise the water tables in the area for 48 owners in the Badger Creek area, 112 in the Beaver Creek area and between 10 and 15 in Washington County.

Included in the plans are usage of the Bijou Irrigation Co. headgate and main canal to a point seven miles west and two miles south of Fort Morgan. From there, the district would construct a ditch that would meander through the southern portion of Morgan County by the old Gary store south of Brush and across the county line into Washington County.

From its beginning point southeast of Fort Morgan, the ditch would run in a southeasterly direction to 10½ miles south on the Sherman Street road (1½ miles south of the nine-mile corner) head northeasterly to a point five miles east and three south of Fort Morgan, head southeasterly again to two miles south of the Morgan County line, then tail out in Beaver Creek at that point.

Cost estimates were based on those gathered two years ago: \$20,000 or so a mile for the proposed ditch of 50 miles plus in length or \$1,200,000 which would include cost of right of way, fences, bridging and other expenses. Actual costs today for the ditch were placed in the neighborhood of \$2,000,000 based on price increases of the past two-year period.

Progress and plans of the association were revealed at a meeting held at the Morgan County Federal Savings and Loan Association meeting room Wednesday night attended by owners from the area to be included in the district.

Chairing the meeting was Russ Tormohlen of Fort Morgan who said the association had its beginning about three years ago when men from the Beaver area, faced by lowering water tables, met to try to set up a program for recharging the underground with water for irrigation water use.

Officers and directors of the B and B Association are John Hallahan, president; Dave Brown, secretary; Lawrence Ely, Virgil Fiscus, Leo August, John Yager and Milt Tormohlen, directors.

The association engaged C. Henry Anderson of Brush as attorney and enlisted the service of Cecil Osborne of Fort Morgan as engineer.

Tormohlen introduced Bob Samples, water commissioner, who, Tormohlen said, had ramrodded the program, to explain what had gone on.

South of Brush the water had been mined out, Samples said, and the farmers in that area are on a declining water table. They wanted to get a project started so they could get their wells back to normal and as those in the Badger Creek area south of Fort Morgan were also having the same problem, they were brought into the project.

If the water could be brought down the Bijou Canal to the point southwest of town, this water could then be gravity-fed into the proposed area.

The state encourages water to be taken from the South Platte River during the high season when it is not being drawn on, put it back into the underground and take it out when it is needed. Over the past five years, Samples said, an excess of over one million acre-feet has been lost each year going out of the state. It's not possible to get all of it but some of it can be used two or three times before it goes out of the state.

The B and B Committee has gone to the state engineer's office, to GASP, to bonding companies and followed other avenues for financing. Osborne was then retained for engineering services.

Osborne then explained in detail on the map of the proposed district the course the ditch would take to carry the water from the South Platte at a time when appropriators don't need it. The line would go mostly through pasture land to the Badger Creek and all of the region is sandy ground until it reaches Beaver Creek.

Seepage losses would be tremendous, Osborne said. Starting at the beginning with 250 cubic feet per second of water, it would be down to 100 cubic feet per second by the time the water got down to Beaver Creek.

He pointed out that as a general rule, there are approximately 100 days when some water would be available from the river.

There is one point where it would be necessary to line the ditch to prevent the hard water from getting into the source of soft water for Brush. Without the lining, the water for Brush would be greatly degraded, Osborne said.

Anderson described the legal procedure which is necessary to follow: petition to the court for a water conservancy district; a hearing date for protests would then be set, probably 60 to 90 days from the date of filing; then the court would give its decision whether or not the district could be formed.

A district under \$20 million in valuation must have 25 per cent of the irrigation land owners and five per cent of the non-irrigation land owners sign the petition. Acreage in the Badger Creek area is 24,800 acres with a valuation of just over \$300,000 and in the Beaver Creek area, 713,000 acres with a valuation of \$642,000. There would be additional land to be included in Washington County.

Main purpose now in forming the district is to have a board which can act with lending agencies, Anderson said.

Bob Taylor, county executive director of the ASCS office, explained the possibility of the district getting some cost-share money and said the state has \$300,000 which has been ear-

marked for special projects for 1974.

Taylor then explained the procedure which must be followed to apply for money and suggested that an immediate request should be submitted so it could be acted on by the county committee and if passed, sent on to the state committee for its action.

Emory Johnson, district conservationist for the Soil Conservation Service, said that ground water recharge now has a top rating and some funds have already been earmarked for planning money for ground water recharge.

Johnson said he worked closely with the ASCS office.

Following a question and answer period, land owners were invited to sign petitions for the formation of the district.

Ditch lining to serve farmers, area

By LYNN HEINZE
Tribune Staff Writer

By the end of next week, crewmen will have finished lining more than 2,900 feet of the Standley Lateral south of Kersey.

The lateral, which has served area farmers for more than 50 years, had to be lined, according to Everett Kissler, one of the farmers involved in the project.

"We had to do something. We were losing water because of sandy nature of the soil along the channel. And we had a serious erosion problem.

"The grade of the ditch at this point (along County Road 55) is very steep. The water was eroding the county road, threatening power poles along the route and was causing problems for the farmers along the channel."

Kissler said the former owners of farm land served by the lateral attempted unsuccessfully to get the ditch lined about 15 years ago, and the present owners have been planning the lining operations now for more than two years.

The concrete lining will cost the area farmers more than \$34,000 for the 2,950 feet of canal. The federal government will pay for 50 per cent of the construction though under the provisions of the 1974 Rural Environmental and Conservation Program (RECP).

Under the provisions of that program, the money can be used for the improvement of the ditch only if there is an area benefit. In other words, money is not approved for the federal cost-sharing unless there is benefit to persons other than the direct users.

"The Standley Lateral is one of four flood control points along the Gilmore Canal. We are designated to carry 40 second feet of water under flood conditions in the Gilmore or the Milton Reservoir.

"So there is area benefit in addition to the benefit received by the six farmers along the lateral who depend on water for irrigation," Kissler said.

Kissler indicated that the county also helped in the construction of the lined canal by replacing a tube used to carry the water under County Road 55.

"The federal specifications called for a bridge-cap to be constructed on the site to replace the tube under the road. We asked Roy Moser for some help with the cap and the county decided to construct the bridge. The new cap will improve the

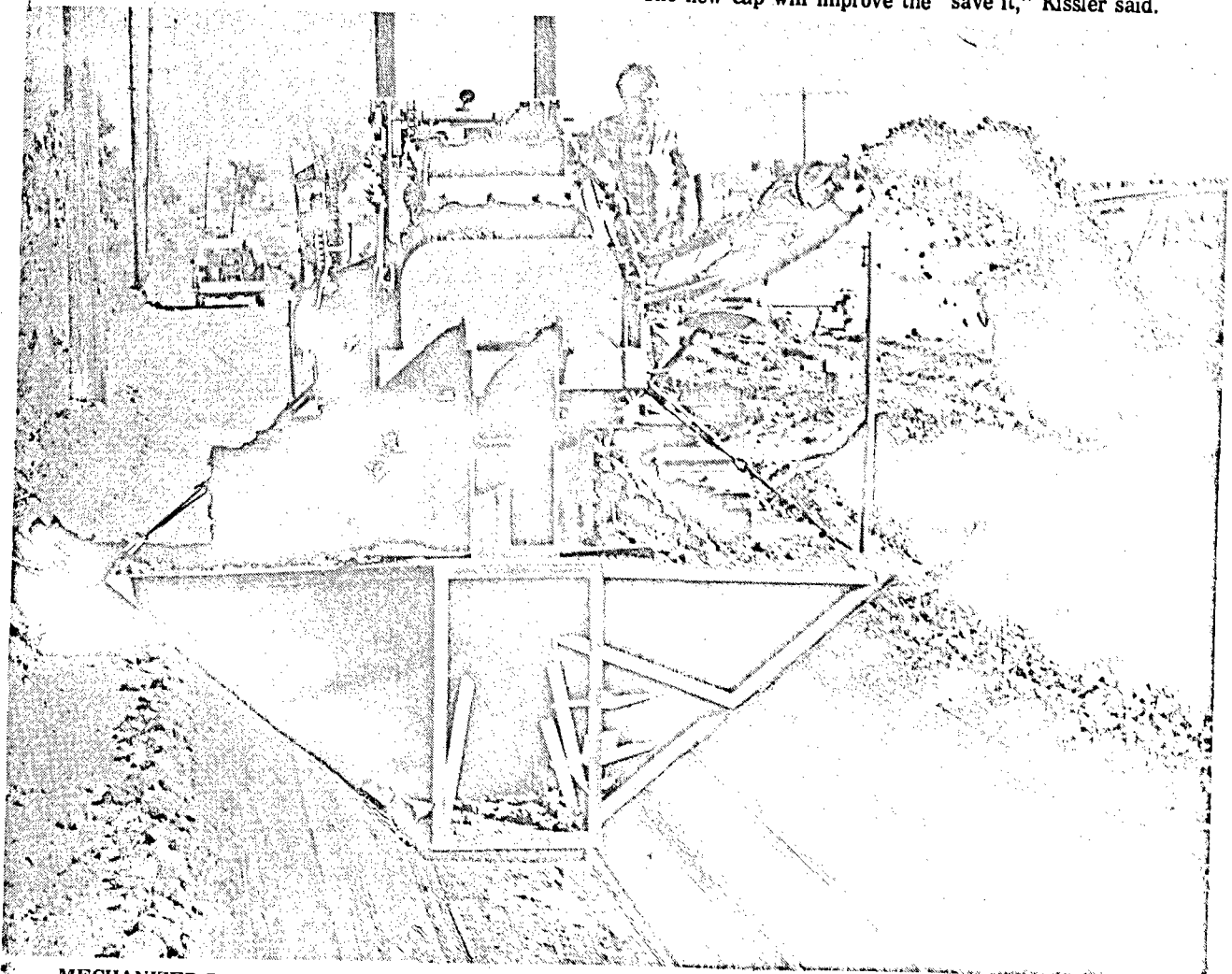
county road a great deal and the county really came through for us," Kissler said.

The construction was under the supervision of engineers of the Soil Conservation Service, which also designed the job. The lining was done by M and S Concrete Company of Greeley.

Kissler talked about the groups action: "As I see it, the farmers are going to have to stick their necks out a little further to protect their own interests.

"Several water companies are under attack right now, and the farmers will have to join together in some sort of mass effort to protect their water rights and themselves.

"This was one such step. We were losing water and we decided to get together and save it," Kissler said.



MECHANIZED DITCH DIGGER — This adjustable ditch digger is used to prepare the channel for the slip-form concrete liner. The digger travels along the ditch bed and cuts the

channel to the specific size, shape and grade of the final ditch. (Tribune photo by Lynn Heinze)

Limit on new water taps pondered

By FRANK COLOHAN

Tribune Staff Writer 6-4-75

Greeley's water situation is becoming so serious, the number of new taps granted is going to have to be limited until additional water becomes available in 1976, City Manager Peter Morrell told the Water and Sewer Board Monday evening.

Morrell said Olin Shaffer, water director, has reported the city already is having some problems with water pressure.

He added Shaffer had noticed a lot of development under way at the Hill-N-Park Subdivision west of Evans, which it appears is doubling its size.

"It appears we are going to have to limit the number of taps issued because of the water pressure situation," Morrell said. Hill-N-Park is served by Evans and Mayor Gene Aplin and Evans City Manager Robert Annis were present at the meeting.

Shaffer reported the city has both its Bellvue and Boyd Lake filter plants operating at full capacity at this time but still isn't gaining any water in the city's reservoirs here, due to heavy water usage.

"I anticipate, if the weather continues dry much longer, we will have to tighten up our watering restrictions," Shaffer said.

Presently sprinkling is permitted from 5 a.m. to 1 p.m. and from 5 p.m. to midnight on alternate days of the month.

The water director added that it had originally been thought a \$7½ million expansion in water facilities would result in additional water being available this summer, then later it was thought it would be available in 1975 and now it appears the additional water won't actually be available until 1976.

George Underwood of Nelson, Haley, Patterson & Quirk, engineering consultants for the expansion project, ob-

served the delay was due to the fact 1½ years was lost because no construction was under way.

He added it will take 15 months to build the new 20-million gallons daily filtration plant at Boyd Lake. Underwood also said some delay may result from the fact the city is going to have to acquire the site by condemnation. "Bill Shade (city attorney) expects to be in court on that in two weeks," he said.

"We are requiring the transmission lines to be built as scheduled, so we will gain a little water from that for next summer," Underwood continued.

The engineer said this might possibly increase the city's water supply by three or four million gallons daily but, to do this, the existing filter plant at Boyd Lake will have to be run that much over its capacity. "I think it will work," he said.

Shaffer, however, said he wouldn't want to promise the additional water would be available until it can be determined if that amount of water could be put through the filter plant without getting the wet well pumped dry.

Underwood also reported that the transmission line being constructed as part of the project between 47th and 35th Avenues is almost completed.

The board recommended to City Council that the city work out a contract with Virgil J. Mathews to provide taps for a KOA Campground 4½ miles west of Greeley when additional water becomes available.

Mathews said he has been planning the campground in the hope water would be available by June 1, 1975. He added the plan calls for 110 spaces to be developed then, which would require an amount of water equivalent to 14 homes.

However, he said he would be willing to enter into a contract under which he would be assured of getting the water he needs when it is available.

Supreme Court upholds groundwater law

By CARL HILLIARD
Associated Press Writer 11-15-76

DENVER (AP) — Underground water that moves 300 feet per year or less flows too slowly to be considered a tributary for a surface stream, the State Supreme Court ruled today in upholding the constitutionality of the Colorado Ground Water Management Act.

The high court's opinion overturned an earlier decision by Weld County District Court Judge Donald A. Carpenter. He had ruled the act in violation of the state constitution.

The complicated decision involved State Engineer C.J. Kuiper and the Central Yuma County Ground Water Management District, and a well owner, Elmer Lundvall.

He had three wells pumping from a designated ground water basin, and Kuiper attempted to stop him from transporting water from those wells to lands other than those designated to be irrigated with the well water.

A change of venue from Yuma to Weld County was granted.

Lundvall filed a counter claim, asking that the water act be declared invalid, and requesting an injunction against the state engineer to allow his wells to pump.

The lower court concluded the act was unconstitutional after ruling that the underground water Lundvall was pumping from was in fact a tributary of the Republican and Arikaree Rivers, and part of a natural stream. Lundvall also argued that the act was unconstitutional because it gave the state

engineer powers that rightfully belonged in the judiciary.

But the high court said the Water Act defines "designated ground water" as water which, in its natural course, "would not be available to and required for the fulfillment of decreed water rights, or ground water in areas not adjacent to a continuously flowing natural stream wherein ground water withdrawals have constituted the principal water usage for at least 15 years, preceding Jan. 1, 1965."

The high court said the water pumped by the wells was not from a tributary. Citing a report by the state engineer, the court noted that the underground water in the area is traveling at a rate of 175 to 300 feet per year. From one part of the area it goes to the Republican River's North Fork, eight miles away, and the remainder goes to the Arikaree River, some 16 miles.

If it moves an average between 175 and 300 feet per year, or 237 feet per year," it means it will take water now in the area 178 years to reach the Republican River and 356 years to reach the Arikaree."

The high court said, in effect, that's too slow to be considered a tributary, or a natural stream. It is not a part of the surface stream as contemplated by the constitution.

The supreme court said it had issued an earlier ruling on the question of delegating judicial functions to an administrative agency of the government's executive branch. In that decision it held there is nothing in the constitution to prevent the legislature from placing such jurisdiction in a different agency.

Court's decision on ground water not likely to affect wells on South Platte

By LYNN HEINZE
Tribune Staff Writer 11-20-74

Wells in the South Platte River basin aren't affected by a Colorado Supreme Court decision handed down Monday, according to local sources.

The decision upheld the constitutionality of the Ground Water Management Act of 1965, overturning a decision made in Weld County District Court nearly two years ago.

The case involved the pumping of three wells in the Northern High Plains Ground Water District in Yuma County and the transportation of that water outside an area designated for its use.

Elmer Lundvall, the defendant-appellee, has three wells pumping from

the basin. According to information contained in the opinion of the court, Lundvall filed an application with the Colorado Ground Water Commission to drill a fourth well to irrigate an area adjacent to the sites watered by the three existing wells. The application was denied by the commission which claimed the additional well would impair existing water rights in the basin.

Then, according to the information, Lundvall used water from the three existing wells to irrigate the area which would have been served by the well which was denied.

Division I Water Resources assistant engineer Jim Clark said water in a designated ground water basin is usually

non-tributary and the ground water commission stipulates water pumped from the aquifer cannot be transported.

Clark said the only recharge of the aquifer in such an area is through precipitation and the leaching of irrigation water back into the alluvial formation. Therefore, if the water is transported away from the area being pumped there is no return flow.

Lundvall, in his appeal to the court claimed the water to be tributary to the North Fork of the Republican River and to the Arikaree River. Based on that claim, Lundvall asked to be allowed to continue the transportation of well water since there would be outside recharge in the areas pumped.

But the court ruled that the water would move less than 300 feet per year in the alluvial layer connecting the rivers and the pumped area. The opinion stated, "We hold that as to the water taking over a century to reach the stream, the tributary character is de minimis (minimal) and that this is not part of the surface stream as contemplated by our constitution."

Then, after reviewing the definition of underground water contained in the Water Right Determination and Administration Act of 1969, the court said, "We cannot believe that the General Assembly was talking about water that would not influence the rate or direction of a stream for over a century."

According to one Greeley attorney, this statement by the court marks the first time the court has attempted to "look realistically at the material effect of pumping on the character of a river. It is the first time the court has admitted that the term 'tributary' must be a matter of degree.

"It seems to me this might be the step in the right direction which would eventually lead us to some definite figure, which could be applied to all wells to determine the actual effect on the stream of a river," the attorney said.

The attorney, who asked that he be not identified said this decision marks the first attempt at an actual definition of tributary effect.

Another Greeley attorney indicated

that the case would likely have little effect on tributary wells or any well in a management district. That would include most wells in the Weld County area.

The attorney said the century rule constitutes an "arbitrary figure the court grabbed out of the air" and said it still leaves doubt as to whether the court is "To say, 'yes the water is all part of one river for 100 years' doesn't really make sense."

But the attorneys do agree that the case does established for the first time the constitutionality of the Ground Water Management Act. Although the court ruled in other cases to support the actions of ground water commissions, it has never before ruled directly on the question of constitutionality.

Experts say at Farm Show

Water plan needed in Colorado

1-25-74

By LYNN HEINZE
Tribune Staff Writer

"Down the road, a system of integrated conjunctive use of the water supplies available will have to be developed.

"Water supplies cannot be used to control growth. If there is one thing I've learned in the last 25 years it is that water flows most easily downhill and in the direction of money," according to Robert Barkley, manager of the Northern Colorado Water Conservancy District.

The statement came during a panel discussion Thursday morning at the Colorado Farm Show. The panel considered the topic "your future agriculture without water."

"From my point of view, I can't see any real future for agriculture in a semi-arid area like ours without water," Barkley continued.

"Transmountain water projects like the Colorado-Big Thompson have added to the economic potential of the South Platte and its tributaries. But the dynamic growth of the area has led to increased competition for the variable water supplies available," Barkley said.

Barkley told the farm show group that a system of basin management would have to be developed so that both urban and rural users would benefit.

"But there will have to be a change in the present system of water law before the concept could be developed," Barkley said.

"The system cannot operate to maximize beneficial use of water when everyone can be cut off to supply a single priority user," Barkley concluded.

Greeley attorney Bill Southard briefly explained the facts of record in the case now before the District I Water Court involving the proposed rules and regulations of the state engineer.

Southard explained that the case was the result of protests to proposed rules and regulations issued with an effective date last February. The state engineer is charged by the state legislature, Southard said, to issue the rules and regulations.

The rules would have curtailed the use of wells on a declining basis each year until 1975, according to Southard. After

1975, well use would be prohibited, under the rules.

Southard said the rules allowed for replacement of water drawn from the wells, but that the replacement was "vague and indefinite" according to one of the several protests to the rules filed with the court.

Southard listed some of the other diverse bases for protests to the rules as filed in district court. These included: a failure to recognize the right of adverse possession; that it doesn't recognize the accelerated return flow theory; it is the taking of property without due process; it affects the public health and safety; that

no shortage of water exists because of excesses in the spring, and that all wells should be curtailed without exception.

Southard said he could make no statement relating to a plan for settlement of the controversy, since the case was pending in the court. However, he said, it was a matter of record that working sessions in the court were aimed at arriving at stipulations to the rules which "everyone can live with."

Art Andersen Jr. of Ault represented the Weld County Underground water users on the panel. The water users are one of the protesters in the case discussed by Southard.

Andersen, whose organization is picking up \$46,000 in court costs with a Larimer group, said the organization entered this case and others "to get the maximum beneficial use of water by keeping the wells pumping."

"The principal law we are now operating under is Senate Bill 81 which states that all of the waters originating in or flowing into the state, surface or underground, have always been the property of the state.

"Whether you like it or not, whether you believe it is right or not, this is the law," Andersen said.

Andersen said the state engineer "has never given us any concrete figures as to the amount of water a specific well is taking from a specific stream.

"But the state engineer has the power to establish rules and regulations for the pumps," Andersen said.

"I say this, not to scare you, but to alert you that your work, time and money are needed to obtain a plan for the maximum use of the waters of Colorado," Andersen said.

Andersen said a recent court case, which the group won in district court then lost in the state's supreme court, should be considered with regard to the rules and regulations.

Andersen said the supreme court indicated the engineer should charge a surface decree for water used by a well on the same lands served by the surface decree.

But the court also ruled, according to Andersen, that the engineer shall give consideration to the doctrine of futile call and not permit an appropriator to "command the whole flow of the stream, merely to facilitate his taking of a fraction thereof."

Andersen said that testimony in the supreme court case by the state engineer revealed that underground water flow varies according to several factors. On the average, Andersen said, the

state engineer calculated the average flow for the state to be about four feet per day.

"If that's the case, the water in the aquifer under my farm Ault will reach the South Platte in about 45 years. How can the state engineer, or anybody else know if there'll be shortage in the South Platte in 45 years?" Anderson said.

Vic Klein represented the Groundwater Appropriators of the South Platte (GASP). Klein's organization was originally formed to provide a vehicle for irrigators to meet the replacement requirements of the rules and regulations.

"A farmer needs the assurance in the spring when he plants his crops that he'll have the water to carry those crops through to harvest," Klein said.

"The GASP organization tries to make the replacement water available to assure well supply for the year.

"The anticipated call on the river used by the state engineer causes well curtailment without an actual need on the river. Therefore, assurances are impossible unless replacement water is available in advance," Klein said.

"Without the GASP type of organization, every irrigator must apply directly to the state engineer with his plan for replacement in the event curtailment is ordered," Klein concluded.

Farm owner files Latham Dam break damage suit

TRICKS 11-25-74

A farm owner whose property allegedly was inundated by huge quantities of water when the Latham Dam broke April 12, 1973, has filed a \$42,500 damage suit in District Court.

The plaintiff in the action is Maynard W. Murray of Evans, who owns land in Sec. 26, T-5N, R-65W, northeast of the Latham Reservoir and who, at the time of the dam break, was con-

ducting farming operations on the property, according to the complaint.

The defendants in the suit are the Lower Latham Ditch Co. and the Lower Latham Reservoir Co., owners and operators of the reservoir.

The complaint claims water released from the reservoir when the dam broke caused severe damage to Murray's land by washing away topsoil,

creating gullies and ditches and scattering debris over the property.

Additionally the water destroyed or severely damaged many of the fences on the land, as well as machinery and buildings belonging to the plaintiff, despite desperate and extensive efforts by Murray to prevent such damage, the complaint asserts.

The plaintiff alleges that, in

permitting the dam to break and to release large quantities of water without warning, the defendant companies were negligent in one or more ways. As a result of the defendants' special damages for machinery rental, surveys, transportation and miscellaneous other expenses he has incurred as a result of the flooding of his land.

In addition, he asks \$20,000 in exemplary damages and \$2,500 as special damages for machinery rental, surveys, transportation and miscellaneous other expenses he has incurred as a result of the flooding of his land.

State engineer believes

New drilling could harm water supplies

TRIGGERS 8-4-74

DENVER (AP) — State Engineer Clarence Kuiper says his office is concerned about the possible degradation of underground water supplies as a result of increased drilling in search of Colorado's resources.

Although the Colorado Water Quality Control Commission is planning new regulations, Kuiper said that persons now drilling some exploration holes don't have to obtain a permit. "We're concerned about it and there's a need for data and monitoring of the test holes," Kuiper said.

However, Kuiper said he did not know if his office would be able to monitor the test holes, as would be required under the commission's regulations, since "it would be a hell of a burden on top of what we already have to do."

The regulations would cover exploratory well drilling for coal, uranium, copper and other mineral and energy resources. The current regulations cover oil, gas and geothermal exploration.

A commission spokesman said there have already been numerous examples of exploratory wells causing water pollution problems. And more difficulties are expected as drilling increases in the hunt for the state's energy resources, the spokesman said. "Exploratory drilling is up even more than last year, and

Mike Isbell, assistant attorney general for the Water Quality Control Commission, said the new regulations aren't aimed at inhibiting exploration, only protecting the state's water resources.

John Rold, state geologist, said, "We need an exploration drill-hole regulation, some means so some permanent state agency knows who drilled what hole and how deep, so if liability or damages come up in the future we know where to go and who to talk to about problems."

Mike Isbell, assistant attorney general for the Water Quality Control Commission, said the new regulations aren't aimed at inhibiting exploration, only protecting the state's water resources.

Landmark water accord

Summarized in 5 points

TRIGGERS 3-27-74

To most of the well owners in the South Platte River Basin, the decree of the District I Water Court and the amended rules and regulations of the state engineer are a maze of legal terminology.

But according to Art Andersen Jr. of Ault the entire document can be summarized in five key points. Andersen represents the Weld County Underground Water Users and has worked closely with the civil actions from which the decree was derived. According to Andersen, the key points are:

—Wells on the Poudre, adjudicated in 1953 by Judge Claude C. Coffin, are not presently subject to the regulations. —All other irrigation wells that do not have a plan of augmentation will be allowed to

—The amount of water necessary to be placed in the stream in order to keep pumping during the period of a valid call is not more than five per cent of the well's adjudicated capacity.

—This agreement will go for two years and be under Judge Donald Carpenter's jurisdiction in District I Water Court in Greeley.

—Any hardship case can be heard in the Water Court without filing a new case.

Andersen said that if well owners have technical questions regarding the regulations or the decree, they may call the Water Court or district engineer Dugan Wilkinson at the Water Resources office in Greeley, 352-8712.

2 GREELEY (Colo.) TRIBUNE Mon., March 25, 1974

High court reverses water referee rule

DENVER (AP) — The Colorado Supreme Court reversed a Routt District Court decision today, holding that under water law statutes that have since been repealed, the power of a referee to contradict conditional decrees was severely limited.

The district court had set aside in October 1970 prior conditional decrees of water rights obtained by Public Service Co. (PSC).

The court entered one decree for direct flow rights for the Saddle Mountain Pump Stations, and another for the Hinman Park Reservoir.

The district court appointed a referee according to legal procedures.

No evidence was presented to the referee, but he altered the court decision on both decrees two years later. The district court accepted the referee's recommendations.

In an opinion by Justice Edward Day, the high court said, "Although the statute and the order of appointment specify that the referee take evidence and report the same, the only function performed by the referee on the claim was to review the transcript of the hearings of the water judge's findings. This review procedure is not provided for by law."

The high court held that a referee cannot "make find-

ings—on the identical evidence used by the water judge—to contradict an overturn the court's decision without having received any additional evidence."

The court held that, "where a district court has made findings, the power of the referee to submit suggested contradictory findings is limited by the requirement that there must be evidence to support the actions of the referee."

In reversing judging after an appeal by PSC, the case was remanded to the water judge for reinstatement of the altered decrees.

The Supreme Court also denied a request from Charles Edward Nugent for a free transcript from Larimer District Court so he could appeal sentences imposed.

Nugent pleaded guilty to being accessory to second-degree burglary and accessory to possessing a narcotic drug. The district court sentenced him to a five-year maximum term.

The high court said Nugent was basing his appeal on a law that doesn't exist, and therefore

he wasn't entitled to the free transcript.

Nugent claimed that he should have been given credit for time spent in jail prior to sentencing. But the high court said "the sentencing judge noted in passing sentence that the prior time in jail was so considered."

Streakers are fined

DENVER (AP)—A female streaker who ran nude on a downtown Denver street with two nude males has been fined four times as much as them in separate appearances in Denver County Court.

Joella L. Keary, 19, of Denver; Michael Manchego, 20, and David McDermed, 21, both of Commerce City, were arrested shortly after midnight March 9 after police saw them running down the street holding hands.

Even though Miss Keary contended she participated only because of a dare, the prank cost her \$100. She pleaded guilty to indecent exposure before Judge Robert Commins.

Her male companions were fined \$25 each by Judge Robert Close after pleading no contest to charges of exposing their lower torsos. Public indecency charges against the two were dismissed.

Court officials said the case was the first in connection with the current streaking craze and indicated later fines may be more uniform.

In search of water

Modern pioneers follow founders' path

TRIBUNE 10-9-74

It all began back in 1882.

In that year a group of Weld and Larimer county farmers went to the western slope of the Rocky Mountains in search of water.

"We had good land," one of those pioneers reportedly said, "and we had the potential for good crops. But we needed water, we just could not depend on rain to provide the moisture.

"Why did we go over there for water? Well, we just had to have it. That's all there was to it."

That pioneer was right. The land he referred to is now some of the richest and most productive in the entire nation. It lies in an area more than 75 air-miles long, extending from the eastern slope of the Rockies.

The pioneer joined with others to form the Larimer County Ditch Co. and obtained some of the most senior rights to the Colorado River, just west of the Never Summer Range.

Only one claim to the headwaters of the Colorado is more senior to the rights of the group, "but the decree really doesn't amount to that much water," directors of the company proudly note.

Today the company is known as the Water Storage and Supply Co., the name picked after the re-organization of 1892.

The man who heads the company today has served on the board of directors of the group for more than 40 years, and has himself been responsible for some pioneering efforts. His name is Harvey Johnson of Fort Collins.

Johnson had good reason to be proud of his work and the support of the shareholders in the company last Monday. On that day, officials of more than a half-dozen governmental agencies toured, inspected and finalized the paperwork on the company's latest project: the enlargement of the Long Draw Reservoir.

Construction on the project began last year and was in the final stages this week. The project consists of the enlargement and reconstruction of the reservoir, which has served the company and the farmer-shareholders since the 1930s.

Before the project began, the Long Draw had a maximum capacity of about 4,000 acre-feet of water storage. Today, the reservoir is probably the largest privately owned high altitude storage facility in the state, with a capacity of more than 11,000 acre feet.

At a total cost of more than \$1.6 million, the reservoir will provide both ample water supplies for the 54,000 acres of irrigated farm lands under the

system but also more than 10,000 man-days of recreation for area residents.

Johnson explained that most of the funds for the project came from the Department of Agriculture under provisions of the Small Loan Reclamation Act of 1956. Under the act, the company borrowed about \$1.3 million, interest-free for a term of 50 years.

"When we started this project, we came into it clean. We didn't owe anybody anything. This is the first time in a long time that we will have a long-term debt to service," Johnson said.

Johnson said the remaining \$300,000 came through a grant from the Federal Parks department on the stipulation that the reservoir could be opened to the public for fishing and other recreational activities.

Some \$194,000 will be spent by the company for the establishment of camping and other recreational facilities.

Long Draw is one of two high mountain reservoirs in the company system. Chambers Lake, about 15 miles north of Long Draw, is another in the system which total more than a dozen reservoirs.

But behind the success of the company and the future potential of the Long Draw Reservoir

is the pioneering efforts of the founding group.

The drainage into the Long Draw from the mountains surrounding the reservoir on the east slope would amount to only a few thousand acre-feet annually.

Yet the company plans to move more than 23,000 acre-feet of water through the giant structure. The reason for the vast differences in water capacity dates back to those pioneers in search of water back in 1882.

After the plains farmers got the decree for the water of the Colorado, they had to find some method of transporting it across the continental divide.

One might think the only thing hanging desperately to a logical solution to the problem would be a tunnel or siphon tube through the mountains.

But those old pioneers had a better idea. In their search for the water, they discovered a "low spot" in the divide. The spot was near the Never Summer Range and right above the old town sight of Lula City in Phantom Valley.

The founders of the company decided that a ditch could be dug along the side of the mountain to catch the many site of the planning. But there was a hitch. Colorado and channel it across the divide and into the south fork of the Cache la Poudre.

So in September 1890, the designated as the streambed of the south fork of the Poudre.

And the law did not allow for the construction of a reservoir within the park boundaries. So the company sent a delegation to Washington, D.C., to request a change.

In June of 1930 Congress passed special legislation changing the boundaries of the National Park, thus allowing the construction of the original Long Draw.

It was during this era that the company purchased the rights to the Larimer Tunnel which diverts water from the Laramie River and dumps into the Poudre. That diversion provides another 19,750 acre-feet of water annually.

In total, the system delivers more than 92,000 acre feet of water for irrigation annually, about 65 per cent of which flows into Weld County for irrigation of crops.

"We're proud of our company and its contribution to the growth of northern Colorado.

We are just trying to continue the efforts of those pioneers who went in search of water almost a 100 years ago. We think that we are probably one of the biggest and surely one of the oldest water storage and supply companies in the state.

"The new reservoir capacity will not only assure ample water for the farmers who are dependent on it, but also provide some fine recreation where virtually none existed before," Johnson said.

Flood control meeting attracts large crowd

TOWN & COUNTRY NEWS 1-17-75
By Weld County Commissioner Glenn Billings

The Eight County Flood Control Commission meeting last Thursday, January 10th, was well attended: Congressman James P. Johnson, local legislators (Senator Bill Garnsey, Representatives Sears, Showalter and Younglund), persons of the Corps of Engineers Omaha office & Water Conservation Board and Commissioners from seven of the eight counties plus many interested people from the area.

The results of the meeting boiled down to what Congressman Johnson stated in the first few moments of the afternoon: There are no funds in sight for flood control for this area. There's lots of legislation with no appropriations.

The Army Corps of Engineers foresee earliest action on the Platte (completion of studies, introducing legislation, having legislation passed, appropriations for projects) in 1990. Currently the Corps is doing a study of the Platte which will be completed in 1976; their actions face delays because they must look at economic and social factors for alternatives and also prepare an environmental impact statement. As for current positive action, the most the Corps can offer is some technical



Billings

assistance.

Basic need voiced at the meeting by all Commissioneres was the need for preventive maintenance. If the rivers, especially the Platte and Poudre, could be cleared of trees, sandbars and debris during the year the floods would not be as destructive to property; too many County bridges were lost due to debris and huge trees piled up against them by flood waters. Private losses are far too great, too, and a bill is being redrafted in the legislature now to allow County governments temporary right-of-way to widen or deepen river channels so the floods may be more confined to river channels.

Senator Garnsey stated that the interim land use committee proposed funding and planning for expert help in some areas. He saw no reason why one of the bills which is strictly funding for counties and regions could not help in flood control. Although the land use committee did not discuss this specifically.

The meeting meant that more than ever, we must receive funding and help from the state level. Counties cannot afford to buy the machinery or sponsor the studies needed or construct necessary dikes and levees independently. For the cost of one year's flood damages we could initiate changes in the rivers that would create a green belt from Denver to Nebraska, providing recreation and thousands of acre feet of irrigation and domestic water, preserve farm ground and return streams to fish and wildlife havens.

Land use, water laws concern of legislators

1-26-74

By RON TOLLEFSON

Tribune Staff Writer

Land-use and water legislation are the major areas of interest to Colorado's farming community during the 1974 legislative session, several lawmakers representing Northern Colorado have indicated.

Of special interest is a bill that would authorize a state-wide system of river basin management authorities, a crowd attending this week's Colorado Farm Show learned.

"We've got to get a lot more efficient, do a better job of water management," said Sen. Fred Anderson, R-Loveland, chairman of the Senate Agriculture Committee. "We're not that short of water, but we need it available at the right times."

Speaking along with Anderson were Rep. Walt Younglund, R-New Raymer, chairman of the House Agriculture Committee, Rep. Virginia Sears, R-Greeley, a member of that House panel, and Sen. William Garnsey, R-Greeley, chairman of the Senate Business Committee.

During the session, the U.S. Environmental Protection Agency (EPA) came in for a few knocks from the legislators and their farm community audience. Especially criticized were federal water quality standards that will require, unreasonably, some farmers felt, runoff control systems to deal with water from feed lots and other ag operations.

Anderson said the basin management

bill now in his committee likely faces tough going. Earlier, Younglund told the Tribune the Denver-suburbs annexation fight could be a very difficult obstacle to such a bill, especially since the South Platte basin would be most affected by a basin management system.

Garnsey and Mrs. Sears pointed to the issue of land use controls as major and contentious. "This is probably the most controversial area we'll have," said Garnsey. He repeated his strong stand for land use legislation stressing local decision-making, not state-level powers.

Mrs. Sears urged citizens to notify legislators of their feelings on the several land use bills. She said nearly 40 bills bearing on land use concerns have been introduced.

Well regulations working well

10-12-72

By LYNN HEINZE
Tribune Staff Writer

After one full summer of irrigation under rules and regulations governing the use of irrigation wells along the South Platte River basin, the system seems to be working smoothly, according to Dugan Wilkinson, District I water engineer.

Wilkinson said, "The whole thing worked out very well for its first year of operation. In fact, I'd say the success was remarkable."

On March 15 of this year, the state and well users signed a decree of the District I Water Court and stipulations to the rules and regulations of the state engineer.

Under that agreement, well use is curtailed when there is a call on the river by senior appropriators. But the well users can continue to pump if the wells

are under some plan of augmentation which would provide supplemental water in the event of a call.

Of the estimated 6,500 wells in the basin which would come under the stipulations, some 4,500 belong to some plan of augmentation, Wilkinson said.

During the summer, the well owners under the plans were called on to provide more than 8,400 acre feet of supplemental water, but were allowed to pump water as needed.

One of the largest single contributors of supplemental water was a six-well-group located on a site along the channel of the Sterling Number 1 Ditch and operated under a plan of augmentation by the group known as GASP, Groundwater Appropriators of the South Platte. In mid-August, GASP was asked to deliver more than 86 second-feet of water at the well site, Wilkinson said.

"These wells are a short, quick supply of water at the point where it is needed. I think we'll see the development of more of these wells, although they do come under the same regulations as other wells in the system," Wilkinson said.

"What really impresses me is that we had a very dry year and yet have one of the best crops ever recorded here. I think the water users are more conscientious about their water and use it more efficiently.

"But it does show that it can be done. The water users understood what was going on and why this procedure is necessary and performed extremely well.

"Actually, everything worked out much better than we thought it would. We're happy about the cooperation we've received during the summer," Wilkinson said.

Johnson urges water users to act

TRIBUNE - 11-18-74

LAS VEGAS, Nev. (AP)—The Colorado River Water Users Association should campaign against political obstacles which are holding up construction of many western water projects, Rep. James Johnson, R-Colo., said today.

In remarks prepared for delivery at the association's annual meeting, Johnson called

on pro-reclamation forces to use news media and school to achieve their goal.

"You and I know that we need these completed projects if the reclamation West is to play a role in feeding this nation and the world," he said.

Johnson claimed few congressional and administration officials outside the West understand the need for reclamation projects which have been planned, but not funded. He criticized President Ford for holding up financing for some of the projects.

Water district to release additional 20 per cent quota

TRIBUNE 9-15-74

The board of directors of the Northern Colorado Water Conservancy District decided during a recent monthly meeting upon the release of an additional 20 per cent quota — 62,000 acre feet — to be available during the 1974 irrigation season.

The board recognized the irrigation needs during this period of hot, dry weather which has produced rapid growth of all field crops.

According to the board, "It is the desire of the board to be certain that adequate supplemental water be made

available to district allottees. The additional quota should provide assurance that crops which are well started can be brought to harvest at high crop yield levels."

The board noted that the Colorado-Big Thompson Project system has adequate water supply to permit the additional quota declaration without serious compromise of the storage which is to be carried over to 1975.

According to district manager J. R. Barkley, certification lists of district

allottees will be forwarded to ditch companies and other carrier systems within the next few days.

Council agrees to pass up Thompson water purchase

11-6-74

By JOHN SEELMEYER
Tribune Staff Writer

As the price of raw water has taken a dramatic climb in recent months, the Greeley Water and Sewer Board recommended Monday that the city council pass up two offers to buy 223 acre-feet units of Colorado-Big Thompson project water.

And, the council Tuesday agreed with the board's recommendation.

The offers to sell came from Sears Investment Corporation and A. W. Anderson. In both cases, the price was set at \$400

an acre-foot unit, considerably above recent prices.

City water director Olin Shaffer said the city's most recent purchase of Colorado-Big Thompson water came at a price of \$300 several months ago.

Water board member Tom Rapp said some of the increase in water prices has come from bidding from the City of Boulder.

"They're playing a game of catch-up," Rapp said. "Boulder has traditionally been deficient in water."

And, Boulder officials

Tuesday said they have entered the market for Colorado-Big Thompson water more aggressively in the past several months.

Boulder water engineer Tim Heydon said, "We've been buying a little more Big T water than we have in the past." He didn't have exact figures.

He said the purchases come as Boulder prepares for future growth.

Boulder presently gets its water supply from surface water in the area and Barker Reservoir. In addition, Boulder is involved with the Six Cities project, which is designed to bring West Slope water to east slope cities.

Of all the various water diversion projects, Boulder is in a geographic position to use only Colorado-Big Thompson water at this time.

Along with the price of the water rights, water board members cited Greeley's present supply of water in recommending that the city decline the offers.

Shaffer told the board the city presently uses about one-half of its water rights. And, new annexations to the city are required to bring water rights with them.

The board also passed on an offer to buy one-half share of Greeley-Loveland Irrigation Co. water from Dave Knaus. That offer was primarily a formality, Shaffer said.

Get Windy Gap water, water board urges city

TRIBUNE 6-4-74

A recommendation that the city proceed to formalize its commitment to take 6,000 acre-feet of the proposed Windy Gap Project water was made to City Council by the City Water and Sewer Board Monday evening.

The recommendation also includes that the city consider participating in any of the water that the other five Northern Colorado cities which joined Greeley in initiating a feasibility study of the project don't commit themselves to take.

The proposed project would divert 48,000 A-F of Western Slope water from a reservoir to be built near Granby through the facilities of the Colorado Big Thompson Project to six cities.

The recommendation was adopted by the Water and Sewer Board despite a

warning by City Manager Peter Morrell that the city also possibly may have to raise several million dollars to improve the sewer system.

W. D. Farr, board chairman, conceded the city would be obligated to pay about \$240,000 a year if it takes the 6,000 A-F of Windy Gap water.

However, he pointed out that it likely will be four or five years before the \$17 million project will be completed. The city's payments also will be at a minimum the first few years of the 30-year repayment period, he said.

"This commitment is a means of guaranteeing water for the city's future at very attractive prices," Farr continued.

He added the current price for CTB

water is \$350 a unit while the price for Windy Gap water will be equivalent to about \$340.

"This is the last new water we will ever be able to get," Farr observed, adding that a number of water districts, the town of Fort Lupton and several industries have applied to get some of the water if any of the original six cities decide not to participate.

The other cities are Fort Collins, Loveland, Estes Park, Longmont and Boulder.

Board member James H. Shelton, moved the board make the recommendation to the council, saying he believed water was never going to get any cheaper and the city has to commit itself if it expects to get any of the water.

Time extensions asked to tally water rights

TRIBUNE 10-1-74

By CARL HILLIARD

Associated Press Writer

DENVER (AP) — Deadlines for tabulation of water rights in Colorado's seven water districts are unrealistic, an interim water committee has decided. It asked the state engineer's office to go to court today and seek more time.

A spokesman for the state engineer, Don Hamburg, said the tabulation was to be completed by Nov. 30. He said the state engineers office had prepared a lawsuit, to be filed in Water Division No. 1 in Greeley today, to extend that time period to May 1, 1975.

Similar motions will be filed

in the other six districts later today, Hamburg said.

Mechanically, he said, it isn't possible to get the complicated tabulation process completed by the deadline set by the legislature—even with the use of computers.

The interim committee heard the arguments against the Nov. 30 deadline during a meeting at the State Capitol Building Monday and adopted a resolution asking State Engineer Clarence Kuiper to seek the delaying action in the courts.

The districts involved are the South Platte, Arkansas, Rio Grande, Gunnison, Colorado River proper, Yampa-White Rivers, and the San Juan and its tributaries.

The delay, Hamburg said, is to allow the legislature time to review the deadlines it imposed on the state engineer, and to revise them. He said the state engineer's office advised the lawmakers last year that the times set for the job—which involves some 30,000 owners of water rights—wasn't enough.

The lawsuit was to be filed in the name of the people of the state through the engineer.

The legislature, in 1969, initiated the tabulation law in order to establish an authentic list of water rights holders and the seniority of their water right. Prior to that there were 70 water districts and seven water divisions.

The legislature repealed the

districts, leaving only the seven divisions within the main basins of the state, and told the state engineer to prepare a tabulation of all the water rights in those former districts.

The revised law contained provisions to allow rights holders time to object to their redesignation, and those protests have been made—but there simply hasn't been time to review them and enter final decrees.

And, with increasing development of natural resources, requiring the use of water in those basin areas, the need for orderly tabulation is evident.

Big Thompson water supply above normal

Water supplies in the Colorado-Big Thompson system were above normal through June 30, according to a study prepared by the Department of Interior.

The Colorado-Big Thompson system supplies domestic and irrigation water to Greeley and parts of Weld County.

The Interior Department report showed precipitation from October through June to be slightly below average levels at Grand Lake and Lake Estes. As a result, the report notes,

runoff into the lakes has also been slightly below normal.

But, the report continues, reservoirs in the Colorado-Big Thompson system are filled to about 120 per cent of their 10-year average. And, deliveries from the system were running about 116 per cent of the yearly average.

The report concludes, "All projects in the system have ample to abundant water supply for the remainder of the season."

Judge delays water right tabulation

By FRANK COLOHIAN

10-8-74-Tribune Staff Writer

An order giving defendants until next May 2 to respond to a complaint filed by the State Engineer's office in the Division 1 Water Court here was signed by Judge Donald A. Carpenter, water judge for the division, last week.

The order also directs that the state engineer's office take no further action with regard to implementing the provisions of the state's water rights tabulation law until after the defendants' responses have been received.

In issuing the order, Judge Carpenter granted a motion of the attorneys for a group of defendants, specifically Northern Colorado Water Conservancy District, the city of Thornton, Conrad E. Schaeffer, South Platte Ditch Co. and Weldon Valley Ranches Inc.

The state engineer's office earlier in the week had filed a complaint for a declaratory judgment, extending the deadlines for its giving notice of the tabulations.

The complaint said that one of the requirements of the law was that not later than July 10, 1974, each division engineer was to have caused publication of a notice of a tabulation for his division, so the tabulation could be inspected or a copy obtained by interested parties.

The tabulations for the seven water divisions of the state were completed as required by law and notice given, the complaint said.

However, it added that due to mechanical failures beyond the control of the division engineers or the state engineer, copies of the tabulations were not available as they were to have been pursuant to the notices.

As a result, persons who might have wished to object to the manner in which a water right or a conditional water right had been listed in the

tabulation were unable to do so effectively by Sept. 10, the date set by the statute.

This in turn prevented the division engineers from making proper revisions by Oct. 10 as required by the law or to make provision for publication by Oct. 20, also required by the law.

"Because of the ineffectiveness of the foregoing procedures," the complaint said, "persons who might wish to protest by the Nov. 30 deadline cannot do so effectively, so as to give the water judge the jurisdiction which he must have to enter a judgment and decree."

The complaint asked the court to authorize the engineers to suspend further actions required of them by the law subsequent to Sept. 10; authorizing the objections authorized by the statute to be filed up to Jan. 10, 1975, and authorizing further procedures compatible with the postponement of dates.

A spokesman for the state engineer's office said last week the delay will allow the legislature time to review the deadlines it imposed on the state engineer.

He said the state engineer had advised the lawmakers last year that the times set for the job weren't enough. The tabulation list involves some 30,000 owners of water rights.

The 1969 statute would establish an authentic list of water rights holders and the seniority of their water rights.

TOTAL COUNTY POPULATION FOR JULY 1, 1975 AND 1980 FROM THE COHORT-SURVIVAL PROGRAM

County	County Population				County Population Percentage			
	1970	% Change	1975	% Change	1980	1970	1975	1980
1. Adams	185,789	23.93%	230,256	21.20%	279,071	8.41%	8.60%	8.65%
2. Alamosa	11,422	14.35	13,061	13.41	14,813	.52	.49	.46
3. Arapahoe	162,142	28.13	207,750	24.82	259,322	7.35	7.76	8.03
4. Archuleta	2,733	-22.76	2,111	-21.60	1,655	.12	.08	.05
5. Baca	5,674	.81	5,693	.53	5,723	.26	.21	.18
6. Bent	6,493	-.69	6,448	-.11	6,441	.29	.24	.20
7. Boulder	131,889	34.78	177,762	31.05	232,967	5.98	6.64	7.22
8. Chaffee	10,162	14.56	11,642	13.21	13,180	.46	.43	.41
9. Cheyenne	2,396	1.29	2,427	1.69	2,468	.11	.09	.08
10. Clear Creek	4,819	50.90	7,272	44.33	10,499	.22	.27	.33
11. Conejos	7,846	9.51	8,592	10.59	9,502	.36	.32	.29
12. Costilla	3,091	6.86	3,303	7.72	3,558	.14	.12	.11
13. Crowley	3,086	-5.57	2,914	-5.46	2,755	.14	.11	.09
14. Custer	1,120	15.63	1,295	15.44	1,495	.05	.05	.05
15. Delta	15,286	11.06	16,977	9.63	18,621	.69	.63	.58
16. Denver	514,678	10.47	568,542	9.71	623,748	23.32	21.22	19.32
17. Dolores	1,641	-9.14	1,491	-7.84	1,374	.07	.06	.04
18. Douglas	8,407	56.85	13,186	50.26	19,814	.38	.49	.61
19. Eagle	7,498	32.37	9,925	28.83	12,791	.33	.37	.40
20. Elbert	3,903	24.83	4,874	22.26	5,959	.17	.18	.18
21. El Paso	235,972	33.47	314,946	30.32	410,424	10.69	11.76	12.72
22. Fremont	21,942	16.49	25,561	15.27	29,463	.95	.95	.91
23. Garfield	14,821	14.82	17,018	13.30	19,281	.67	.64	.60
24. Gilpin	1,272	47.96	1,882	42.72	2,686	.06	.07	.08
25. Grand	4,107	38.91	5,705	33.30	7,605	.19	.21	.24
26. Gunnison	7,578	17.41	8,897	16.21	10,339	.34	.33	.32
27. Hinsdale	202	43.56	290	40.68	408	.01	.01	.01
28. Huerfano	6,590	-2.32	6,437	-2.02	6,307	.30	.24	.20
29. Jackson	1,811	24.52	2,255	22.53	2,763	.08	.08	.09
30. Jefferson	235,300	35.80	319,526	32.59	423,665	10.56	11.95	13.13
31. Kiowa	2,029	3.70	2,104	4.04	2,189	.09	.08	.07
32. Kit Carson	7,530	7.13	8,067	6.12	8,561	.34	.30	.27
33. Lake	8,282	.74	8,343	1.56	8,473	.37	.31	.26
34. La Plata	19,199	12.64	21,625	11.72	24,159	.87	.81	.75
35. Larimer	89,900	34.92	121,290	31.31	159,262	4.07	4.53	4.93
36. Las Animas	15,744	6.91	16,832	7.77	18,140	.71	.63	.56
37. Lincoln	4,836	10.13	5,326	9.59	5,837	.22	.20	.18
38. Logan	18,852	3.36	19,485	3.55	20,176	.85	.73	.63
39. Mesa	54,374	9.41	59,489	8.33	64,444	2.46	2.22	2.00
40. Mineral	786	38.80	1,091	34.22	1,463	.04	.04	.05
41. Moffat	6,525	-2.04	6,392	-2.33	6,243	.30	.24	.19
42. Montezuma	12,952	8.03	13,992	7.66	15,064	.59	.52	.47
43. Montrose	18,366	.63	18,482	1.06	18,678	.83	.71	.58
44. Morgan	20,105	18.02	23,728	17.29	27,831	.91	.89	.86
45. Otero	23,523	.77	23,705	.97	23,934	1.07	.88	.74
46. Ouray	1,546	18.82	1,837	17.31	2,155	.07	.07	.07
47. Park	2,185	59.54	3,486	51.66	5,287	.10	.13	.16
48. Phillips	4,131	1.91	4,210	1.52	4,274	.19	.16	.13
49. Pitkin	6,185	55.88	9,641	48.07	14,275	.28	.36	.44
50. Prowers	13,258	6.40	14,107	6.41	15,011	.60	.53	.47
51. Pueblo	118,238	7.49	127,092	7.41	136,513	5.36	4.74	4.23
52. Rio Blanco	4,842	-15.08	4,112	-13.57	3,554	.22	.15	.11
53. Rio Grande	10,494	7.50	11,281	7.74	12,154	.48	.42	.38
54. Routt	6,592	32.37	8,726	28.65	11,226	.30	.33	.35
55. Saguache	3,827	-1.28	3,778	-.16	3,784	.17	.14	.12
56. San Juan	831	4.21	866	4.27	903	.04	.03	.03
57. San Miguel	1,949	-.92	1,931	-.62	1,943	.09	.07	.06
58. Sedgwick	3,405	-.76	3,379	-.26	3,369	.15	.13	.10
59. Summit	2,665	79.88	4,794	77.12	8,491	.12	.18	.26
60. Teller	3,316	38.36	4,588	34.11	6,153	.15	.17	.19
61. Washington	5,550	-2.38	5,418	-2.09	5,305	.25	.20	.16
62. Weld	89,297	25.82	112,357	25.16	140,628	4.05	4.19	4.36
63. Yuma	8,544	6.00	9,057	5.34	9,541	.39	.34	.30
Total	2,209,528 ^a	21.23%	2,678,647	20.50%	3,227,718	99.99% ^b	100.01% ^b	100.04% ^b

^aCorrect current Bureau of the Census total for Colorado.

^bTotals do not equal 100.00 percent due to rounding.

Statistical information on this sheet is supplied by the Colorado Division of Planning, Demographic Section, Rm. 524 Social Services Building, 1575 Sherman Street, Denver, Colorado 30203, Phone (303) 592-2173

Population of Grand Ditch and Trench
1960 and 1970-1974

Date compiled May 29, 1974

Note: most of the 1974 estimates of city population were obtained by questionnaire from city officials. These estimates were compared with data prepared by the Division of Planning from housing unit counts shown on building permit reports for 1970-1973. The city estimates also include population increased since 1970. In a few instances the city estimates were prepared by the Division of Planning.

These estimates are not enclosed by the Division of Planning for Revenue sharing purposes.

Add Kern - San Joaquin County - Surveyed 1973 - Pop - 300
Sechovic - Weld County - Surveyed 1974 - Pop - 800

Population of Colorado Cities and Towns, 1960 and 1970-1974

City	County	Total Population						Area in Acres	Population Density
		Apr 1960	July 1971	July 1972	July 1973	July 1974	July 1974		
Copeland	Fountain	777	900	700	200	700	640	700	
Canon	Washington	1890	1825	4850	1880	1900	640	1900	
Alamosa	Alamosa	6205	7121	7210	7300	7377	1880	2509	
Alma	Park	107	75	80	100	100	240	320	
Antonito	Colorado	1045	1075	1150	1175	1200	244	3150	
Arriba	Fowler	296	254	265	270	279	220	811	
Arvada	Adams	19242	49083	58681	71000	80358	9895	5218	
Aspen	Pitkin	1101	2437	3045	4000	5500	1052	3438	
Aurora	Weld	799	841	850	900	1000	354	1741	
Aurora	Adams	48648	74994	92000	107000	129000	34521	8393	
Aurora	Weld	1021	4163	1250	4350	1450	700	133	
Basalt	Garfield	213	419	600	700	800	124	4123	
Basalt	Ft. Collins	302	320	394	358	390	186	1315	
Basalt	Weld	287	613	719	727	850	154	3542	
Basalt	Weld	1014	1446	1800	2100	2200	640	2200	
Basalt	Weld	70	99	99	99	99	80	792	
Basalt	Weld	171	217	219	220	222	887	161	
Basalt	Weld	233	212	230	240	260	700	239	
Basalt	Weld	-	8	200	300	350	1400	159	
Basalt	Weld	19	18	16	24	15	260	10	
Basalt	Weld	548	448	500	550	600	234	1644	
Basalt	Weld	57718	66870	70692	74000	75995	8893	5424	
Basalt	Weld	748	945	965	977	1100	500	1408	
Basalt	Weld	124	70	70	70	70	340	132	
Basalt	Weld	393	548	635	1100	1500	719	1239	

Population of Colorado Cities and Towns, 1960 and 1970-1971

City	County	Total Population					Pop. in 1970	Pop. in 1971	Pop. in 1972
		Apr. 1960	Apr. 1970	July 1970	July 1971	July 1972			
Brighton	Adams	7,055	8,309	8,471	8,663	12,000	13,840	19,810	4,452
Boulder	Boulder	163	173	177	180	183	184	—	—
Broomfield	Broomfield	—	7,261	7,432	7,647	12,000	14,189	4,281	2,220
Burton	Burton	3,621	3,977	3,500	4,000	4,500	5,000	1,050	3,049
Burns	Burns	1,806	1,962	1,991	2,129	2,200	2,250	1,120	1,415
Burlington	Burlington	2,090	2,828	2,875	2,925	3,000	3,300	650	3,261
Calhan	Calhan	347	465	470	480	500	512	580	565
Canon	Canon	235	206	212	214	218	220	94	1,497
Canon City	Canon City	8,973	9,206	9,368	9,494	9,936	10,166	2,888	2,259
Carbondale	Carbondale	612	726	750	778	1,300	1,300	260	1,952
Castle Rock	Castle Rock	1,152	1,531	1,585	1,700	2,200	2,500	2,000	806
Cheraw	Cheraw	549	581	600	650	700	750	595	807
Cheraw	Cheraw	1,600	1,470	1,475	1,480	1,490	1,500	332	2,890
Central City	Central City	250	228	265	275	310	317	629	322
Cheraw	Cheraw	173	129	130	131	132	133	40	2,128
Cherry Hill	Cherry Hill	1,931	4,605	4,864	5,101	5,167	5,496	4,040	869
Cherokee	Cherokee	1,080	982	984	986	988	1,100	612	1,151
Chick Creek	Chick Creek	206	207	208	209	210	212	260	522
Chickadee	Chickadee	219	101	105	110	115	125	123	667
Collbran	Collbran	310	225	230	234	238	240	90	1,702
Colorado Springs	Colorado Springs	70,194	135,060	144,223	155,826	165,000	172,000	57,631	2,014
Columbine Valley	Columbine Valley	—	481	489	501	550	594	500	761
Commerce City	Commerce City	8,970	17,497	17,649	17,847	17,900	18,000	4,661	2,466
Cortez	Cortez	6,264	6,232	6,300	6,600	6,600	6,600	3,345	1,269
Craig	Craig	3,984	4,205	4,300	4,400	4,500	4,500	810	3,571
Crawford	Crawford	147	171	175	180	180	180	136	853

Population of Colorado Cities and Towns, 1960 and 1970 and 1970-1974 (4)

City	County	Total Population					July 1974	Change in Decade	Population at July 1974
		Apr. 1960	Apr. 1970	July 1972	July 1973	July 1974			
Eric	Weld	875	1090	1125	1150	1208	1300	957	8207
Estes Park	Summit	1175	11616	1665	1200	1800	2200	1958	719
Evans	Weld	1453	2570	2818	3115	4500	4500	1408	2045
Fairplay	Park	404	419	427	430	440	450	440	655
Federal Heights	Adams	391	1502	2000	3200	5880	9000	1130	5085
Fifeville	Weld	276	570	584	600	625	663	160	2652
Flagler	Kit Carson	693	615	625	640	660	675	300	11440
Florissant	Dogson	354	249	350	360	375	400	243	1054
Florissant	Summit	2821	2846	2875	2925	3000	3200	1300	1576
Fort Collins	Lincoln	25027	42337	45159	50578	53000	57750	9920	3726
Fort Lupton	Weld	2194	2489	2600	2700	2900	3100	696	2852
Fort Morgan	Morgan	7379	7594	7653	7704	8100	8200	1332	3940
Frankton	El Paso	1602	3515	4000	5000	6600	7000	4000	1120
Frankton	El Paso	1240	1241	1245	1250	1254	1257	180	4493
Frankton	El Paso	253	221	250	225	335	350	163	1373
Frankton	Weld	595	696	723	730	740	750	450	1067
Frankton	Weld	15	24	24	24	24	24	-	-
Frankton	Summit	316	471	496	500	510	531	450	741
Frankton	Summit	1820	1822	1837	1865	1918	2000	736	1739
Frankton	Weld	129	142	147	152	157	250	65	2461
Frankton	Weld	186	161	163	165	167	170	154	705
Frankton	Clear Creek	207	542	584	590	596	800	397	1290
Frankton	Weld	357	382	405	410	415	415	352	755
Frankton	Carroll	468	765	1037	2000	2500	3000	298	6438
Frankton	Adams	3627	4106	4500	5000	5700	6275	3580	1147

(5)

Population of Colorado Cities and Towns, 1960 and 1970-1974

City	County	Total Population					Area in acres	Population Density
		Apr. 1960	Apr. 1971	July 1972	July 1973	July 1974		
Arden	Jefferson	7,118	10,392	11,003	11,279	12,800	4,438	1,847
Strada	Harvey	593	560	570	582	585	506	740
Strand	Strand	503	563	591	728	900	200	2,875
Strand Junction	Mesa	18,694	20,170	21,000	22,000	23,592	5,355	2,819
Strand Lake	Strand	170	184	200	280	325	398	523
Strand Valley	Hotfield	245	370	340	380	440	169	1,515
Strickland	Weld	26,314	38,902	44,221	49,100	57,500	5,760	5,889
Stronight Park	El Paso	179	359	383	440	456	2,000	146
Stronwood Village	Carroll	572	3,695	3,422	3,500	3,550	3,960	594
Stronwood	Weld	133	121	110	100	90	430	134
Sturmon	Sturmon	3,477	4,613	4,822	5,100	5,313	1,887	1,801
Sturmon	Boyle	858	420	440	445	450	309	932
Sturmon	Boyle	164	129	126	125	120	100	768
Sturmon	Boyle	169	135	138	136	134	400	214
Sturmon	Phillips	990	899	960	1,000	1,040	315	2,033
Sturmon	Phillips	764	763	1,200	1,440	1,600	662	1,547
Sturmon	Morgan	157	121	175	200	225	80	1,800
Sturmon	Proctor	1,108	993	997	1,000	1,250	460	1,739
Sturmon	Phillips	1,555	1,640	1,645	1,650	1,655	975	1,087
Sturmon	Alamogordo	58	80	90	100	116	160	464
Sturmon	Delta	626	507	507	508	508	500	650
Sturmon	Jefferson	237	220	250	276	300	270	711
Sturmon	Weld	430	518	530	535	540	290	1,192
Sturmon	Lincoln	811	759	775	765	840	953	1,449
Sturmon	Clear Creek	1,480	2,003	2,200	2,225	2,500	385	4,153

Population of Colorado Cities and Towns, 1960 and 1970-1974 (6)

City	County	Total Population					Area in Acres	Population Density Per Acre	
		Apr. 1960	Apr. 1970	July 1971	July 1972	July 1973			July 1974
Aspen	Inglis	609	613	620	645	700	1000	580	1683
Bluff	Logan	204	193	194	195	195	195	120	1050
Canon City	Fowler	107	185	191	200	216	200	100	1280
Canon City	Welder	976	1,191	1,238	1,290	1,440	1,535	340	2870
Canon City	Elbert	1840	1,578	1,580	1,585	1,587	1,590	825	1,233
Canon City	Welder	409	427	423	440	500	510	260	1,231
Canon City	Welder	13	6	6	6	6	6	126	26
Canon City	Welder	378	474	507	650	700	1000	176	3,636
Canon City	Elbert	195	236	240	245	259	260	38	4,377
Canon City	Elbert	356	320	230	235	245	245	330	475
Canon City	Elbert	576	764	776	815	1000	1500	384	2,500
Canon City	Elbert	2,612	3,498	4,000	5,000	7,000	7,700	3,455	1,486
Canon City	Elbert	724	768	775	780	784	800	340	1,505
Canon City	Elbert	8,026	7,938	7,938	7,972	8,188	8,200	1,437	3,644
Canon City	Elbert	106	91	100	110	125	140	285	311
Canon City	Elbert	28	17	17	17	17	17	156	70
Canon City	Elbert	-	92,743	96,999	104,482	110,000	120,000	19,800	3,883
Canon City	Elbert	7,369	7,797	7,877	7,983	8,000	8,000	1,999	2,562
Canon City	Elbert	1,070	1,227	1,300	1,350	1,450	1,680	354	929
Canon City	Elbert	3,402	3,148	3,200	3,400	3,600	3,800	640	3,800
Canon City	Elbert	632	589	589	589	589	600	405	948
Canon City	Elbert	4,018	4,314	4,325	4,350	4,376	4,500	800	3,600
Canon City	Elbert	1,811	1,814	1,825	1,850	1,876	2,000	720	1,278
Canon City	Elbert	13,670	26,466	28,644	30,410	32,000	34,000	5,600	3,586
Canon City	Elbert	310	329	323	326	361	362	130	1,783
Canon City	Elbert	11,489	23,209	24,326	26,958	29,350	32,863	5,305	3,964
Canon City	Elbert	2,273	2,409	2,508	2,626	3,300	3,700	660	3,589

Population of Colorado Cities and Towns, 1960 and 1970-1974 (17)

City	County	Total Population						Area in Acres	Population Density Per Acre
		Apr. 1960	Apr. 1970	July 1971	July 1972	July 1973	July 1974		
Fremont	Fremont	9,794	16,220	17,800	19,800	22,600	21,350	4,255	3,431
Lamar	Boulder	706	958	960	965	970	1,000	760	1,391
Manitou	Conjor	831	814	825	850	875	900	640	900
Manitou	Montezuma	892	709	750	800	850	890	320	1,780
Manitou Springs	El Paso	3,626	4,278	4,380	4,310	4,324	4,500	1,600	1,800
Manitou	Weld	562	451	455	460	465	469	165	1,818
Meridian	Weld	192	195	205	220	225	230	82	1,797
Monte Vista	Summit	—	—	—	—	—	50	—	—
Monte Vista	Rocky Mountain	1,655	1,597	1,620	1,630	1,653	1,800	420	2,744
Monte Vista	Jefferson	268	260	262	265	269	275	80	2,200
Monte Vista	Weld	630	702	723	735	800	1,000	320	2,000
Monte Vista	Weld	662	706	734	805	819	950	49	12,418
Monte Vista	Adams	104	98	100	115	120	130	640	130
Monte Vista	Rocky Mountain	3,385	3,909	3,920	3,930	3,949	3,954	808	5,138
Monte Vista	Summit	17	6	6	6	6	6	—	—
Monte Vista	Monte Vista	5,094	6,496	6,552	6,622	7,011	7,200	1,298	3,547
Monte Vista	El Paso	204	393	421	445	500	800	350	1,963
Monte Vista	Jefferson	426	439	436	435	434	422	80	3,851
Monte Vista	Jefferson	326	706	708	710	700	950	50	12,164
Monte Vista	Butte	—	—	—	—	—	200	—	—
Monte Vista	Chaffee	—	—	—	—	—	100	—	—
Monte Vista	Monte Vista	979	820	815	810	805	800	320	1,600
Monte Vista	Boulder	272	492	495	500	510	515	900	366
Monte Vista	El Paso	447	499	504	513	556	650	580	846
Monte Vista	Adams	—	27,837	29,461	31,210	32,000	35,000	4,142	5,410
Monte Vista	San Miguel	443	408	414	419	426	430	78	3,526
Monte Vista	Monte Vista	906	949	950	950	950	950	300	2,029
Monte Vista	Weld	328	269	260	250	240	230	640	230
Monte Vista	Butte	666	492	525	600	700	800	182	2,817

Population of Colorado Cities and Towns, 1960 and 1970-1971 (8)

City	County	Total Population						Sexes in 1970	Population in 1970
		Apr 1960	Apr 1970	July 1970	July 1971	July 1972	July 1973		
Clatskanie	Montrose	779	756	760	765	770	775	600	527
Cherry Springs	Crowley	263	264	265	269	274	280	160	1120
Clifton	San Miguel	—	6	6	6	6	6	—	—
Clifton	Crowley	1254	1017	1025	1038	1055	1200	438	1752
Clifton	Washington	568	521	522	523	525	535	110	3056
Clifton	Crowley	785	741	752	755	759	835	105	5058
Clifton	Logan	571	463	465	466	470	476	101	3010
Clifton	Archuleta	1374	1360	1400	1500	1700	2000	709	1806
Clifton	Meeker	860	874	880	886	890	900	140	4115
Clifton	El Paso	542	947	1100	1200	1300	1400	2000	449
Clifton	Phillips	81	52	50	47	46	45	203	142
Clifton	Dillon	1083	1161	1160	1155	1153	1150	218	3372
Clifton	Fowler	218	186	187	189	192	195	52	2401
Clifton	Weld	424	452	475	500	600	700	400	1120
Clifton	Sumner	94	44	45	47	50	60	160	240
Clifton	Weld	582	683	750	950	1000	1300	287	8599
Clifton	Chaffee	201	198	203	211	210	225	640	225
Clifton	DuFur	6	24	24	24	24	24	—	—
Clifton	Rocky	247	170	171	175	180	185	87	11361
Clifton	Front	39	28	39	40	42	45	14	2257
Clifton	Front	91181	97463	99126	102525	103000	105000	15000	3223
Clifton	El Paso	109	101	97	95	90	90	100	576
Clifton	Rio Grande	1464	1591	1605	1610	1614	1650	804	1314
Clifton	Weld	91	68	70	72	75	80	353	145
Clifton	Weld	586	621	625	635	645	650	149	2792
Clifton	Dakota	353	275	280	290	295	300	312	615
Clifton	Ouray	257	242	263	264	265	265	40	4240
Clifton	Garfield	2135	2150	2180	2216	2300	2400	547	2572

Population of Colorado Cities and Towns, 1960 and 1910-1974 (9)

City	County	Total Population						Area in Acres	Population Density Per Acre
		1960	1970	1971	1972	1973	1974		
Rockvale	Frederick	413	359	359	359	359	256	898	
Rocky Ford	OTFD	4,929	4,859	4,870	4,890	4,917	986	3,245	
Rockwell	Comanche	339	352	353	354	355	60	3,787	
Roadside	Weld	70	66	67	68	69	10	4,930	
Roys	Pueblo	129	207	210	211	213	25	5,504	
Sagebrush	Saguache	722	642	645	650	671	160	3,800	
Salida	Chaffee	4,560	4,355	4,450	4,500	4,600	854	3,598	
Salisbury	Comanche	679	638	636	634	632	960	420	
Salmon Fork	Costilla	—	781	800	900	1,000	400	1,760	
Salvo-Pitt	San Miguel	30	26	26	26	26	80	832	
Sedgewick	Sedgewick	299	208	210	220	225	200	736	
Seibert	El Niño	210	192	193	194	195	170	738	
Severance	Weld	70	59	60	61	65	69	603	
Shelton	Chaffee	3,559	4,787	4,850	4,950	5,000	1,226	3,036	
Sheldon Lake	Elbert	90	86	87	88	89	70	4,250	
Silt	Weld	384	434	439	446	461	70	4,250	
Silver Cliff	Weld	153	126	127	128	129	1280	65	
Silver Plume	Chaffee	86	164	177	178	180	151	784	
Silver Thimble	Chaffee	—	400	430	474	500	566	622	
Silver Thimble Summit	Summit	—	297	770	770	670	320	1,400	
Silverton	San Juan	822	460	462	465	490	380	808	
Simola	Elbert	450	1,660	1,666	1,674	1,710	301	3,706	
Springfield	Baca	1,791	1,660	1,667	1,68	169	—	—	
Starbuck	San Juan	261	166	167	168	169	—	—	
Steamboat Springs	Park	1,843	2,340	2,354	2,462	2,727	4,519	496	
Steamboat	Park	10,251	10,636	10,678	10,770	10,920	1,854	4,910	
Stirling	Weld	650	790	794	799	803	380	1,624	
St. Francis	Weld	409	307	307	307	306	160	1,230	
Sturgis City	Chaffee	—	—	—	—	—	—	—	

Population of Colorado Cities and Towns, 1960 and 1970 and 1970-1977 (10)

City	County	Total Population					Area in acres	Population Density (per sq. mile)
		1960	July 1, 1961	June 1, 1962	July 1, 1963	July 1, 1964		
Aspen	Boulder	172	175	200	240	250	100	1,579
Avon	Clear	348	383	385	389	400	20	2,656
Boulder	Boulder	677	557	559	1,000	1,000	278	2,353
Canon City	Fremont	11,253	10,000	11,000	21,000	21,000	9,867	4,882
Castle Rock	Elbert	150	180	182	183	200	95	1,707
Centennial	Denver	10,691	9,940	10,000	10,280	10,500	2,118	2,172
Colorado Springs	El Paso	111	139	140	146	150	160	600
Colorado	El Paso	4,344	2,76	300	327	330	238	887
Colorado	El Paso	107	85	95	97	100	10	1,600
Colorado	El Paso	130	130	130	130	130	140	594
Colorado	El Paso	809	907	1,050	1,015	1,100	132	5,332
Colorado	El Paso	5,071	4,325	4,400	4,600	4,600	1,560	1,814
Colorado	El Paso	856	989	1,006	1,046	1,050	160	1,280
Colorado	El Paso	9	45	55	85	85	160	340
Colorado	El Paso	532	700	850	950	1,015	167	4,100
Colorado	El Paso	306	244	245	243	265	230	232
Colorado	El Paso	13,850	20,262	23,128	25,770	23,000	16,000	1,320
Colorado	El Paso	—	2,108	2,200	3,600	3,600	5,653	1,110
Colorado	El Paso	383	357	367	367	370	50	4,228
Colorado	El Paso	57	75	80	84	85	610	85
Colorado	El Paso	1,507	1,680	1,800	2,000	2,400	800	1,220
Colorado	El Paso	666	1,300	1,600	4,500	2,000	940	1,281
Colorado	El Paso	3,052	1,953	2,000	2,071	2,100	656	2,049
Colorado	El Paso	312	282	290	295	300	174	1,123
Colorado	El Paso	1919	2,263	2,275	2,316	2,330	2,000	746



CURRENT POPULATION REPORTS

 FEDERAL-STATE COOPERATIVE PROGRAM FOR
Population Estimates

U. S. DEPARTMENT OF COMMERCE • Social and Economic Statistics Administration • BUREAU OF THE CENSUS

Series P-26, No. 62

Issued April 1974

**ESTIMATES OF THE POPULATION OF COLORADO COUNTIES
 AND METROPOLITAN AREAS: JULY 1, 1972 AND 1973**

This report presents population estimates for July 1, 1972 and provisional estimates for July 1, 1973, for counties and metropolitan areas prepared under the auspices of the Federal-State Cooperative Program for Local Population Estimates. The objective of this program is the development and publication of State-prepared estimates of the population of counties using uniform procedures largely standardized for data input and methodology. The methods used have been mutually agreed upon by the individual States and the Bureau of the Census on the basis of a test of methods against the 1970 census. For a more detailed description of the program and an analysis of the test results, see *Current Population Reports, Series P-26, No. 21, "Federal-State Cooperative Program for Local Population Estimates: Test Results--April 1, 1970,"* April 1973.

County estimates for July 1, 1971 and provisional estimates for July 1, 1972 were published earlier in *Current Population Reports, Series P-26, No. 17*. The provisional estimates in that report are superseded by the numbers published here. Because of changes in input data for some counties since that report, estimates shown here may not always be completely comparable with those for the earlier years.

The estimates shown here for the 63 counties in the State were prepared by the Colorado Division of Planning. This agency was designated by the Governor to work with the Bureau of the Census

in implementing and carrying out the Federal-State Cooperative Program.

The estimates shown for July 1, 1972 are based on an average of the following methods, adjusted to agree with the July 1, 1972 State estimates published in Series P-25, No. 508.

1. The Regression (ratio-correlation) method. In the Regression method a multiple regression equation is used to relate changes in a number of different data series to change in population distribution.¹ The series of data used in the Regression method for Colorado are: elementary school enrollment in grades 1 through 8 plus elementary special and elementary ungraded (X_1), automobile registrations (X_2), sales tax (X_3), covered employment (X_4), and two-year average of resident deaths (X_5). The prediction equation for Colorado for the 1970's is given by

$$\hat{Y} = -0.0014 + 0.3628X_1 + 0.0243X_2 - 0.0225X_3 \\ - 0.0199X_4 + 0.0020X_5$$

¹Descriptions of methodologies are given in *Current Population Reports, Series P-25, No. 427 and 460*. Modifications made to the methodologies for the current series will be given in forthcoming reports in Series P-25.

2. Component Method II. This method employs vital statistics to measure natural increase and school enrollment to measure net migration. The estimates made by the Census Bureau's Component Method II are specific to the civilian population under 65. To this population is added an estimate of the resident military population based on station strength statistics and an estimate of the population 65 and over based on Medicare statistics.¹

The provisional July 1, 1973 estimates for large metropolitan counties were developed by adding the average change between 1972 and 1973 estimates based on Component Method II and the Housing Unit method to the 1972 estimates. In the Housing Unit method the estimates of population are based on estimates of the housing inventory. Changes in the housing inventory are derived from data on building permits issued and demolition records, or on data on electric meter connections. The provisional July 1, 1973 estimates for the remaining counties were developed by adding the change between 1972 and 1973 Component Method II estimates to the 1972 estimates. All counties were subsequently adjusted to agree with the provisional July 1, 1973 State estimate published in Current Population Reports, Series P-25, No. 508.

¹See footnote¹ on page 1.

Table 2 of this report presents estimates of the population of metropolitan areas and metropolitan counties in the State. The titles and definitions of the standard metropolitan statistical areas (SMSA's) are those currently defined by the Office of Management and Budget, Executive Office of the President. Where an SMSA falls in more than one State (indicated in the SMSA title) information on the other State parts of the area can be obtained by referring to the P-26 report for the other States.

Corresponding estimates for other States in the program will be published as they become available. The appendix table shows reports published to date for States in the 1972-73 series, together with those published earlier for 1971 and provisional 1972.

The 1970 census total for the State shown on the table may differ slightly from the sum of the counties because of corrections made subsequent to the release of the official State figure. All county populations for 1970 reflect corrections in the census count published in the bound 1970 census volume for the State. The only county with a correction of more than 500 is Jefferson.

The estimates presented in the table have been rounded to the nearest hundred without being adjusted to the State total, which was independently rounded to the nearest thousand. Percentages are based on unrounded numbers.

**Table 1. ESTIMATES OF THE POPULATION OF COLORADO COUNTIES:
JULY 1, 1972 AND JULY 1, 1973**

(State estimates are shown to the nearest thousand, county estimates to the nearest hundred)

County	July 1, 1973 (provi- sional)	July 1, 1972 "	April 1, 1970 (census) ¹	Change, 1970 to 1973		Components of change, 1970 to 1973 ²			
				Number	Percent	Births	Deaths	Net migration	
								Number	Percent
Colorado.....	2,437,000	2,364,000	2,207,259	230,000	10.4	129,000	58,000	156,000	7.1
Adams.....	206,100	200,900	185,789	20,300	11.0	11,800	3,000	11,600	6.3
Alamosa.....	11,900	12,300	11,422	500	4.4	700	300	100	0.9
Arapahoe.....	202,000	181,900	162,142	39,800	24.6	8,600	3,000	34,200	21.1
Archuleta.....	2,700	2,500	2,733	(Z)	0.1	200	100	-100	-5.4
Baca.....	5,600	5,700	5,674	-100	-1.6	300	200	-200	-3.1
Bent.....	6,200	6,500	6,493	-300	-5.1	300	200	-400	-6.4
Boulder.....	153,400	148,100	131,889	21,500	16.3	7,300	2,600	16,800	12.7
Chaffee.....	11,100	11,100	10,162	900	9.3	500	300	800	7.5
Cheyenne.....	2,300	2,300	2,396	-100	-3.9	100	100	-100	-5.3
Clear Creek.....	5,200	5,600	4,819	400	8.7	300	100	200	5.1
Conejos.....	7,900	7,900	7,846	(Z)	0.6	500	200	-200	-2.5
Costilla.....	3,200	3,200	3,091	100	4.6	200	100	100	2.2
Crowley.....	3,200	3,200	3,086	200	5.2	100	100	200	5.3
Custer.....	1,200	1,300	1,120	100	11.4	(Z)	(Z)	100	11.0
Delta.....	15,600	15,700	15,286	300	2.0	700	700	300	2.1
Denver.....	507,700	514,100	514,678	-7,000	-1.4	29,500	17,100	-19,500	-3.8
Doloros.....	1,600	1,600	1,641	(Z)	-0.5	100	(Z)	(Z)	-2.6
Douglas.....	12,200	10,600	8,407	3,800	44.6	400	200	3,500	41.9
Eagle.....	8,800	8,700	7,498	1,300	17.6	600	300	900	12.3
Elbert.....	4,800	4,200	3,903	900	23.6	100	100	900	23.2
El Paso.....	277,000	262,500	235,972	41,000	17.4	17,900	4,900	28,100	11.9
Fremont.....	24,600	23,500	21,942	2,700	12.1	1,000	1,100	2,800	12.6
Garfield.....	16,300	16,000	14,821	1,500	9.8	900	500	1,100	7.3
Gilpin.....	1,800	1,500	1,272	500	41.7	100	(Z)	500	40.2
Grand.....	6,200	5,600	4,107	2,100	50.6	300	100	1,900	46.0
Gunnison.....	8,400	8,300	7,578	800	11.2	400	100	600	7.7
Hinsdale.....	300	300	202	100	56.9	(Z)	(Z)	100	57.9
Huerfano.....	6,500	6,300	6,590	-100	-1.0	300	300	(Z)	-0.3
Jackson.....	2,200	2,000	1,811	400	24.2	100	100	400	20.7
Jefferson.....	282,900	263,200	235,300	47,600	20.2	13,100	4,500	39,100	16.6
Kiowa.....	2,100	2,000	2,029	(Z)	2.2	100	100	(Z)	-0.3
Kit Carson.....	7,100	7,400	7,530	-400	-5.2	400	200	-600	-7.5
Lake.....	8,000	8,300	8,282	-200	-2.9	600	100	-700	-8.9
La Plata.....	21,000	20,900	19,199	1,800	9.6	1,100	600	1,300	7.0
Larimer.....	108,100	104,600	89,900	18,200	20.3	5,000	2,200	15,400	17.1
Las Animas.....	15,900	16,200	15,744	100	0.9	800	700	(Z)	0.2
Lincoln.....	4,700	4,900	4,836	-100	-2.9	200	200	-100	-3.1
Logan.....	19,300	19,200	18,852	500	2.6	1,000	600	(Z)	0.1
Mesa.....	56,400	56,100	54,374	2,000	3.7	2,800	1,900	1,100	2.0
Mineral.....	600	900	786	-200	-19.1	(Z)	(Z)	-200	-20.4
Moffat.....	6,600	6,400	6,525	100	0.9	400	200	-100	-1.8
Montezuma.....	13,600	13,800	12,952	600	4.9	800	400	200	1.6
Montrose.....	18,400	18,300	18,366	100	0.3	900	600	-300	-1.6
Morgan.....	21,700	21,400	20,105	1,600	8.1	1,200	600	1,100	5.4
Otero.....	23,900	23,600	23,523	400	1.5	1,300	800	-200	-0.7
Ouray.....	1,600	1,500	1,546	(Z)	0.9	100	(Z)	(Z)	-1.4
Park.....	3,100	2,900	2,185	1,000	43.7	100	100	900	40.7
Phillips.....	3,900	4,000	4,131	-300	-6.4	200	200	-200	-5.9
Pitkin.....	7,700	7,400	6,185	1,500	24.0	400	100	1,200	19.2
Prowers.....	13,700	13,400	13,258	400	3.2	800	500	(Z)	0.3
Pueblo.....	123,000	120,600	118,238	4,800	4.1	6,700	3,500	1,600	1.3
Rio Blanco.....	5,100	4,700	4,842	300	5.3	300	100	100	2.6
Rio Grande.....	10,300	10,400	10,494	-200	-2.0	600	400	-500	-4.6
Routt.....	8,500	8,100	6,592	1,900	28.6	400	200	1,700	25.9

See footnotes at end of table.

**Table 1. ESTIMATES OF THE POPULATION OF COLORADO COUNTIES:
JULY 1, 1972 AND JULY 1, 1973—Continued**

(State estimates are shown to the nearest thousand, county estimates to the nearest hundred)

County	July 1, 1973 (provi- sional)	July 1, 1972	April 1, 1970 (census) ¹	Change, 1970 to 1973		Components of change, 1970 to 1973 ²			
				Number	Percent	Births	Deaths	Net migration	
								Number	Percent
Colorado									
Saguache.....	4,000	3,900	3,827	200	4.0	200	100	(Z)	0.7
San Juan.....	700	800	831	-100	-10.5	100	(Z)	-100	-15.6
San Miguel.....	1,900	2,000	1,949	(Z)	-1.3	100	100	-100	-4.3
Sedgwick.....	3,200	3,400	3,405	-200	-5.2	200	200	-200	-5.5
Summit.....	4,100	3,900	2,665	1,400	52.1	200	(Z)	1,200	45.8
Teller.....	5,000	4,500	3,316	1,600	49.3	200	100	1,500	45.5
Washington.....	5,200	5,600	5,550	-300	-5.6	200	200	-300	-6.3
Weld.....	101,100	97,800	89,297	11,800	13.3	5,300	2,200	8,800	9.8
Yuma.....	8,100	8,300	8,544	-400	-4.8	400	300	-500	-5.8

Z Less than 50 or less than 0.05 percent.

¹Total does not agree with the sum of the counties due to corrections made to the county populations after release of the official State counts.

²Births and deaths are based on reported vital statistics from April 1, 1970, to December 31, 1972, with extrapolations to June 30, 1973. Net migration is the difference between net change and natural increase.

**Table 2. ESTIMATES OF THE POPULATION OF METROPOLITAN AREAS AND THEIR
COMPONENT COUNTIES: COLORADO, JULY 1, 1972 AND 1973**

(SMNA totals rounded independently of county numbers)

Standard metropolitan statistical area and county	July 1, 1973 (provi- sional)	July 1, 1972	April 1, 1970 (census)	Change, 1970 to 1973		Components of change, 1970 to 1973 ¹			
				Number	Percent	Births	Deaths	Net migration	
								Number	Percent
COLORADO SPRINGS....	281,900	267,000	239,288	42,600	17.8	18,100	5,000	29,600	12.4
El Paso.....	277,000	262,500	235,972	41,000	17.4	17,000	4,900	28,100	11.9
Teller.....	5,000	4,500	3,316	1,600	49.3	200	100	1,500	45.5
DENVER-BOULDER.....	1,366,100	1,320,400	1,239,477	126,600	10.2	70,700	30,400	86,300	7.0
Adams.....	206,100	200,900	185,789	20,300	11.0	11,800	3,000	11,600	6.3
Arapahoe.....	202,000	181,900	162,142	39,800	24.6	8,600	3,000	34,200	21.1
Boulder.....	153,400	148,100	131,889	21,500	16.3	7,300	2,600	16,800	12.7
Denver.....	507,700	514,100	514,678	-7,000	-1.4	29,500	17,100	-19,500	-3.8
Douglas.....	12,200	10,600	8,407	3,800	44.6	400	300	3,500	41.0
Gilpin.....	1,800	1,500	1,272	500	41.7	100	(Z)	500	40.2
Jefferson.....	282,900	263,200	235,300	47,600	20.2	13,100	4,500	30,100	16.6
PUEBLO.....	123,000	120,600	118,238	4,800	4.1	0,700	3,500	1,600	1.3
Pueblo.....	123,000	120,600	118,238	4,800	4.1	0,700	3,500	1,600	1.3

Z Less than 50 or less than 0.05 percent.

¹Births and deaths are based on reported vital statistics from April 1, 1970, to December 31, 1972, with extrapolation to June 30, 1973. Net migration is the difference between net change and natural increase.

APPENDIX

ESTIMATES PUBLISHED IN SERIES P-26 REPORTS SINCE 1970 CENSUS

State	Report No.		State	Report No.		State	Report No.		State	Report No.	
	1972 and provi- sional 1973	1971 and provi- sional 1972		1972 and provi- sional 1973	1971 and provi- sional 1972		1972 and provi- sional 1973	1971 and provi- sional 1972		1972 and provi- sional 1973	1971 and provi- sional 1972
Ala.....		48	Ind....		14	Nebr....	58	25	R.I.....		22
Alaska...		(X)	Iowa...		31	Nev.....		29	S.C.....		34
Ariz.....	50	*11	Kans...		43	N.H.....	52	18	S.Dak...	61	*12
Ark.....		33	Ky.....		35	N.J.....		20	Tenn....		47
Calif....		*41	La.....	54	*16	N.Mex...		(X)	Tox.....		(X)
Colo.....	62	17	Maine..	59	28	N.Y.....		(X)	Utah....	55	10
Conn.....		(X)	Md.....		(X)	N.C.....		44	Vt.....	49	*13
Del.....	57	15	Mass...		42	N.Dak...	60	(X)	Va.....		36
Fla.....		40	Mich...		32	Ohio....		*40	Wash....		(X)
Ga.....		37	Minn...		38	Okla....		24	W.Va....		30
Hawaii...	56	23	Miss...		(X)	Oreg....		(X)	Wis.....		26
Idaho....	51	9	Mo.....		45	Pa.....		*39	Wyo.....		(X)
Ill.....		27	Mont...	53	19						

* First year only.

X No estimates published for this State.

IN THE DISTRICT COURT IN AND FOR

WATER DIVISION NO. 1

STATE OF COLORADO

CIVIL ACTIONS NO. W-7269, W-7232, W-7242
W-7243, W-7233, W-7290
W-7295, W-7296, W-7293

IN THE MATTER OF THE PROPOSED)
RULES AND REGULATIONS GOVERNING)
THE USE, CONTROL AND PROTECTION) STIPULATION
OF SURFACE AND GROUND WATER)
RIGHTS LOCATED IN THE SOUTH)
PLATTE RIVER AND ITS TRIBUTARIES)

It is stipulated among the parties to these proceedings that no objection will be made by any of the parties signatory hereto, acting through their respective attorneys, to the entry of the attached "Findings of Fact, Conclusions of Law and Judgment"; nor will objection be made to the adoption of rules and regulations within the principles therefor, as contained in said findings, conclusions and judgment; nor to the "Amended Rules and Regulations of the State Engineer" attached hereto; and it is further stipulated that no further evidence either on direct or cross examination will be offered herein except as may be required pursuant to the "Findings of Fact, Conclusions of Law and Judgment" if entered by the Court in the terms attached hereto.

Each of the parties specifically reserves the right to raise constitutional questions in some other proceeding without in any way being prejudiced in, estopped, or precluded therefrom by virtue of this Stipulation or said Judgment.

Dated this 15th day of March, 1974.

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IN THE DISTRICT COURT IN AND FOR

WATER DIVISION NO. I

STATE OF COLORADO

CIVIL ACTIONS NO. W-7209, W-7232, W-7242
W-7249, W-7289, W-7290
W-7295, W-7296, W-7298

IN THE MATTER OF THE PROPOSED)	
RULES AND REGULATIONS GOVERNING)	
THE USE, CONTROL AND PROTECTION)	FINDINGS OF FACT,
OF SURFACE AND GROUND WATER)	CONCLUSIONS OF LAW
RIGHTS LOCATED IN THE SOUTH)	AND JUDGMENT
PLATTE RIVER AND ITS TRIBUTARIES)	

All references to statutes herein refer, without specific designation to the Colorado Revised Statutes.

FINDINGS OF FACT

1. These proceedings concern Rules and Regulations adopted by C. J. Kuiper, State Engineer of Colorado on the 16th day of November, 1972 to become effective February 19, 1973. The Rules and Regulations apply to the waters of the South Platte River and its tributaries.

2. Evidence was presented to the Water Court June 4 through 7 and June 11 through 14, October 29 through 31 and November 1, 5 and 6 of 1973. Of the parties bound by these proceedings, a fairly representative cross section has been active through numerous competent counsel supported by well informed engineering advisors. At a time when no party to these proceedings was foreclosed from placing further evidence before the Court, the active parties submitted suggestions for a final judgment herein and have stipulated and agreed, under the supervision of the Court, to these Findings of Fact, Conclusions of Law and Judgment.

3. All protests were consolidated for trial with relevant objections to the consolidation noted and reserved. In the interest of justice and to simplify proceedings under these protests, all objections to the consolidation of these protests were overruled and the protests were consolidated for trial.

4. During the pendency of the proceedings before this Court various parties made various motions. The Court reserved ruling upon certain motions and the admissibility of certain matters of evidence to permit making a complete record in this complex and highly technical proceeding.

5. Ground waters in the alluvium underlying the drainage basin of the South Platte River and hydraulically connected with its surface streams are a part of the river system, and removals either from the surface portion of the system or the underground portion of it, decrease water available in the whole system. A historical background is necessary to an understanding of the derivation of the final determinations herein. Until some thirty years ago, only limited diversions were made of the ground waters and nearly all diversions were made from the surface waters of the Platte River system. Until 1965, there was practically no administration by the State Engineer's office of groundwater diversions while surface water diversions were generally administered according to priority. The Office of the State Engineer, in regulating diversions of various appropriators, endeavored to curtail or shut down junior diversions to the extent necessary to provide a water supply needed for beneficial use by senior appropriators. To facilitate this work, the State Engineer had access to records of surface stream flows at various strategic places in the Platte River system. From experience gained in administration, the State Engineer operated according to practices which were the equivalent of regulations, which

were well understood in his office, and, whether written or not, were acquiesced in by appropriators of water in general.

6. It has been the long practice of the State Engineer in administering appropriations by diversion from surface streams to take into account the time it takes for water to flow along surface streams. When surface stream flows are diminished so that curtailment of upstream diversions becomes necessary to provide water for downstream senior appropriators, the timing and amount of curtailment is ordered on the basis of the well known velocities of flow in the various surface streams involved.

7. The evidence shows that in recent years the Office of the State Engineer has become increasingly familiar with the characteristics of flow of the ground water part of the South Platte River system. His office has undertaken extensive studies of that ground water flow which is at such a slow rate that administration of ground waters is more intricate and requires greater skill and expertise for proper administration.

8. There is evidence that ground water diversions, junior in time and in right to surface appropriators, have resulted in reduction of surface supplies of water which might otherwise have been available to senior surface appropriators. Sufficient facts exist to support the conclusion that a reasonable lessening of material injury to senior appropriators will be accomplished by the proper regulation of diversions by means of wells. The extent that diversions by means of wells shall be regulated to accomplish this reasonable lessening is provided for herein.

9. There are periods of many years when there is an over-abundance of water in the surface portion of the South Platte River system and that over-abundance, together with return flows from bene-

ficial uses, charge and recharge the ground water aquifer of the Platte River. The ground water of the Platte River constitutes a slowly moving body of water, much of which is below the influence of plant transpiration and evaporation. Much of said ground water is susceptible of diversion and application to beneficial use upon imposition of conditions necessary to protect senior rights.

10. The Office of the State Engineer offered evidence that it has developed a set of measurements of the physical characteristics of the ground water aquifer to calculate when diversions from the ground water aquifer by junior appropriators are or may be expected to be injurious to senior appropriators.

11. The time of impact of ground water diversions on the surface stream varies according to varying conditions including the distance of ground water diversion from the surface of the stream, the volume and duration of the diversion, and the elevation of the water in the ground water aquifer at the time the diversion is made. Ordinarily, river conditions are such that provision can be made by the ground water appropriator to provide to seniors the amount of any deprivation due to ground water diversions. Because of the time lag between a ground water diversion and its impact on surface water users, conditions may arise such that a potential injury to surface diverters may not actually occur, but the burden of assuring that there will be no injury to the senior appropriator must fall on the junior appropriator.

12. The evidence shows that the method described in the treatise by Robert E. Glover entitled "The Pumped Well", Technical Bulletin 100, Colorado State University is one of the generally accepted methods of calculating any depletion needed to be replaced in order to avoid injury to a senior exercising a valid call. The evidence

also showed, that because the method (which is sometimes referred to as the "Glover formula") is based on certain assumed factual idealizations, expert judgment must be exercised in its application to account for certain variations from these limiting assumptions. Other methods may be more accurate for solution of the problem in a particular case.

13. The proceedings herein show that this Court has jurisdiction of all water users in Water Division I and, whether present or not, all such water users are bound by the actions of the Court herein. The evidence shows that the factual determinations relied upon herein are the subject of some uncertainty, and that judgments required to be made by the Division and State Engineers in the enforcement and application of these Amended Rules and Regulations could potentially adversely affect the rights of parties hereto. It is necessary, however, to proceed with regulation on the best basis currently possible. Due to the anticipated complexity of the application of the Amended Rules and Regulations to particular fact situations, Jurisdiction should be retained.

CONCLUSIONS OF LAW

14. By Section 148-11-22(1), the legislature provided that the State Engineer, in the distribution of water according to priority, "shall adopt such rules and regulations and issue such orders as are necessary for the performance of***" his duties in distributing water. In *Fellhauer vs. People*, 167 Colo. 320, 447 P.2d 986 (1968), the Supreme Court held that the State Engineer could not regulate wells in the absence of written rules and regulations and prescribed guidelines. In 1971, by an amendment to Section 148-21-34, the legislature made its intention clear in this regard by repealing 148-11-22(3) and repealing and amending 148-11-22(1) and (2) as set forth in 148-21-34, 148-21-35 and 148-21-36 in the 1969 Water Adjudication and Administration Act. The mandatory word "shall" was removed and now the last sentence of 148-21-34(1) provides "the State Engineer may adopt rules and regulations to assist in, but not as a prerequisite to, the perform-

ance of the foregoing duties." Sections 148-21-34, 35, and 36 when read together now indicate that such a proceeding as this, pursuant to a protest filed in this Court, is not for the purpose of suspending the obligations of the Office of the State Engineer to "order the total or partial discontinuance of any diversion***" to the extent the water being diverted is required by persons entitled to use water under water rights having senior priorities***" 148-21-35(2), but to assure that rules and regulations be consonant with the basic requirement for implementing the priority system among all appropriators.

15. The State Engineer has the continuing obligation to administer the water supply which is under his jurisdiction and to issue appropriate orders to effectuate such administration whether or not he has adopted rules and regulations to assist him in the performance of his duties. The "Amended Rules and Regulations" attached hereto are in full force and effect from and after the signing of this decree because stipulated to herein, without prejudice to a further determination with respect thereto if required pursuant to protest hereafter filed following their publication as required by law. Administration of the water of the South Platte River pursuant to the Amended Rules and Regulations attached to this decree will be in accordance with the order of this Court dated August 11, 1972 in Case No. W-6958.

16. The legislature has made special provision for integrating ground and surface water use by 148-21-23. In apparent recognition that augmentation plan approval before the Courts may take a considerable time, the legislature specifically provided by 148-21-(3) (148-21-23(4)) in 1971 Session Laws.) that "until the determinations shall have been made under subsection (2) ***the state engineer and division engineers shall develop tem-

porary augmentation plans***to allow continuance of existing uses and to assure maximum beneficial utilization of the waters of this state." Unless water users file augmentation proceedings in the Water Court, the State Engineer may not hereafter authorize temporary plans of augmentation.

17. The Protestants contend that the "Proposed Rules and Regulations" dated November 16, 1972, which are the subject of this proceeding, are not proper as a matter of law; however, as a result of this stipulation to amend the Rules and Regulations it is not necessary to decide this issue.

NOW THEREFORE IT IS HEREBY ORDERED, ADJUDGED AND
DECREED AS FOLLOWS:

18. The separate protests to the rules and regulations of the State Engineer have been consolidated for trial, and the protections accorded by the Rules of Civil Procedure in the consolidated action are preserved for each party.

19. All requests for rulings by the Court, other than objections to evidence, which were not otherwise formally ruled upon are hereby denied.

20. All objections to evidence not otherwise formally ruled upon are hereby denied, and all evidence submitted herein except as formally excluded is admitted.

21. The Amended Rules and Regulations of the State Engineer attached hereto have been agreed to by virtue of the stipulation of the parties participating in this proceeding and are hereby approved. Said Amended Rules and Regulations are effective herewith and shall remain in effect unless modified or amended in accordance with law. The said Amended Rules and Regulations shall be published as provided by statute, but shall remain in effect during the period of said publication and during the pendency of any protest.

22. Plans for augmentation involving ground water diversions from the South Platte River and its tributaries hereafter filed before this Water Court should utilize the facts and determinations developed in these proceedings to facilitate the administration of water in Water Division One. The method sometimes called the "Glover formula," as described in the treatise by Robert E. Glover and entitled The Pumped Well, Technical Bulletin 100, Colorado State University, may be used for the purpose of calculating replacement water necessary to make up for depletions caused by

diversions of ground water to comport with current practices in the Office of the State Engineer. However, some another appropriate method may be used. Such plans should also provide for meeting the other requirements of this decree.

23. To avoid a deprivation of water to some senior appropriator, ground water appropriator shall make replacement water available for delivery as reasonably required by the Division Engineer, in a quantity, during a period, and at a place so as to prevent a deprivation of water to a senior appropriator caused by such ground water diversion. The Division Engineer shall use valid senior water calls as the normal criteria for requiring such replacements. In applying the terms of this paragraph, it is expected that the Division Engineer will be mindful of all applicable law without overlooking that part of 148-21-34 which reads:

(1) "It is the legislative intent that the operation of this section shall not be used to allow ground water withdrawal which would deprive senior surface rights of the amount of water to which said surface rights would have been entitled in the absence of such ground water withdrawal, and that ground water diversions shall not be curtailed nor required to replace water withdrawn, for the benefit of surface right priorities, even though such surface right priorities be senior in priority date, when assuming the absence of ground water withdrawal by junior priorities, water would not have been available for diversion by such surface right under the priority system."


24. This Court shall retain continuing jurisdiction under these consolidated cases for the purpose of providing an immediate hearing to review the validity of a call, or requirement for providing replacement water, the approval or disapproval of temporary augmentation plans, findings of the Division Engineer pursuant to Rule 2(b) of the Amended Rules and Regulations stipulated to herein, or any other matter contained within the said Amended Rules and Regulations.

25. The Amended Rules and Regulations of the State Engineer, stipulated to by the parties hereto and attached to this decree, shall be published as provided by law, and all persons affected by any amendment contained in the Amended Rules and Regulations stipulated to herein other than any party bound by the stipulation herein shall have their statutory right to protest.

26. This order does not constitute an injunctive order, but this proceeding may be used, after appropriate notice, as the basis for securing any appropriate injunctive order. No damage occurring prior to issuance of such an injunction shall be the basis for damages, costs or attorneys fees referred to in '63 C.R.S. 148-21-37.

27. Since this is an action in rem, all who could have participated are bound by this order, judgment and decree.

DONE IN OPEN COURT this 15th day of March,
1974.


Honorable Donald A. Carpenter
Water Judge
Water Division I

IN THE MATTER OF THE)	
RULES AND REGULATIONS GOVERNING)	
THE USE, CONTROL, AND PROTECTION)	AMENDED RULES AND REGULATIONS
OF SURFACE AND GROUND WATER)	OF THE
RIGHTS LOCATED IN THE SOUTH)	STATE ENGINEER
PLATTE RIVER AND ITS TRIBUTARIES)	

Pursuant to authority vested in the Office of the State Engineer, the State Engineer hereby,

FINDS, that on November 16, 1972 the State Engineer ordered that Rules and Regulations for the South Platte River were to become effective on February 19, 1973. As a result of protests filed to those Rules and Regulations and upon the basis of subsequent proceedings in the Water Court for Water Division I, those Rules and Regulations are hereby amended and changed to read as reproduced below.

The said Amended Rules and Regulations are adopted and shall become effective as of the 16th day of March, A.D., 1974, and shall remain in full force and effect unless changed or amended as provided for by law.

"AMENDED RULES AND REGULATIONS"

RULE 1. Except as specifically noted below, these Rules and Regulations shall apply to all underground water of the South Platte River and its tributaries as defined in Colo. Rev. Stat. Ann. 1963, Sec. 148-21-3(4) (Supp. 1969), and reproduced below, as follows:

(4) "Underground water" as applied in this act for the purpose of defining the waters of a natural stream, means that water in the unconsolidated alluvial aquifer of sand, gravel, and other sedimentary materials, and all other waters hydraulically connected thereto which can influence the rate of direction of movement of the water in that alluvial aquifer or natural stream. Such "underground water" is considered different from "designated ground water" as defined in 148-18-2 (3).

These Rules and Regulations shall not apply to water withdrawn from wells, such as domestic and livestock wells, which are exempted from administration under Colo. Rev. Stat. Ann. 1963, Sec. 148-21-45 (Supp. 1972), and these Rules and Regulations shall not apply to water withdrawn from wells which are exempted from administration by Court decree or statute.

RULE 2. (a) Ground water diversions will be continuously curtailed according to the following schedule to provide for a reasonable lessening of material injury to senior appropriators:

- (1) During the Calendar Year 1974, five-sevenths (5/7) of the time;
- (2) During the Calendar Year 1975, six-sevenths (6/7) of the time; and
- (3) During the Calendar Year 1976, and thereafter, total curtailment.

Pumping shall be permitted on every Monday and Tuesday of each week in 1974 and on every Monday of each week in 1975. The Division Engineer shall administer this rule so that the operator of a well, or wells, may have a cycle of operation to make more efficient use of the water available; provided, that senior appropriators are not materially injured thereby.

(b) Ground water diversions shall be curtailed as provided under part (a) hereof unless the ground water appropriator submits proof to the Division Engineer and upon the basis of that proof the Division Engineer shall find:

- (1) That the well is operating pursuant to a

decreed plan of augmentation, that the well is operating pursuant to a decree as an alternate point of diversion, or that a change in point of diversion to the well has been decreed for a surface water right; or

- (2) That the ground water appropriation can be operated under its priority without impairing the water supply to which a senior appropriator is entitled, or
- (3) That the water produced by a well does not come within the definition of underground water in RULE 1.

RULE 3. Any ground water appropriator affected by these rules and Regulations may use a part or all of the water diverted without regard to curtailment described in RULE 2(a) to the extent his ground water diversion is in compliance with a temporary augmentation plan approved by the Division Engineer in accordance with Colo. Rev. Stat. Ann. 1963, Sec. 148-21-23(4) and where there is a plan for augmentation filed in the Water Court in accordance with Colo. Rev. Stat. Ann. 1963, Sec. 148-21-18 (Supp. 1971). The Division Engineer will promptly approve or disapprove such temporary augmentation plans submitted to him. The guidelines for any such temporary augmentation plan will be expected to meet at least the following criteria:

- (1) That replacement water for stream depletion shall be made available to the Division Engineer in an amount equal to 5 percent of the projected annual volume of a ground water diversion, and may be used by him at a rate of flow sufficient to compensate for

any adverse effect of such ground water diversion on a lawful senior requirement, as evidenced by a valid senior call, but at a rate not exceeding 5% of the capacity of the diversion structure.

- (2) Such capacity shall be determined by Court decree, if adjudicated, by application for a water right, if filed in the Water Court, by well permit, or by registration. If none of these means of determination is available, the capacity will be the maximum pumping or delivery rate, which must be substantiated by the appropriator.
- (3) The operation of the temporary augmentation plan shall not be used to allow ground water withdrawal which would deprive senior surface rights of the amount of water to which said surface rights would have been entitled in the absence of such ground water withdrawal, and ground water diversions shall not be curtailed nor required to replace water withdrawn, for the benefit of surface right priorities, even though such surface right priorities be senior in priority date, when, assuming the absence of ground water withdrawal by junior priorities, water would not have been available for diversion by such surface right under the priority system.

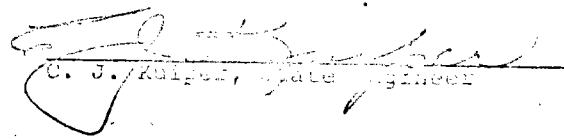
RULE 4. Whenever the Division Engineer is satisfied, upon the basis of competent evidence, that operation of

a temporary plan of augmentation pursuant to RULE 3(1) will not meet the requirements of RULE 3(3) above, modification of the plan will be undertaken by reference to criteria as follows:

- (1) The stream depletion caused by a well will be calculated by the method shown in The Pumped Well by Robert E. Glover, Technical Bulletin 100, Colorado State University or by other accepted engineering formulae appropriately modified to reflect the pertinent physical conditions.
- (2) The transmissivity value will be obtained from the U.S. Geological Survey Open-File Reports, Hydrogeologic Characteristics of the Valley-Fill Aquifer in the South Platte River Valley, Colorado, 1972, or from updated editions, or from calculations using accepted engineering methods.
- (3) The specific yield or effective voids ratio generally descriptive of the material in the aquifer will be assumed to be twenty percent (20%), or a different value may be used when it can be substantiated generally or as to any particularly area or situation.
- (4) The consumptive use, for irrigation purposes will be assumed to be forty percent (40%) of the total quantity pumped for irrigation uses, subject to modification upon proof that a different consumptive use situation exists with

respect to a particular diversion. For
uses than irrigation, the amount will be
determined from the actual conditions.

DATED this 15th day of MARCH, 1974.


C. J. Kuiper, State Engineer

Lois Bohlender
Clerk, Water Division No. 1
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