

# Division One



## Strikes Back

Against the Big T Evil Empire





**Division One  
Annual Report**

**1996 Irrigation Year  
Richard Stenzel  
Division Engineer**



# TABLE OF CONTENTS

## **Current Water Year**

|                                |   |
|--------------------------------|---|
| Water Administration           | 1 |
| Dam Safety                     | 2 |
| Hydrography                    | 3 |
| Groundwater                    | 4 |
| Involvement with the Community | 5 |

## **On-Going Projects**

|   |    |
|---|----|
| Big Thompson River Enforcement Program      | 5  |
| Halligan Reservoir Incident and Task Force  | 6  |
| DWR MOU with DOW                            | 6  |
| South Platte Lower River Group              | 7  |
| Colorado Water Resources Research Institute | 8  |
| South Platte Water Right Management System  | 9  |
| Long Range Plan Goal Progress               | 9  |
| South Platte Well Study                     | 9  |
| Lysimeter Study                             | 10 |
| Well Location Program                       | 10 |
| Metropolitan Water Supply Investigation     | 11 |
| SB-74                                       | 11 |
| Cherry Creek Basin Management Plan          | 12 |

## **On-Going Water Issues or Operations**

|   |    |
|---|----|
| Platte River Basin-Wide Endangered Species Negotiations | 12 |
| Republican River Compact                                | 16 |
| Denver Water Board 150 CFS Operations                   | 16 |
| Chatfield Study   | 16 |
| US Forest Service/Poudre                                | 17 |

## **Issues Not Addressed**

|  |    |
|--|----|
| Irrigated Acreage/Actual Location of Fee Wells | 17 |
| Partial Occupancy of Dwellings                 | 18 |

## **Court Decisions**

|                                 |    |
|---------------------------------|----|
| Thornton Supreme Court Decision | 18 |
| Abandonment Case                | 19 |
| Englewood 90CW221               | 19 |
| Crystal Lakes                   | 19 |
| Berthoud Case                   | 20 |

## **Personnel/Workload Issues**

|                                |    |
|--------------------------------|----|
| Well Administration Activities | 20 |
| South Park Applications        | 20 |
| Workload Measure Study         | 21 |
| Dam Safety                     | 21 |
| Administration                 | 21 |
| Division One Staff             | 22 |



## **Water Administration Data Summaries**

|                                   |    |
|-----------------------------------|----|
| Lysimeter Graphs                  | 23 |
| Runoff Forecast                   | 25 |
| Augmentation Releases by District | 26 |
| Transmountain Diversions          | 27 |
| Reservoir Storage Summaries       | 28 |
| Water Diversions                  | 41 |
| Water Diversions Graph            | 43 |
| Water Court Activities            | 44 |
| River Call Records                | 45 |
| Staffing and Statistics           | 48 |
| Organizational Flow Chart         | 49 |
| Division One Staff Pictures       | 50 |



## CURRENT WATER YEAR

### Water Administration

The 1996 water year turned out to be very good. It started in excellent shape with significantly above average snowpack throughout the basin and above average storage carryover from 1995. We also expected that there would be significant delayed river return flows from 1995 flooding. The one bump in the road occurred in April, 1996. April was an extremely dry month on the plains though snowpack for the mountains continued to far exceed average. The lack of precipitation on the plains was unusual for April. The dry warm conditions prompted ditch companies to open their irrigation ditches. Since snowmelt had generally not begun, there were senior irrigation calls for this time of year on the South Platte River and its tributaries. The senior mainstem call occurring during the month was the Fulton ditch with a July 8, 1876 priority. The flow in the South Platte River dropped dramatically as a result of the dry conditions and diversions for irrigation.

Making the situation potentially worse on some tributaries, an explosion at the Flatiron Pumping station near Carter Lake in the fall of 1995 temporarily impacted the Northern Colorado Water Conservancy District's (NCWCD) ability to deliver Colorado Big Thompson (CBT) project water to a portion of its District in 1996. The CBT project is a transbasin diversion project which delivers supplemental supplies to farmers, municipalities and others along several of the tributaries and mainstem of the South Platte within the NCWCD boundaries. The explosion at the Flatiron facility resulted in NCWCD not being able to pump water to Carter Lake which serves the southern portion of the

District. While the large amount of carryover water from 1995 in Carter Lake helped the situation, the explosion still forced the NCWCD Board to set a CBT quota at 50% in 1996 for the southern part of the District. This included the Little Thompson, Saint Vrain, and Boulder Creek basin and a short stretch of the South Platte downstream of Denver and upstream of the Saint Vrain Creek confluence.

In May, several rainstorms and the beginning of runoff improved conditions dramatically. It also alleviated concerns of shortage in areas served by the CBT system from Carter Lake. The weather and flow conditions provided for a good start to the crop growing season. Fortunately, the runoff occurred in a fairly even manner and the rainstorms generally were not intense over widespread areas. Thus, there was also very little flooding in the basin. This was in contrast to the previous year along the South Platte and its tributaries when the high snowpack runoff and wet spring conditions provided for very high flows with some flooding for nearly a month.

While there was a call throughout the basin during the whole month of July, the call was junior to that usually expected in July. The river flow situation in the South Platte basin at the end of July was similar to that generally experienced at the end of June. The senior call on the mainstem in July was a 1876 Fulton ditch call during the later half of July. In contrast, this 1876 call was placed on the river during the last week of June in 1994.

The flow in the tributaries and mainstem dropped off the beginning of August. Nevertheless, conditions for users continued to be favorable through out August due to rainstorm events and the



use of storage. The senior call for August and the balance of the summer on the South Platte was the 1871 Western ditch call. This call occurred during the middle part of August. The Western call is a common call on the South Platte which usually occurs much earlier in the summer during July. Rainfall during the last half of the August made supply conditions so favorable that the direct call downstream of Greeley on the mainstem was replaced by a recharge call. This allowed for significant recharge to occur prior to filling the surface reservoirs for next year. Reservoir levels also continued above average through out the basin because they started full during spring and less water was needed from them this summer because of the higher than usual flow conditions in July and August. In addition, the repairs at the pump station were completed and the station was put back in operation in the fall of 1996. This assured that the CBT supply for 1997 will not be impacted.



High flows in 1995 created damage to several diversion structures and ditches along the South Platte and its tributaries. Some of the structures on the South Platte which were damaged include the South Platte Ditch, the Bravo Ditch, the Tremont Mutual Ditch, and the Peterson Ditch. All of these structures were rehabilitated in 1996. Owners of the first three of these structures were given low interest loans from the

Colorado Water Conservation Board (CWCB) for a portion of the rehabilitation. The owners of the South Platte Ditch and the Bravo Ditch also received grant funding from the Consolidated Farm Service Agency (previously the A.S.C.S) for another portion of the rehabilitation. On the tributaries, the Consolidated Farm Service Agency also provided grant money for the rehabilitation of the diversion structure to the South Branch of Saint Vrain Creek. Many other structures were destroyed or damaged on the mainstem and tributaries and have been repaired or reconstructed without loan money or grant money.

#### Dam Safety

The prospects of a higher than normal runoff season for the second straight year kept the dam safety staff at a heightened level of alert. However, no actual flooding materialized and no dams were jeopardized. The prospect for flooding did serve as a good tool to again test the staff for preparedness after the previous year of flooding.

The dam safety branch in Greeley is staffed with four engineers to perform periodic inspections of dams. Under the current "1-2-6" program approximately, 270 dams are to be inspected each year. All Class I dams are inspected annually; Class II dams inspected every other year; and Class III dams every six years. Last year 250 dams received periodic safety inspections. Another 101 dams were visited as part of follow-up activities either to assist the dam owner or to check on changing conditions or repairs.

The hydrologic review of spillways continued. The review of Class I dams was completed, and the owners of dams



with inadequate spillways notified to bring their dams into compliance with the Rules and Regulations. The evaluation of the 138 Class II dams is well underway. Of this number, 21 are exempted by the deferment of high elevation structures, and 39 do not require evaluation under the current Rules. At the end of the year, 37 of the remaining 72 dams had been evaluated with a total of 20 hydrologic reviews completed during 1996. The projected completion date for the Class II evaluations is 1998. Staff continues to conduct internal inspections of the outlets using the SLED. The target date for having the outlets of all Class I and Class II dams inspected is December 1998.



**The Dam News**, a newsletter sent out to dam owners continues to be a well received and popular tool for dissemination of important information and news. Circulation includes limited national distribution among private consultants, professional agencies and national publications.

There were no new dams completed in 1996, although several major modification projects were completed. Projects include redoing the upstream concrete face at Milton Reservoir Dam (WD 2), a new spillway at Milton-Seaman Dam (WD 3) and armoring of Clear Lake Dam (WD 7) with grouted riprap for overtopping protection.

Several other rehabilitation projects were also completed or started construction.

### Hydrography

**T**he 1996 water year in the South Platte River and its tributaries was a good year. A comparison of historic average and 1996 total flows for the South Platte at Kersey and South Platte at Julesburg gives a good indication of the kind of year we had in 1996.

South Platte at Kersey historic average flow 562,900 AF and in 96WY 721,500 AF.

South Platte at Julesburg historic average flow 394,200 AF and in 96 WY 425,900 AF.

The hydrographic section bought some additional high water measuring equipment this year, giving each man access to cabling gear. This will enable us to make additional measurements on the high end of the hydrograph, improving the rating for stations at high flows.

A number of station stage discharge curves were modified this year to reflect channel changes that occurred during the 1995 high water period.

Hydrographers in Division One measured and kept record for 81 gaging stations located throughout the division this year. The streamflow data gathered at those gaging stations is the basic information used by water administrators and water users to determine the available water supply within the division. Twenty of these stations are record stations for which a completed and verified record of water flow is turned into the United States



Geological Survey (USGS) for their publication. The remaining 61 stations are records kept solely by the Division of Water Resources (DWR) and are published separately by DWR. We are continually experiencing increased demands on our hydrographer's time. For this reason, we are training and providing experience to several assistant water commissioners so they can provide support in their Districts.

Funding was received from the Colorado Water Conservation Board (CWCB) once again this year which allowed the staff to repair and replace several additional stream gages. During the past year, a new station was installed on the St. Vrain at Platteville replacing the old station, the station on Bear Creek at Morrison was totally replaced, and a new station was installed on Channel No. 1 of the South Platte at Julesburg which allows us to now measure three of the four channels that exist at this station. Also, a data collection platform (DCP) was installed on the Evans No. 2 Ditch. We plan to repair and replace additional stations in 1997 as part our attempt to continually improve and upgrade the quality of the streamflow data.

### Groundwater

**A** water court filing by Aurora in Park County and the response from local domestic type well owners was the single largest event related to groundwater this year. The Aurora application claimed that an aquifer from Michigan Hill to southeast of the Town of Como was largely isolated from the main South Platte groundwater system by the Elkhorn Thrust fault. Thus, Aurora claimed that this area could be used as an underground reservoir to which they could recharge water when available and withdraw water when needed with

injury to other water rights prevented in a relatively easy manner. Most of the owners of domestic type wells and those who owned undeveloped subdivision lots within and near this area became quite concerned with this proposal. To protect themselves, between 900 and 1,000 of these people filed in water court to adjudicate their existing or proposed wells. They filed for water rights when they became aware that the State Engineer did not believe that approval of a plan for augmentation by the Water Court granted them a water right for their wells. The work load implications of all these application to water court is discussed in a later section of this report.

Efforts to verify that all non-exempt large capacity wells within the division are included in augmentation or substitute supply plans have continued during the past year. The lead and deputy Water Commissioners in former water Districts 1 and 2 were particularly active in this area in 1996. These efforts led to numerous letters being sent to well owners regarding the need to cover well pumping under one of the above referenced methods as well as approximately 20 Show Cause Orders and one Cease and Desist Order being issued.

Gravel pit administration continues at a steady pace since virtually all of the pits within Division 1 have been field inspected and are in compliance with the provisions of Senate Bill 1989-120. The number of approved gravel pit substitute supply plans has remained relatively constant over the past year, even with brand new substitute plans being approved, because the older pits which were previously covered by substitute supply plans are obtaining decreed augmentation plans.



Efforts to make it possible to incorporate diversion record information from wells into the official diversion database are continuing. This database has historically been dominated by surface water diversion records, this effort will now allow historic well usage to also be tracked. This information will become increasingly important as demand for water increases over time.

Denver Basin groundwater continues as virtually the only water supply for growth from the Denver Tech Center (DTC) area south along the front range to Monument Hill. This usage has created declines of 200 to 300 feet in the Arapahoe aquifer in the DTC area. Much of this decline is associated with a drop in the artesian pressure head and has not actually resulted in a decline to water table conditions in this area. This decline in artesian pressure in addition to other well pumping through out the basin may have resulted in some well owners in the Arapahoe outcrop area near Chatfield Reservoir seeing reduced levels and those individuals having to drill deeper wells or drill additional wells to obtain their original amount of water. Since current law contemplates "mining" these aquifers using a 100 year time frame, these problems should be expected to increase with time.

#### *Involvement with the Community*

Division One has met its resolution to become an active leader within the water user community and the general public. We routinely attend and make presentations to meetings of Realtors, homeowners groups, organizations, schools, and universities. We also attend meetings of GASP, Central Conservancy District, other conservancy districts and forums. Annually we participate with Central in a water festival for grade schools in the

area to tell what our agency does and also the history of the appropriation doctrine. Individual contact and assistance by water commissioners and other division staff continues to occur almost daily and provides the foundation of our public assistance.

## **ON-GOING PROJECTS**

### *Big Thompson River Enforcement Program*

Division One is currently undertaking a major effort to locate illegal uses of wells and surface water diversions from the Big Thompson River from the western edge of the City Limits of Loveland upstream to the Eastern Boundary of Rocky Mountain National Park. We have held two public meetings and had several newspaper articles concerning the illegal use of water.

At the meetings, we have addressed what alternatives are available to those who seek to continue using water for their businesses or lawn watering. We have begun developing a database of well permits issued throughout the area of concern. We also are pulling water decrees to see what uses are allowed and have developed GIS mapping of the area which visually shows where wells and water rights are located and the type of uses that are allowed.

Starting early in 1997, the water commissioner will begin contacting water users in the Fall River area of Estes Park and notifying them if it appears that they have illegal uses. If they state that they don't intend to do anything or after one year they continue to illegally divert water, we will issue cease and desist orders. Information regarding contacts and findings in the



field is also being recorded in the data base that we are developing.

We have had significant response from the public concerning what can they do. Many people are submitting change of ownership requests for their wells and have obtained forms to late register their historic uses of pre-72 wells. Over one hundred persons have contacted an entity who is making water available for replacement of illegal uses. These people are considering this alternative as a way to resolve the existing illegal use of water. In addition, there has been some activity by those located in the canyon to develop their own augmentation plan. Many people may choose to cease the watering of their lawns using river water instead of augmenting for out-of-priority uses. In addition, realtors in the area now are telling customers when they are aware of illegal uses and even when the method of waste water treatment is in violation of the homeowner's well permit.

Overall, even though this project has not been accepted without some complaints, it has been getting positive results. The public has grudgingly acknowledged that it was needed. Senior water owners downstream of this area are supportive and have stated that it was long overdue.

#### Halligan Reservoir Incident and Task force

The Halligan Reservoir incident which occurred during September resulted in a significant sediment discharge that killed over 4200 fish in Phantom Canyon and the destruction of over 3 ½ miles of the stream ecosystem. It was a very unfortunate situation and it pointed out that a Memorandum of Understanding (MOU) that had been signed in 1993 between

the State Engineer's Office (SEO) and the Division of Wildlife (DOW) Division heads had not been forwarded to the field staff of either agency. It is not clear whether the existing MOU would have resulted in a different conclusion even if it all the steps in the MOU had been followed. There is nothing in the MOU, as currently written, that would force a dam owner to cease sediment releases if they chose to proceed after we have notified them.

A Technical Committee has been formed to arrive at a plan that will result in the short term and long term recovery of the North Poudre River for the fishery and macro invertebrates. A Task Committee was also formed that will review the proposed recovery plan and also look at ways to improve the existing MOU. A cooperative agreement between agency representatives in the basin and also an agreement between the dam owners and the Division Engineer is an objective of this group. The drainage basin agreement in the Cache La Poudre basin between the dam owners and the Division Engineer will provide for advance notice in the future of any planned sediment releases. It is hoped that the Task Force can get agreement of all the parties involved. It is also hoped that eventually a similar type agreement can be obtained from dam owners throughout the balance of the state, or at least within other drainage basins of Division One.

#### DWR MOU with DOW

Since the incident at Halligan discussed above occurred in September, the two state agencies have met to consider how the MOU can be improved. They took into consideration suggestions from the Halligan Task Force Committee and



made additional changes that they felt were necessary in order to improve on the previous MOU. The Water Quality Control Division is being included in the MOU as currently drafted. Currently the MOU is being circulated for comments from water users, attorneys, the Director of the Department of Natural Resources and the affected parties of each Division. It is envisioned that the new MOU will be signed by the three affected state agencies by mid 1997 and implementation of the MOU will begin immediately after that. Former Water District 3 will proceed as a pilot program to see if the modified MOU can be further improved with agreements between the dam owners and the Division Engineer. A difficult part of this effort will be to define which structures should be specifically looked at as presenting a risk to the fishery and aquatic ecosystem.

#### South Platte Lower River Group

The South Platte Lower River Group (SPLRG) was established in 1995 as a grass roots organization to identify and evaluate water resources management and development opportunities in the lower South Platte River basin in Colorado, former Water District 64. Participation in the group includes the Lower South Platte River Water Conservancy District (LSPWCD), the Northern Colorado Water Conservancy District (NCWCD), the Platte River Project (PRP), the Ground Water Appropriators of the South Platte (GASP), the Colorado Water Conservation Board (CWCB), the Colorado Division of Water Resources (DWR), the Division of Wildlife (DOW), and participants from other water conservancy and irrigation districts, ditch companies and cities. The CWCB approved a grant in 1995 for \$75,000 which provided a majority of the funding

for the group. In addition to CWCB money, the LSPWCD, the NCWCD, the PRP, and GASP each contributed \$5000 toward the investigation. These monies were further supplemented by performance of significant in-kind services by these and other participating entities.

SPLRG has primarily focused on recharge projects in former Water District 64 to retime excess flows in the winter and spring so they return at times of need in the summer. Pilot projects have been initiated at the Tamarack and Pony Express Wildlife areas, along the Pawnee ditch, in the Julesburg Irrigation District, and on the Liddle Ditch. In addition to these recharge demonstration projects, several water court applications have been filed recently or will be filed to allow for additional recharge or storage. Many of these applications are due in large part to SPLRG efforts. Recent applicants include:

- Albert and Bessie Fritzler (95CW101) - recharge to lakes along the Springdale Ditch (decreed).
- Bijou Irrigation Company (Case No. 95CW246) - recharge along the Bijou Canal and in a recharge site (decreed).
- Farmers' Pawnee Canal Company (Case No. 95CW263) - recharge along the Farmers' Pawnee Canal.
- Harry Bostrom (Case No. 95CW264) - recharge to ponds off the Farmers' Pawnee Canal.
- GASP (Case Nos. 95CW273 and 96CW1162) - recharge and storage near the South Reservation Ditch.
- Julesburg Irrigation District (Case No. 95CW283 and Case No. 96CW1033) - recharge in the Peterson ditch and other sites along



the Julesburg system and a refill right for Julesburg Reservoir.

- Bravo Ditch Company (Case No. 96CW657) - recharge in the Bravo Ditch and to recharge areas adjacent to the ditch.
- North Sterling Irrigation District (Case No. 96CW1034) - recharge in the North Sterling Canal and in a recharge reservoir.
- Colorado Division of Wildlife (Case Nos. 96CW1062 and 96CW1063) - pilot recharge projects at both the Pony Express and Tamarack Wildlife areas.

Based upon the need and early successes of SPLRG, the CWCB has approved a grant of another \$300,000 for additional investigation and implementation of water resources management and development opportunities in the lower South Platte River basin. Much of this money will be earmarked for additional recharge development at the Pony Express and Tamarack wildlife areas. In addition, each of the entities originally contributing have contributed another \$5000 for this work. SPLRG is also looking for other possible sources of funds from other entities.

Colorado Water Resources Research Institute (CWRI)

One need of many South Platte basin interests and of the South Platte Lower River Group (SPLRG) is the development of a better data base of well information and tools that will help answer questions concerning river depletion's and recharge. Computer tools to assist in this effort are being developed by the Colorado Water Resources Research Institute (CWRI) at Colorado State University. These tools are envisioned to be added as a part of the South

Platte Water Rights Management System (SPWRMS). The Groundwater Appropriators of the South Platte (GASP), the Central Water Conservancy District (Central), the Lower South Platte Water Conservancy District (LSPWCD), the Northern Colorado Water Conservancy District (NCWCD), SPLRG, DWR, and the CWCB among others all are expected to be able to utilize these tools, and have access to data needed to better define depletions and replacement. The CWRI is contributing \$10,000 toward the development of the tools. GASP, NCWCD, LSPWCD, and SPLRG have also each contributed \$3000 for development of the system. In addition, GASP, NCWCD, LSPWCD, SPLRG and DWR office have each contributed \$3000 for a pilot project to obtain satellite imagery for former water District 64. If this proves beneficial, additional partners and/or money from the above groups will be sought out to obtain satellite imagery for the remainder of the basin.

The information from this satellite imagery will be downloaded into a GIS system that can be read by Arc View. In addition, GIS layers of fields irrigated by surface and ground water, cropping information, stream depletion factors, well locations, landowner property boundaries, bedrock elevations, water table elevations, surface elevations, and transmissivity will be created. The computer tools being developed will allow this information to be accessed simply, allow for color mapping, and have zooming capabilities so that field information can readily be checked and displayed. The system will also allow the data to be downloaded into either an SDF or Visual Modflow Model to determine stream depletions. This information can then be verified by use of a Point Flow Model developed for the



South Platte Water Rights Management System.

South Platte Water Rights Management System (SPWRMS)

SPWRMS was enhanced several ways in 1996. First, the PC communications package was modified to take advantage of access to the system through the INTERNET. This extends the useful life of the system by making it more flexible, and may decrease the cost of long distance telephone calls into the system. When the communication package was originally developed, access to the INTERNET was not available. Another major task completed in 1996 was the programmers documentation. Finally, several minor enhancements were completed which were identified during the first years of use.

The remaining enhancement still planned would be to allow data from the system to be input into a PC point flow model which has been developed by the Northern Colorado Water Conservancy District (NCWCD). Division of Water Resources (DWR) staff and CADSWES have coordinated with NCWCD to allow this interaction. Much of the functionality of the SPWRMS is being copied for use in the real time administration tool being developed as a part of the Colorado River Decision Support System (CRDSS). Eventually, the software tools developed as a part of the CRDSS project will be transferred back to the South Platte replacing SPWRMS. The CRDSS tool will enhance what is available through SPWRMS making an even better administration tool.

Long Range Plan Goal Progress

The long range plan had several objectives under Goal 3 to continuously improve water rights administration and water records by increasing the regulation, data collection, and record keeping of water use. In response to this goal, the Division has made significant improvement in augmentation plan administration moving from 78% administered in 1994 to 85% administered (372 administered) in 1996. In addition, the Division increased the number of structures that some record was kept for from 2350 in 1995 to 2569 in 1996. Concerning measurement, former Water District 23 was the area of most concern. The Water Commissioner in former Water District 23 made a concerted effort notifying 18 parties who controlled approximately 80% of the irrigation headgates in the District concerning installation or repair of headgates or Parshall flumes. These structures and measuring devices had either fallen in disrepair or were damaged during the high flows of 1995. Finally, as discussed in the section concerning Colorado Water Resources Research Institute, the Division also is looking into obtaining more information concerning irrigated acreage and cropping patterns.

South Platte Well Study

The field work for the cooperative pilot program to evaluate the accuracy of various methods of measuring well pumping concluded in November, 1995. The agencies which cooperated with Division 1 were the Ground Water Appropriators of the South Platte (GASP), Central Colorado Water Conservancy District (CCWCD) and the Lower South Platte Water Conservancy District (LSPWCD).



Analysis of the data from the 28 study wells is on-going, but the available time is dependent on the other work load of the lead investigator. The data collected for each of the 28 subject wells consists of four field well efficiency test results and either weekly or biweekly data on power consumption, hours of operation and, where available, flow meter readings for the 1993, 1994 and 1995 irrigation seasons. Preliminary results appear to show general agreement in the estimated volume of water pumped using these three data sources for non-surgings wells. We hope to get the final report out sometime this summer.

#### Lysimeter Study

The cooperative small lysimeter-lawn grass return flow study being conducted at CSU is complete. The final report was released by the Colorado Water Resources Research Institute in December, 1996 under Completion Report No. 189, titled Consumptive Use and Return Flows in Urban Water Use. The two most interesting graphical comparisons from the report are shown as Figures 1 and 2. The results of the study indicate that A) the two types of small lysimeters (drainage and weighing) typically used in lawn grass return flow studies provide acceptable accuracy when compared to a large lysimeter and standard ET equations and B) any differences in the estimates of deep percolation provided by the two types of small lysimeters are not statistically significant. The final sentence in the conclusions section of the report is most enlightening. It reads, "The fact that the CSU and the Cottonwood Curve are almost identical, reinforces the appropriateness of using the Cottonwood Curve for general applications throughout the Front Range.". Division 1 has a very limited number of copies of the final report for

distribution within DWR. Contact Dave Nettles if you are interested in receiving one of these copies.

#### Well Location Program

Division 1 started a program that will be used to locate the majority of the non-exempt high capacity wells in the division using a GPS unit. The initial phase of this project began in former Water District 2 near the City of Brighton during the 1996 irrigation season. Approximately 250 wells in a three township area were located to a five meter accuracy level using the GPS unit. We expect to continue in an



organized manner on a section by section basis until we have located all wells in that district. We also expect to begin a similar project in former Water District 64 during the 1997 irrigation season. Even if we can double the progress made in 1996 using two location teams, it is still currently projected that the completion of the entire project will take well over ten years to complete, given the number of non-exempt wells in the Division. Our hope is that we can also get other entities interested in locating wells and thus reduce the time needed to locate all the non-exempt wells in Division One.



Metropolitan Water Supply Investigation (MWSI)

This study is expected to be completed early in 1997. At the current time, the project management team is taking final comments regarding the alternatives being considered as possible solutions for the future water supply needs of the metropolitan area. They also have heard from the various entities of the Metropolitan area regarding their existing water supplies and long term needs. Denver Water (Denver) has asked that water providers in the Southern, Northeast, and Northwest quadrants of the metropolitan area work together to propose how they would work with Denver to meet the needs of both Denver and the water suppliers of that area in the future. This proposal has resulted in the entities in each area working together. It is anticipated that this will continue after the MWSI is completed as that has always been a goal of the MWSI. Denver has asked that the State and the consultants for the MWSI continue to work with these parties in the future as facilitators in the process. The State has agreed to participate as long the parties wish but has limited funding to put towards this new effort.

SB-74

The Division of Water Resources and Colorado Water Conservation Board (CWCB) have begun work on a technical study of the South Platte River Basin and groundwater in the Denver Basin aquifers. The General Assembly authorized the study in Senate Bill 96-74, which also established a special legislative committee to oversee the study and make recommendations to the legislature. Senate Bill 96-74 was

initiated in response to concerns about the impacts of groundwater based development in the Denver metro area and Douglas County on water rights and water availability downstream on the South Platte River. Funding for this study will be provided by the CWCB. The CWCB has authority to expend from \$40,000 to \$75,000 for consulting services. The study will also assess the need for and scope of participation by the State of Colorado associated with efforts to recover endangered and threatened species in the Platte River Basin. The enabling legislation set out the following issues:

- An inventory of surface water and groundwater resources in the South Platte River basin;
- The effect of existing efficiencies and conjunctive management of surface water and groundwater resources on future supply and on local and regional existing water rights above the Henderson gauge;
- The effect of existing water reuse on future supply and on existing water rights;
- A review of distribution system infrastructure in Denver metro area to identify ways to promote maximum utilization of the water resources available to the South Platte Basin above the Henderson gauge;
- The effect on existing water rights of current recharge technology and practices in Denver Basin aquifers;
- The impact of de minimis standards for injury based upon an annual depletion standard;
- The effect of the four percent replacement and the two percent relinquishment requirements of current law on future water supplies and on existing water rights, and the need for placement of post pumping



depletion's resulting from withdrawal of Denver Basin groundwater.

- Use of non-tributary groundwater and its long-term impact on water rights;
- The legislation also provided that assessment be made of:
- The need for and scope of participation, including financial participation, by the State of Colorado in processes associated with the implementation of the federal "Endangered Species Act of 1973" 16 U.S.C. Sec. 1531, et seq., as amended with respect to the exercise of water rights associated with water resources and the South Platte River Basin and the Denver Basin;
- Opportunities for the application of local regional water use efficiency and reuse technologies and methods, in conjunction with additional water supply sources, to enhance the reliability and yield of water rights associated with the water resources of the South Platte River Basin and Denver Basin including identification of potential financial and institutional options to improve water resource management within the South Platte River Basin and Denver Basin;
- Surface and groundwater development in the Lower South Platte River in accordance with the South Platte River Compact.

In 1996, a public meeting was held in Sterling and Castle Rock to obtain public input concerning the study. In addition, Hydrosphere was selected as a consultant to perform several tasks associated with the project. In the near future, peer review groups will be established to allow interested parties an opportunity to review and contribute input to the study. A report of the results of these studies is scheduled for no later

than June 1, 1997. Written comments will be sought and public hearings held on the draft report that is proposed for submittal by the State Engineer (SE) and CWCB Director. The SE and CWCB Director will consider the written comments and public hearing comments prior to making final recommendations to the legislative committee for possible legislation.

#### Cherry Creek Basin Management Plan

The Division continued its participation in a Cherry Creek basin management plan. The participants in the plan include the major water appropriators in the Cherry Creek basin above Cherry Creek Reservoir. The goal of the participants is to maximize the legally and physically available water in the basin. The plan to do this is by increased communication and coordination between users in the upper Cherry Creek basin, collection of necessary data and development of computer tools and models to facilitate water management. The main efforts in 1996 have been data collection and refinement of a model which was developed for the basin.

## **ON-GOING WATER ISSUES OR OPERATIONS**

#### Platte River Basin-Wide Endangered Species Negotiations (Taken from Department of Natural Resources Background and Status Report, September 1, 1996)

##### I. Introduction

Since June, 1994, representatives from the States of Colorado, Nebraska and Wyoming and the United States Department of the Interior have been searching for basin-wide solutions to endangered species permitting and



management issues in the Platte River Basin. The dual goals of these negotiations are to benefit federally designated endangered species that occur in the central Platte River Basin in Nebraska and to streamline and simplify the regulatory processes that otherwise would apply under the federal Endangered Species Act (ESA). Colorado has been represented in these negotiations by Jim Lochhead, Executive Director of the Colorado Department of Natural Resources, and Doug Robotham, Assistant Director at the Department. The negotiations are being conducted in accordance with a Memorandum of Agreement signed in June, 1994 by Governor Romer, his counterparts in Nebraska and Wyoming, and the Secretary of the Interior.

The negotiations were triggered in late 1993 by a preliminary U.S. Fish and Wildlife Service determination pursuant to Section 7 of the ESA that operations of several existing water supply facilities in Colorado's South Platte River basin posed an unacceptable threat to the continued existence of several federally protected endangered birds occurring downstream in Nebraska. As a remedy to this alleged unacceptable threat, the Fish and Wildlife Service indicated these facilities would have to replace the hydrologic "depletions" they create so as to maintain and approve aquatic habitat conditions for the listed species. Water users in Colorado objected that this requirement would impose unacceptably (in many cases impossibly) high burdens on water development and delivery organizations. The effects of these preliminary determinations were not limited to Colorado water facilities, since facilities in Nebraska and Wyoming on the North Platte River faced similar determinations by the Fish and Wildlife Service in conjunction with separate permitting processes.

The states and water users believed in late 1993, and continued to believe, that a piecemeal, project-by-project approach to regulation under the ESA will do little to meet the needs of the listed species, since so many other intervening influences in the Basin effect the species and their habitats. The parties also believe, though perhaps for different reasons, that such piecemeal determinations raise serious basin-wide and inter-state equity issues, since the Service has not distinguished between water facilities it regulates in the Platte River Basin in terms of size, proximity to the habitat in question, or magnitude of effects on the species and habitat. The Service, and to a lesser degree key representatives of environmental conservation organizations, have also recognized the limitations of this traditional approach to regulation under the ESA. Thus, the States, water users, the federal government, and environmental community -- in varying degrees and for different reasons -- are motivated to find a basin-wide solution to endangered species permitting and management issues effecting the Platte River Basin. All these parties are now formally represented in the negotiations.

Notwithstanding this general motivation, a basin-wide solution remains elusive. A number of difficult issues continue to separate the negotiating parties. However, it is not inconceivable that these difference will be resolved and a conceptual agreement on a basin-wide solution reached within the next several months. Such a conceptual agreement would then be subjected to internal review and ratification by each of the entities represented in the negotiations. In Colorado, for example, the conceptual agreement would likely need approval and support of the Governor and the General Assembly, as well as various effected constituencies.



## II. Relationship of Platte River Negotiations to SB-74 and the Special Water Committee

Among the many issues to be addressed in the technical study authorized by SB-74 is "an assessment of the need for scope of participation, including financial participation, by the State of Colorado in processes associated with the implementation of the federal "Endangered Species Act of 1973," as amended, with respect to the exercise of water rights associated with water resources in the South Platte Basin and the Denver Basin." The technical study and public hearing processes established by SB-74 present an excellent opportunity to conduct a careful and reasoned public review of the pending conceptual agreement on a basin-wide solution to endangered species issues in the Platte River Basin.

## III. Key Elements of the Negotiations

As negotiations have progressed, several key themes have emerged. These are summarized briefly below:

1. *Regulatory Certainty:* The advantages of the basin-wide, programmatic approach to ESA compliance, in contrast to project-by-project compliance, is that it can bring all water management activities in the Platte River Basin subject to ESA compliance under a single, streamlined regulatory process. Through such an approach, the "guess work", uncertainty, and delay that often accompany compliance with complex regulatory programs such as the ESA can be minimized, economies of scale can be captured, and interstate equities preserved.

In recognition of these advantages, the state and water users have insisted that the basin-wide program, once fully

developed and agreed upon, will serve as a single, common program to offset any perceived impacts to listed species or their habitats that might arise from any water management activity in the Basin required to comply with ESA. In ESA parlance, the program would be recognized by the Fish and Wildlife Service as the "the reasonable and prudent alternative" that allows water management in the basin to avoid "jeopardizing the continued existence" of listed species or the "adverse modification to designated critical habitat". The Fish and Wildlife Service has agreed to this principle.

2. *Legal Certainty:* For the last several years, Nebraska has been in litigation with Wyoming regarding the interstate decree entered by the Supreme Court that apportions the waters of the North Platte River between Wyoming and Nebraska. Colorado is an intervenor in the case. One of the issues being litigated is the degree to which Wyoming is responsible for maintaining favorable flows in the river for aquatic habitats in Nebraska. Wyoming and Colorado are insisting in the Basin-wide negotiations that Nebraska withdraw these habitat-based claims being advanced in the North Platte litigation. Wyoming and Colorado reason that it makes no sense to enter into a basin-wide negotiated agreement only to face continued litigation from Nebraska on essentially the same issue. This matter remains unresolved.

3. *Land Conservation:* The species in question -- the whooping crane, piping plover, and interior least tern -- depend on habitat in the Big Bend Reach of the Platte River for nesting, raising young, and as a staging area for transcontinental migrations. The negotiating parties have determined that 29,000 acres of in-channel and out-of-



channel habitats over the 80 mile extent of the Big Bend Reach are needed by the listed species. Approximately 10,000 acres have already been secured and preserved for habitat protection by various non-profit non-governmental organizations, leaving the Basin-wide program to secure 19,000 acres through willing-seller purchases. At approximately \$2,500 per acre for acquisition and management costs, land conservation could cost the Basin-wide Program approximately \$50 million.

4. *Water Flow Regulation:* The Fish and Wildlife Service has recommended desired average water flow rates in the Big Bend Reach of the Platte River for each month of the year to provide favorable habitat conditions for the listed species. On an average annual basis, current flows are 417,000 acre-feet below the Service's recommended flows, due to decades of water development and depletions throughout the Platte River Basin. The negotiating parties have tentatively agreed that during the first fifteen years of a Program, the states and water users would improve flows on an average annual basis in the Big Bend Reach by 130,000 to 150,000 acre-feet. Flow improvement would be achieved through three distinct but coordinated plans -- one per state -- to re-regulate existing flows from winter months to the more biologically important summer and fall months.

Colorado's plan would involve the conjunctive management of surface and tributary ground water on Colorado Division of Wildlife properties located downstream of Fort Morgan. This plan would augment summer flows in the lower South Platte for habitat purposes by 10,000 acre-feet. In conjunction with re-regulation proposals being proposed by Nebraska and Wyoming, re-

regulation would provide 60,000 - 80,000 acre-feet towards the 130,000 acre-foot goal. The balance would be provided through investments in water conservation in Nebraska as well as other potential sources of new supply.

Capital and operational costs for the three flow re-regulation plans over the first fifteen years of a Basin-wide Program are tentatively projected to be \$30 million. Securing additional flows beyond those provided by the re-regulations plans is tentatively projected to cost \$10 million. Thus, the overall water component of a Basin-wide Program over a fifteen year period is tentatively projected to cost \$40 million.

5. *Fair Share:* With land and water costs tentatively projected to be \$90 million over the first fifteen years of the Program, and program administrative costs tentatively projected to cost an additional \$5 million, the costs allocated to each participating party has been a subject of much discussion. While unresolved, we project Colorado's costs could be \$1.7 to \$2 million per year for the first fifteen years of a Program.

#### IV. Alternatives to a Basin-wide Program

Alternatives to a Basin-wide program do exist for Colorado water users in the South Platte Basin. These include the status quo, in which individual water management activities required to comply with ESA would be regulated in isolation from others. Regulatory compliance could be extremely costly for some entities under this scenario.

Other entities could choose to litigate rather than comply with regulations they perceive to be too burdensome or unjustified. Thus litigation is another alternative to a Basin-wide program.



However, for a variety of reasons, successful litigation in this arena for individual water supply entities is potentially very uncertain.

The final alternative to Basin-wide Program would be a "Colorado-only" Program. Such an alternative would be memorialized in an agreement between the federal government and Colorado, and would exclude Nebraska and Wyoming. Such an agreement could be a wise course of action if issues that currently divide Colorado and Nebraska, such as resolution of the North Platte litigation, are not resolved to Colorado's satisfaction.

#### V. Future Schedule

The negotiating parties are meeting approximately every two to three weeks. As progress is made over the next several weeks and months, the Colorado Department of Natural Resources will continue to brief the Special Water Committee and will explore with the Special Committee appropriate ways for the State of Colorado to participate in any Basin-wide Program that may emerge from these discussions.

#### Republican River Compact

During the past year, representatives of Nebraska, Kansas and Colorado discussed compact accounting issues. Several concerns of each state were discussed and resolution was obtained on how consumptive use and well pumpage shall be calculated when pumping records for wells are not available. However, there remains an issue of which wells should be considered as compact wells. Nebraska and Kansas have the most significant arguments between them regarding compact wells

and compact depletions. They are attempting to resolve some of these issues through ongoing mediation.

#### Denver Water Board 150 CFS Operations

During the past year, the Denver Water Board felt it was important to maintain a 150 CFS flow rate on the South Platte River below Chatfield Reservoir downstream to the headgate of the Burlington Canal from May 16 through September 15. In order to accomplish this, they signed an agreement with Farmers Irrigation Company (FRICO). This agreement states that whenever the natural flows in the South Platte River in this reach are less than 150 CFS, the Denver Water Board will release reusable water that they have previously stored from Chatfield Reservoir to make up the shortfall. This additional water, less transit losses, would then subsequently be diverted into the Burlington Canal and delivered to storage in Barr Lake. During the following water year, during November, the water would then be exchanged back up to Chatfield Reservoir. The agreement limits Denver's supplementing to 1500 acre-feet. It also states that Denver suffers transit loss both in the river and in the ditch system by operation of this program.

While this program is likely to continue, the agreement may be modified for 1997 operations. The Division must assure operation of this agreement will not injure other water users.

#### Chatfield Study

The U.S. Army Corps of Engineers (Corps) began evaluation of its Water Control Manuals for the operation of Bear Creek, Cherry Creek



and Chatfield Dams and Reservoirs (Tri-Lakes system). As a part of this evaluation, the Corps had two public meetings in May to talk about flood-related issues in the South Platte basin. At the meetings, the Corps took public comment on its revision of the Water Control Manuals. Several parties expressed concern about the release of water from the reservoirs during the high flow periods in 1995. At the meetings, the Corps also explained its new regional 404 permit for flood repair and protection. In addition, a Chatfield Reservoir Workgroup was formed to look at issues associated with the Tri-Lakes system including reservoir operation during a flood and space allocation in Chatfield. The Colorado Water Conservation Board (CWCB) also authorized the expenditure of up to \$300,000 from the CWCB Construction Fund for implementation of a reconnaissance study of allocation of space in Chatfield and operation of the reservoir in flood situations.

#### US Forest Service/Poudre

The Joint Operating Plan (JOP) that was agreed upon worked well last year and is currently underway again. Several entities located along the front range of Colorado have facilities (structures) which are located on the Forest Service property. They are allowed to operate these facilities based upon special use permits issued and renewed periodically by the U.S. Forest Service. After much negotiation, the City of Greeley, City of Fort Collins, and the Water Supply and Storage Company were able in 1994 to obtain long term easements for their structures in the forest needing permit renewal. This was accomplished by development of the JOP utilizing the combined facilities of the three entities to enhance habitat along the Poudre

River within the forest. Specifically, The City of Fort Collins (Joe Wright Reservoir), Water Supply and Storage Company (Long Draw Reservoir and Chambers Lake), and the City of Greeley (Barnes Meadow and Peterson Reservoir) agreed upon an operational scheme using the facilities mentioned to enhance the trout habitat on the mainstem of the Poudre River during critical winter months by releasing 10 cfs from the combined reservoir system. Through coordination with the Water Commissioner, the JOP continued successful operation in 1996. However, the National Trout Unlimited organization has challenged in Court the issuance of the permits in the Forest. There has not been a court hearing on this challenge to date.

## **ISSUES NOT ADDRESSED**

### Irrigated Acreage/Actual Location of Fee Wells

There is a need to know the irrigated acreage throughout Division One. This information needs to be supplemented with information concerning what ditches and/or wells serve each irrigated parcel. This will eventually be necessary when a model similar to CRDSS is developed for this division. A field verified location of all fee wells and the amount pumped will also be needed to eventually develop a detailed groundwater model. The current program to identify fee wells that has been started in former water District 2 is only a beginning and unless additional funds and manpower are provided it will take at least ten years to complete. It is hoped that cooperative efforts can be worked out with groundwater organizations. It is hoped that determining irrigated acreage and source of supply will be assisted by the use of satellite imagery. The satellite



imagery being obtained for former water District 64 as a pilot study (see Colorado Water Resources Research Institute discussion) will help determine how helpful satellite imagery will be in determining irrigated acreage and source of supply.

### Partial Occupancy of Dwellings

**D**uring the past several years, counties have approved subdivisions based on a portion of the dwellings in the subdivision being occupied for only part of the year. Plans for augmentation have also been approved based upon this assumption. However, the developer never identified which dwellings would only be occupied part of the year. Recently this has become a problem, especially in Jefferson County and areas located across the Continental Divide from Summit County. The high cost of living in adjacent areas has resulted in people moving into areas that were never originally proposed for year round homes. In the near future, well permits may have to be denied because of the number of full time homeowners being claimed. Field investigations may also find homes where people live year around, but permits were issued for only partial year occupancy. This office will become the bad guys to the homeowners. They ask how we ever allowed the counties to approve such limitations on occupancy when approving the subdivision and not requiring the developer to identify which lots were to be occupied part of the year. Now our staff must arrive at a decision which landowners will not get wells or must provide additional augmentation water supplies. This same issue exists for plans for augmentations that did not identify which wells would be occupied for only part of the year. This office should

oppose any future developments approved by counties or in plans for augmentation, that use such an assumption, unless the lots are specifically identified and lot owners are warned of such a limitation of occupancy.

## **COURT DECISIONS**

### Thornton Supreme Court Decision

**O**n October 16, 1996, the Colorado Supreme Court announced its decision in the appeal concerning Thornton's Northern Plan. The plan had previously been decreed in Case No. 86CW401, 86CW402, 86CW403, and 87CW332 February 18, 1984 after a trial spanning 57 days with 49 objectors. The Northern Plan was designed to yield in excess of 50,000 AF annually of Cache la Poudre water for use in Thornton. Thornton's plan involved new appropriations, changes of water rights, river exchanges and a ditch exchange. The change of water right portion of the case involved buying 47.23% of the Water Supply and Storage Company and drying up 21,000 acres irrigated by that water.

In its 227 page opinion, the Supreme Court made decisions concerning a plethora of issues. Of first importance, the Court reached the conclusion that Thornton's notice on all parts of the application was adequate and the application was not speculative. The Supreme Court did allow the water court to impose reality checks to allow revisiting the population projections upon which Thornton's conditional water right is premised. The Supreme Court likewise confirmed the water courts conclusion that Thornton cannot use CBT water either directly or indirectly by exchange in Thornton since it is outside



the Northern Colorado Water Conservancy District boundary.

The Supreme Court reversed the trial court's ruling concerning the reuse of transbasin water stating no separate intent to reuse is necessary and the right to reuse cannot be abandoned. The Supreme Court confirmed the trial court that Thornton must maintain historic return flows to aquifers for the benefit of tributary wells and that Thornton was responsible for revegetation of dried up farms. Concerning water quality, the Supreme Court ruled that Thornton did not have to concern itself with diminishing flows that which might increase treatment costs for Kodak's wastewater and that the Division Engineer has substantial authority in determining quality of water to be used as a substitute supply. Finally, the Supreme Court overruled the trial court stating that the State cannot force Thornton to pay part of the costs of administration of this decree under any conditions.

#### Abandonment Case

The Division 1 Water Court finally issued a decree for the 1990 Abandonment List on January 6, 1997. This happened after all of the protests to the list had been addressed, generally by a stipulated agreement between the applicant and the State and Division Engineers whereby the subject water right was removed from the abandonment list and the abandonment issue raised in a related change of water rights case.

#### Englewood 90CW221

This case involved a two day trial before the Division 1 Water Judge in January, 1996 on the issue of an unlined gravel pit obtaining a water

storage right. Englewood used their expert witness to argue that storage of water in an unlined gravel pit could be accomplished strictly by means of the proper accounting techniques. This office argued that without proper lining, the water would seep out of the pit to the river and any subsequent attempt to withdraw the "stored" water would be a groundwater withdrawal resulting in out-of-priority depletions to the river and injury to other water rights. The Judge agreed with the State's position and denied the storage right, but gave Englewood the opportunity to propose terms and conditions to prevent injury to other water rights. Englewood has filed an amended application in this case, but no decree has been entered.

#### Crystal Lakes

This case involved an action brought by the Crystal Lakes Water and Sewer Association against a minority of lot owners within the Crystal Lakes Subdivision who had not paid their dues to the Association. The subdivision augmentation plan was decreed in a joint decree in Case Nos. W-7631-74 and W-8540-77. Defendants had claimed that their wells were exempt from administration and thus they did not have to pay dues to the Association. Originally, the trial court ruled that the subject matter was not a water matter and dismissed the complaint. Crystal Lakes then appealed to the Supreme Court concerning this decision. The Supreme Court over turned the trial courts decision stating that the issue was indeed a water matter.

Both the defendants and Crystal Lakes then moved for Summary Judgment in the trial court. The trial court granted summary judgment to Crystal Lakes stating that the decrees recognize "that the Association's augmentation plan is



necessary to prevent injury that results from the cumulative pumping from all wells in the development. It does not exclude depletions that result from pumping of exempt wells in the determination of the timing and volumetric need for augmentation. Accordingly, the cost of administering the augmentation plan is spread among all landowners, whether they rely on exempt wells or upon the Association's delivery system".

In response to the Summary Judgment Order, the State Engineer will be notifying the owners of previously considered exempt wells of their need to obtain new or amended permits. As a condition of the issuance or amendment of such permits, the State Engineer shall require proof of current membership in the Crystal Lakes Water and Sewer Association.

#### Berthoud Case

The Supreme Court previously ruled in this case that Berthoud had the first priority on the stream based on consistent administration by the Division Engineer since 1944 and remanded the Water Court's abandonment of Berthoud's 3 cfs winter water right for factual findings and conclusions of law. The Water Court issued a Memorandum of Decision, Order and Decree on the abandonment portion of this case on October 2, 1996. The Water Court concluded that "After three quarters of a century of nonuse, Berthoud's showing is insufficient to overcome the presumption of abandonment." and abandoned Berthoud's 3 cfs water right from November 1 to April 26 of the following year. This decree was not appealed.

## PERSONNEL/WORKLOAD ISSUES

### Well Administration Activities

In addition to the activities previously discussed under the Groundwater, Non-Exempt Well Location Program and Big Thompson Canyon Well Administration sections, the Water Commissioners have continued to spot check water well construction. Also, it seems that the number of field inspections required for both registrations of pre-1972 exempt type wells and replacements for non-exempt wells is increasing. This may be a result of both growth along the front range and many of these wells reaching the end of the 20 to 30 year working life generally expected of water wells.

### South Park Applications

As discussed briefly under the Groundwater section of this report, a very large number of applications for underground water rights were filed in Water Court in 1996. Of the 900 to 1,000 South Park well applications filed, over 800 occurred in the month of December, 1996. These applications have created several increased workload issues for both Division 1 and the Denver Office. The first issue created was for the Water Commissioner in former Water District 23, as she was inundated with requests for assistance by the public in completing the court application form. This was partially solved by hiring a temporary employee to assist her for a few weeks. The second issue created was for the Division and Denver Office staffs in processing this many applications. Our hats go off to the effort put forth by the team created in the Denver Office to handle the analysis and creation of findings for this many



applications. The timely response from the Denver Office is especially important because these findings are now presumptive in groundwater cases and they must be out within four months of the filing of the application. Related to this is the processing of the Summaries of Consultation by the Division office staff, which will create a significant amount of unanticipated work and expense for copies, postage, etc.. The third issue created is again for the former Water District 23 Water Commissioner as many of the 800+ applications filed in December must now be field inspected. Again, we hope to at least partially solve this problem by hiring the previous Water Commissioner for former Water District 23 as a temporary employee to do many of these field inspections. Finally, we will presumably have to monitor and review Referee Rulings on this large number of cases for several years to come. When we first began to realize the number of applications being filed in December, we felt like we were in a tunnel with the only light provided by the headlamp of an on-coming train! Now we at least feel that there may be enough room in the tunnel to move aside and avoid being run-over.

#### Workload Measure Study

Division staff continued to participate on a workload measure project for water commissioners. Determination of workload measures will assist the State Engineer in providing information to the legislature concerning existing staff use and necessity of new staff. The group has tried to come up with measures using the limited information of workload that presently exists. The group has also has focused on what additional information might be collected in order to gain a better understanding of workload.

#### Dam Safety

The dam safety engineers in Division One plan to continue to inspect dams on the 1-2-6 frequency and assist federal agencies. Inspection of outlets will continue at a rate to accomplish all inspections within the 10 year period. Emergency preparedness plans (EPP's) should also be completed for Class 2 Dams. Division staff have completed hydrologic reviews for all Class 1 Dams and continue efforts toward completing Class 2 Dams.

#### Administration

The major impacts stemming from growth in the South Platte Basin has had significant impacts on water resource administration. One area where administration has been most affected has been in the complexity of new decrees and plans for augmentation. These items have resulted in increased overtime hours for water commissioners and staff. Since most water commissioners are already overtaxed for time, Division One assigned an additional 3/4 of an FTE as an assistant water commissioner to former Water District 7 (Clear Creek). This person works in the field in the upper reaches of Clear Creek and Dry Creek below Standley Lake. Another 3/4 of an FTE was assigned to an assistant water commissioner for the combined former Water Districts 8 & 80 to assist those water commissioners in water administration. This same person would be expected to help in water rights accounting in the Denver Office of the Division Engineer. At a later date, work load will eventually have to be reassigned to assist the northern region of the front range to aid in the administration complex decrees such as



Thornton's change case, Ft Collins change case and other decrees of Greeley, Loveland, and Longmont.

*Division One Staff*

**A**t the end of this report, we have attached photographs of Division One Staff and our current organizational chart.



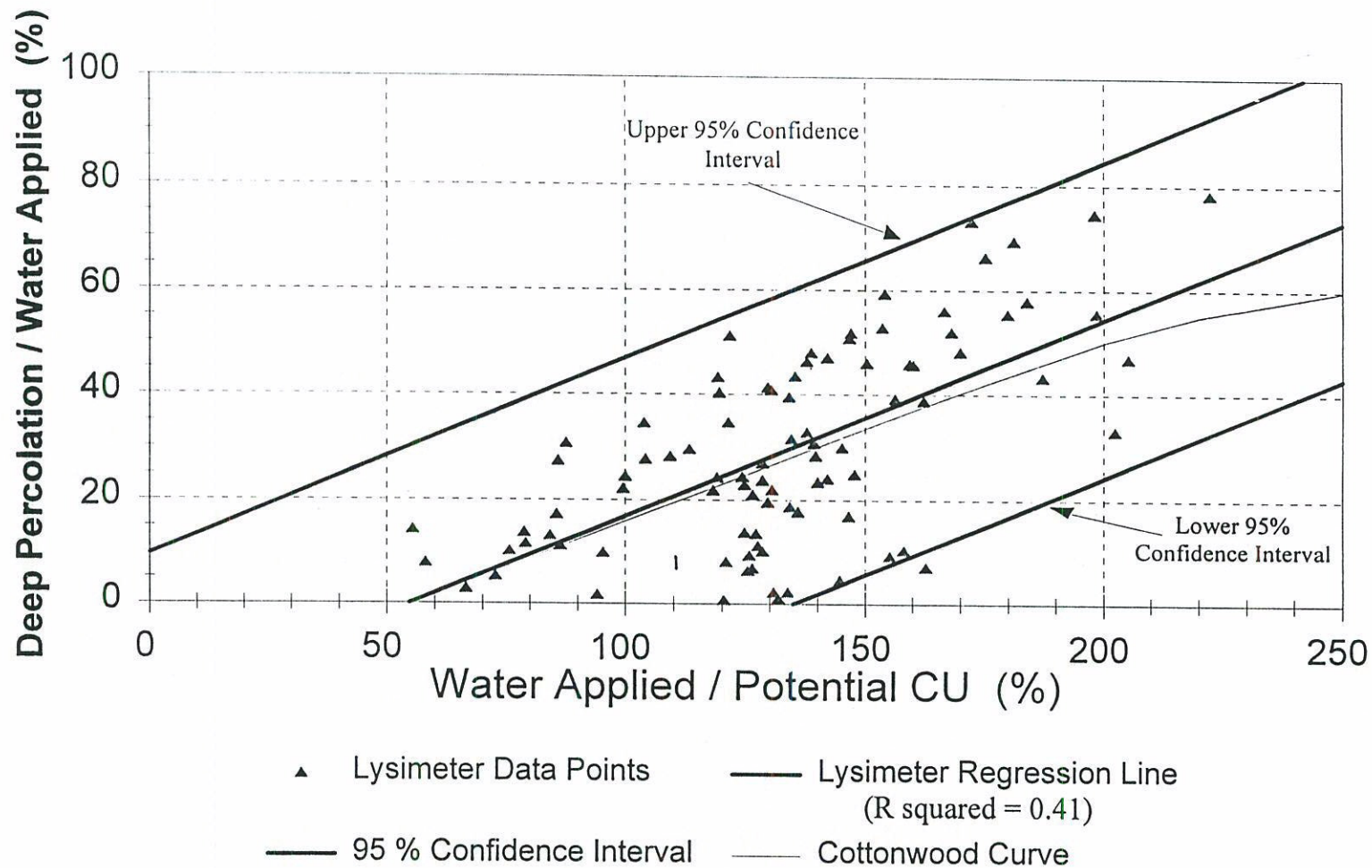


Fig.1 Cottonwood Curve Compared to CSU Data



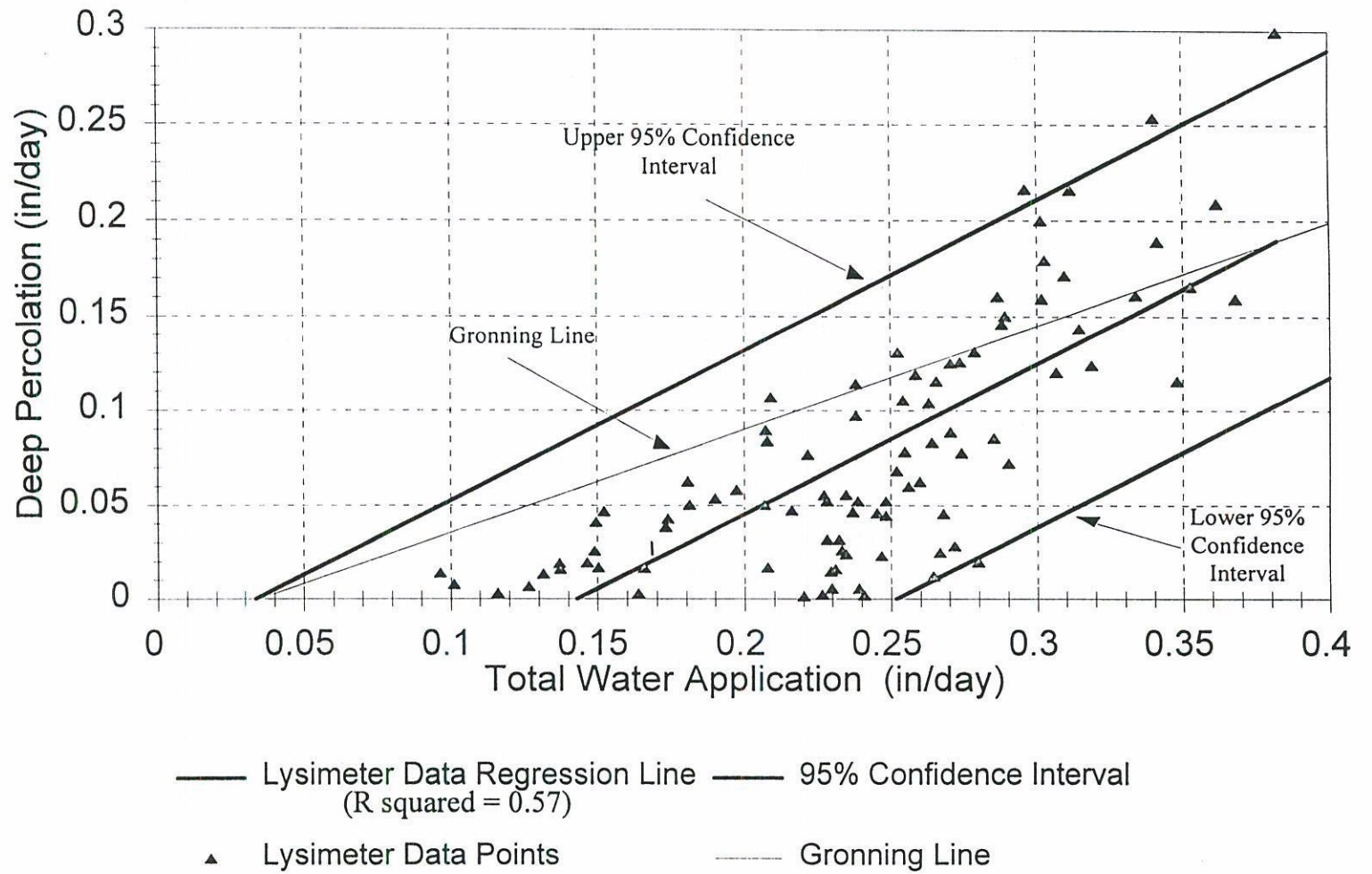


Fig. 2 Gronning Line Compared to Modified CSU Data



## Runoff Forecast

### SOUTH PLATTE RIVER BASIN Reservoir Storage (1000 AF) - End of January

| RESERVOIR        | USABLE CAPACITY | USABLE STORAGE |           | AVERAGE |
|------------------|-----------------|----------------|-----------|---------|
|                  |                 | THIS YEAR      | LAST YEAR |         |
| ANTERO           | 20.0            | 1.0            | 15.0      | 15.0    |
| BARR LAKE        | 32.0            | 25.3           | 25.2      | 22.6    |
| BLACK HOLLOW     | 8.0             | 3.0            | 3.0       | 4.0     |
| BOYD LAKE        | 49.0            | 34.9           | 28.0      | 33.7    |
| CACHE LA POUFRE  | 10.0            | 8.0            | 8.5       | 7.2     |
| CARTER           | 108.9           | 81.7           | 80.2      | 81.6    |
| CHAMBERS LAKE    | 9.0             | 2.5            | 5.0       | 3.0     |
| CHEESMAN         | 79.0            | 67.0           | 72.0      | 56.0    |
| COBB LAKE        | 34.0            | 15.5           | 15.5      | 13.9    |
| ELEVEN MILE      | 97.8            | 100.0          | 100.0     | 91.0    |
| EMPIRE           | 38.0            | 29.5           | 28.4      | 22.8    |
| FOSSIL CREEK     | 12.0            | 6.0            | 9.0       | 6.5     |
| GROSS            | 43.0            | 22.0           | 28.0      | 26.4    |
| HALLIGAN         | 6.4             | 6.5            | 6.0       | 3.8     |
| HORSECREEK       | 16.0            | 11.2           | 12.6      | 12.1    |
| HORSETOOTH       | 149.7           | 127.4          | 128.4     | 89.0    |
| JACKSON          | 35.0            | 20.4           | 20.7      | 28.8    |
| JULESBURG        | 28.0            | 16.4           | 20.6      | 19.9    |
| LAKE LOVELAND    | 14.0            | 9.3            | 9.6       | 8.8     |
| LONE TREE        | 9.0             | 5.8            | 8.0       | 6.0     |
| MARIANO          | 6.0             | 5.2            | 4.4       | 4.5     |
| MARSHALL         | 10.0            | 6.5            | 5.8       | 4.1     |
| MARSTON          | 20.0            | 0.0            | 9.0       | 13.8    |
| MILTON           | 24.0            | 14.0           | 15.5      | 13.8    |
| POINT OF ROCKS   | 70.0            | 59.4           | 56.5      | 55.0    |
| PREWITT          | 33.0            | 14.2           | 19.9      | 17.4    |
| RIVERSIDE        | 63.1            | 37.1           | 47.1      | 40.1    |
| SPINNEY MOUNTAIN | 48.7            | 31.3           | 30.4      | 34.6    |
| STANDLEY         | 42.0            | 37.7           | 39.0      | 25.4    |
| TERRY LAKE       | 8.0             | 5.0            | 5.0       | 5.1     |
| UNION            | 13.0            | 12.0           | 10.6      | 10.5    |
| WINDSOR          | 19.0            | 11.0           | 12.0      | 10.3    |

Information taken from Colorado Basin Outlook Report, February 1, 1997.

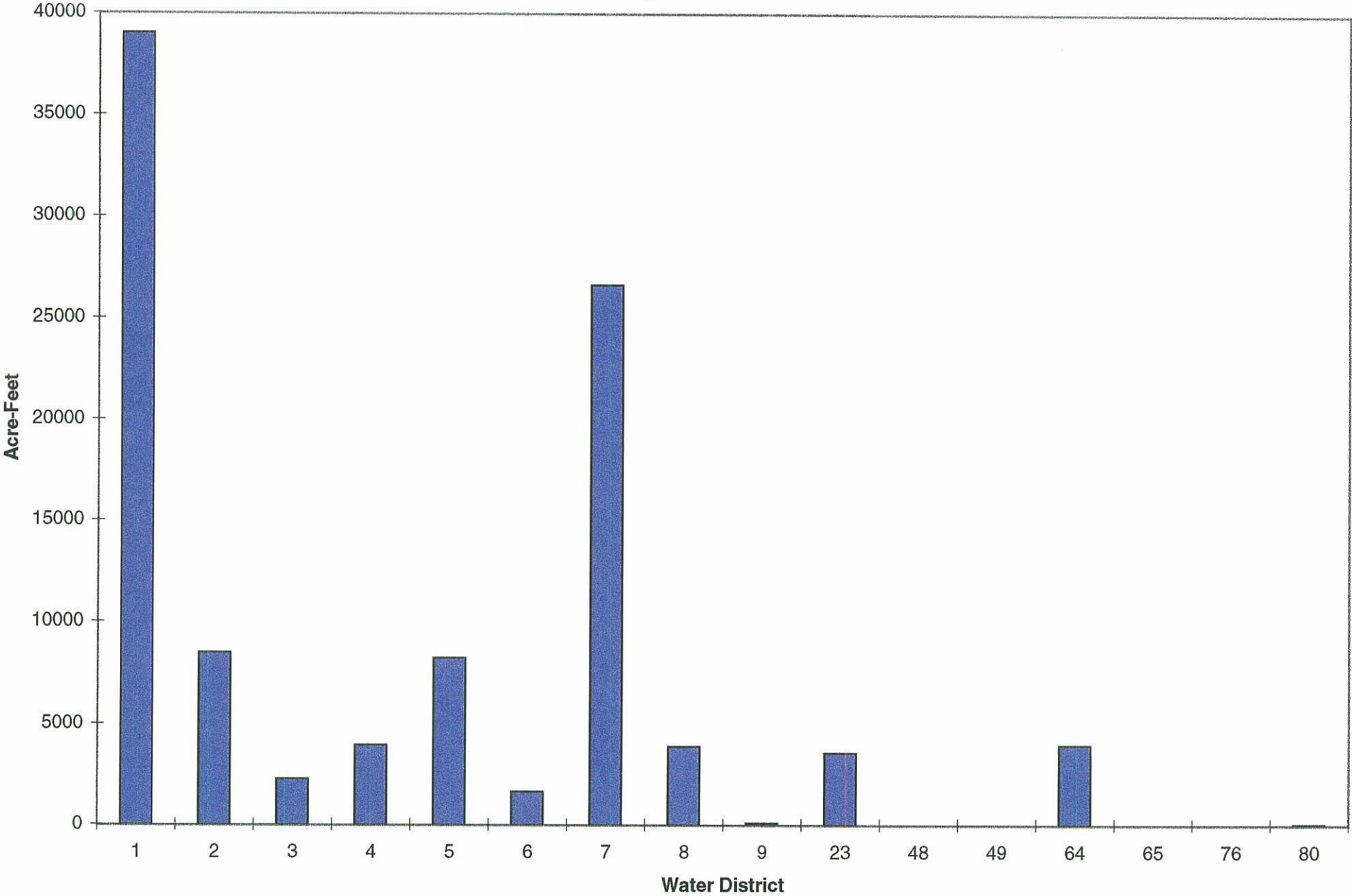
### SOUTH PLATTE RIVER BASIN WATER SNOWPACK

| WATERSHED                | NUMBER OF DATA SITES | THIS YEAR AS % OF |         |
|--------------------------|----------------------|-------------------|---------|
|                          |                      | LAST YEAR         | AVERAGE |
| BIG THOMPSON BASIN       | 6                    | 105               | 157     |
| BOULDER CREEK BASIN      | 5                    | 86                | 166     |
| CACHE LA POUFRE BASIN    | 8                    | 103               | 138     |
| CLEAR CREEK BASIN        | 4                    | 98                | 150     |
| SAINT VRAIN BASIN        | 3                    | 96                | 161     |
| UPPER SOUTH PLATTE BASIN | 11                   | 120               | 148     |

\*Information taken from Colorado Basin Outlook Report, February 1, 1997.



**DIVISION 1  
1996 Augmentation Releases**





**1996 TRANSMOUNTAIN DIVERSION SUMMARY - INFLOWS  
(November 1995 - October 1996)**

| RECIPIENT |      |                       |                       |             |      |              |      | SOURCE |      |                    |
|-----------|------|-----------------------|-----------------------|-------------|------|--------------|------|--------|------|--------------------|
| WD        | ID   | NAME                  | STREAM                | 10 YEAR AVG |      | CURRENT YEAR |      | WD     | ID   | STREAM             |
|           |      |                       |                       | AF          | DAYS | AF           | DAYS |        |      |                    |
| 3         | 4604 | WILSON SUPPLY DITCH   | CACHE LA POUFRE RIVER | 1,467       | 39   | 1,880        | 37   | 48     | 4604 | SAND & DEADMAN CR. |
| 3         | 4608 | DEADMAN DITCH         | CACHE LA POUFRE RIVER | 411         | 24   | 0            | 0    | 48     | 4608 | DEADMAN CREEK      |
| 3         | 4606 | BOB CREEK DITCH       | CACHE LA POUFRE RIVER | 0           | 0    | 0            | 0    | 48     | 4606 | NUNN CREEK         |
| 3         | 4607 | COLUMBINE DITCH       | CACHE LA POUFRE RIVER | 0           | 0    | 0            | 0    | 48     | 4607 | DEADMAN CREEK      |
| 3         | 4600 | LARAMIE-POUDRE TUNNEL | CACHE LA POUFRE RIVER | 17,648      | 103  | 12,480       | 100  | 48     | 4600 | LARAMIE RIVER      |
| 3         | 4605 | SKYLINE DITCH         | CACHE LA POUFRE RIVER | 205         | 3    | 0            | 0    | 48     | 4605 | LARAMIE RIVER      |
| 3         | 4602 | CAMERON PASS DITCH    | CACHE LA POUFRE RIVER | 65          | 16   | 0            | 0    | 47     | 4602 | MICHIGAN RIVER     |
| 3         | 4603 | MICHIGAN DITCH        | CACHE LA POUFRE RIVER | 3,779       | 257  | 3,580        | 338  | 47     | 4603 | MICHIGAN RIVER     |
| 3         | 4601 | GRAND RIVER DITCH     | CACHE LA POUFRE RIVER | 20,293      | 131  | 23,260       | 132  | 51     | 4601 | COLORADO RIVER     |
| 4         | 911  | EUREKA DITCH          | BIG THOMPSON RIVER    | 40          | 30   | 0            | 0    | 51     | 4602 | COLORADO RIVER     |
| 4         | 4634 | ADAMS TUNNEL          | BIG THOMPSON RIVER    | 240,040     | 360  | 203,470      | 366  | 51     | 4634 | COLORADO RIVER     |
| 6         | 4655 | MOFFAT TUNNEL         | SOUTH PLATTE RIVER    | 55,296      | 341  | 51,970       | 366  | 51     | 4655 | FRASER RIVER       |
| 7         | 4625 | BERTHOUD PASS DITCH   | CLEAR CREEK           | 794         | 97   | 1,530        | 92   | 51     | 4625 | FRASER RIVER       |
| 7         | 4626 | VIDLER TUNNEL         | CLEAR CREEK           | 763         | 95   | 268          | 43   | 36     | 4626 | MONTEZUMA CREEK    |
| 8         | 653  | ROBERTS TUNNEL        | SOUTH PLATTE RIVER    | 60,505      | 207  | 44,960       | 275  | 36     | 4684 | BLUE RIVER         |
| 23        | 4611 | BOREAS PASS DITCH     | SOUTH PLATTE RIVER    | 69          | 30   | 209          | 61   | 36     | 4685 | INDIANA CREEK      |
| 23        | 4612 | HOOSIER PASS DITCH    | ARKANSAS RIVER        | 10,425      | 149  | 11,830       | 167  | 36     | 4683 | BLUE RIVER         |
| 23        | 4490 | AURORA HOMESTAKE      | SOUTH PLATTE RIVER    | 14487       | 149  | 20847        | 169  | 37     | 4644 | HOMESTAKE CREEK    |



## RESERVOIR STORAGE SUMMARIES BY DISTRICT

### WATER DISTRICT 1

| WD | ID   | RESERVOIR NAME | SOURCE STREAM  | AMOUNT IN STORAGE (AF) |          |         |         |             |
|----|------|----------------|----------------|------------------------|----------|---------|---------|-------------|
|    |      |                |                | MINIMUM                |          | MAXIMUM |         | END OF YEAR |
|    |      |                |                | AF                     | DATE     | AF      | DATE    |             |
| 1  | 3570 | BIJOU #2       | SOUTH PLATTE   | 200                    | 3/31/96  | 4,300   | 9/30/96 | 1,440       |
| 1  | 3816 | EMPIRE         | SOUTH PLATTE   | 10,710                 | 9/30/96  | 34,126  | 3/31/96 | 22,207      |
| 1  | 3817 | JACKSON        | SOUTH PLATTE   | 3,460                  | 9/30/96  | 26,418  | 4/30/96 | 4,040       |
| 1  | 3651 | RIVERSIDE      | SOUTH PLATTE   | 17,204                 | 9/30/96  | 63,113  | 3/31/96 | 23,558      |
| 1  | 3400 | VANCIL         | SOUTH PLATTE   | 1,786                  | 8/31/96  | 4,649   | 6/30/96 | 3,928       |
| 1  | 3592 | HORSE CREEK    | HORSE CREEK    | 5,483                  | 9/30/96  | 14,953  | 4/30/96 | 13,857      |
| 1  | 3609 | PROSPECT       | PROSPECT CREEK | 1,129                  | 11/30/95 | 5,083   | 3/31/96 | 2,139       |
| 1  |      | OTHERS         |                | 93                     |          | 2,038   |         | 762         |
| 1  |      | TOTALS         |                | 40,065                 |          | 154,680 |         | 71,931      |



## RESERVOIR STORAGE SUMMARIES BY DISTRICT

### WATER DISTRICT 2

| WD | ID   | RESERVOIR NAME             | SOURCE STREAM    | AMOUNT IN STORAGE (AF) |          |         |          |             |
|----|------|----------------------------|------------------|------------------------|----------|---------|----------|-------------|
|    |      |                            |                  | MINIMUM                |          | MAXIMUM |          | END OF YEAR |
|    |      |                            |                  | AF                     | DATE     | AF      | DATE     |             |
| 2  | 3837 | OASIS RES/BARR             | SOUTH PLATTE     | 10,300                 | 8/31/96  | 28,900  | 3/31/96  | 12,276      |
| 2  | 3351 | BULL CANAL #8              | CLEAR CREEK      | 810                    | 8/31/96  | 3,658   | 6/30/96  | 1,111       |
| 2  | 3890 | COAL RIDGE                 | LITTLE DRY CREEK | 617                    | 10/31/96 | 813     | 9/30/96  | 617         |
| 2  | 3861 | GREAT WESTERN              | WALNUT CREEK     | 1,919                  | 5/31/96  | 3,217   | 7/31/96  | 2,338       |
| 2  | 3592 | HORSE CREEK                | SOUTH PLATTE     | 5,483                  | 9/30/96  | 14,953  | 4/30/96  | 13,857      |
| 2  | 3902 | LORD                       | SOUTH PLATTE     | 0                      | 11/30/95 | 405     | 6/30/96  | 0           |
| 2  | 3858 | LOWER LATHAM               | SOUTH PLATTE     | 5,740                  | 8/31/96  | 6,023   | 6/30/96  | 6,023       |
| 2  | 3876 | MILTON                     | SOUTH PLATTE     | 0                      | 9/30/96  | 17,840  | 4/30/96  | 0           |
| 2  | 3609 | PROSPECT                   | SOUTH PLATTE     | 1,129                  | 11/30/95 | 5,224   | 4/30/96  | 2,139       |
| 2  | 3375 | QUINCY                     | SOUTH PLATTE     | 2,074                  | 4/30/96  | 2,723   | 3/31/96  | 2,652       |
| 2  | 3903 | STANDLEY                   | WOMAN CREEK      | 36,116                 | 9/30/96  | 42,502  | 6/30/96  | 36,455      |
| 2  | 3700 | TANI LAKES COMBINED        | SOUTH PLATTE     | 983                    | 4/30/96  | 2,607   | 5/31/96  | 2,427       |
| 2  | 3699 | WEST GRAVEL LAKES COMBINED | SOUTH PLATTE     | 1,731                  | 4/30/96  | 2,850   | 11/30/95 | 2,114       |
| 2  |      | OTHERS                     |                  | 673                    |          | 2,182   |          | 1,014       |
| 2  |      | TOTALS                     |                  | 67,575                 |          | 133,897 |          | 83,023      |



## RESERVOIR STORAGE SUMMARIES BY DISTRICT

### WATER DISTRICT 3

| WD | ID   | RESERVOIR NAME              | SOURCE STREAM         | AMOUNT IN STORAGE (AF) |          |         |          |             |
|----|------|-----------------------------|-----------------------|------------------------|----------|---------|----------|-------------|
|    |      |                             |                       | MINIMUM                |          | MAXIMUM |          | END OF YEAR |
|    |      |                             |                       | AF                     | DATE     | AF      | DATE     |             |
| 3  | 3774 | FOSSIL CREEK                | FOSSIL CREEK          | 3,875                  | 9/30/96  | 10,817  | 6/30/96  | 6,854       |
| 3  | 3712 | HALLAGAN                    | N FK POUFRE RIVER     | 334                    | 9/30/96  | 6,428   | 1/31/96  | 2,072       |
| 3  | 3707 | INDIAN CREEK/MTN SUPPLY     | INDIAN CREEK          | 1,253                  | 8/31/96  | 1,906   | 5/31/96  | 1,309       |
| 3  | 3697 | NORTH POUFRE #2/DEMME LAKE  | N FK POUFRE RIVER     | 2,493                  | 8/31/96  | 3,497   | 3/31/96  | 2,951       |
| 3  | 3702 | NORTH POUFRE #3/HACKEL LAKE | N FK POUFRE RIVER     | 1,442                  | 9/30/96  | 2,553   | 3/31/96  | 1,512       |
| 3  | 3704 | NORTH POUFRE #4             | N FK POUFRE RIVER     | 540                    | 11/30/96 | 955     | 6/30/96  | 737         |
| 3  | 3698 | NORTH POUFRE #5/BEE LAKE    | N FK POUFRE RIVER     | 5,103                  | 10/31/96 | 5,972   | 5/31/96  | 5,103       |
| 3  | 3716 | NORTH POUFRE #15            | N FK POUFRE RIVER     | 2,236                  | 9/30/96  | 5,431   | 5/31/96  | 2,373       |
| 3  | 3715 | PARK CREEK                  | PARK CREEK            | 2,591                  | 10/31/96 | 7,064   | 5/31/96  | 2,591       |
| 3  | 3730 | COBB LAKE                   | CACHE LA POUFRE RIVER | 13,980                 | 5/31/96  | 22,140  | 6/30/96  | 16,260      |
| 3  | 3713 | SEAMAN/MILTON SEAMAN        | N FK POUFRE RIVER     | 353                    | 4/30/96  | 4,519   | 5/31/96  | 3,311       |
| 3  | 3780 | CLAYMORE                    | CACHE LA POUFRE RIVER | 59                     | 9/30/96  | 874     | 5/31/96  | 142         |
| 3  | 3772 | SEELEY                      | CACHE LA POUFRE RIVER | 1,028                  | 6/30/96  | 1,101   | 11/30/95 | 1,038       |
| 3  | 3804 | WARREN                      | CACHE LA POUFRE RIVER | 299                    | 12/31/95 | 2,228   | 6/30/96  | 1,697       |
| 3  | 3786 | WOOD                        | ROLLARD DRAW          | 1,963                  | 8/31/96  | 2,447   | 10/31/96 | 2,447       |
| 3  | 3678 | JOE WRIGHT/CAMERON          | CACHE LA POUFRE RIVER | 2,337                  | 8/31/96  | 7,116   | 6/30/96  | 2,887       |
| 3  | 3952 | RAWHIDE                     | CACHE LA POUFRE RIVER | 12,385                 | 11/30/95 | 14,259  | 7/31/96  | 13,435      |
| 3  | 3732 | HORSETOOTH                  | DIXON CANYON CREEK    | 117,854                | 11/30/95 | 153,834 | 6/30/96  | 121,160     |
| 3  | 3725 | DOUGLASS                    | CACHE LA POUFRE RIVER | 5,337                  | 11/30/95 | 8,678   | 6/30/96  | 6,408       |
| 3  | 3727 | WINDSOR RESERVOIR #8        | CACHE LA POUFRE RIVER | 3,581                  | 8/31/96  | 9,844   | 6/30/96  | 4,518       |
| 3  | 3728 | NO. 8 ANNEX                 | CACHE LA POUFRE RIVER | 1,078                  | 12/31/95 | 3,640   | 6/30/96  | 2,078       |
| 3  | 3738 | WINDSOR RESERVOIR           | CACHE LA POUFRE RIVER | 9,396                  | 8/31/96  | 17,508  | 6/30/96  | 10,009      |
| 3  | 3679 | CHAMBERS                    | JOE WRIGHT CREEK      | 1,602                  | 9/30/96  | 8,433   | 6/30/96  | 2,479       |
| 3  | 3676 | LONG DRAW/GRAND RIVER       | LONG DRAW CREEK       | 2,024                  | 9/30/96  | 10,519  | 6/30/96  | 2,268       |
| 3  |      | SUBTOTALS                   |                       | 193,143                |          | 311,763 |          | 215,639     |



## RESERVOIR STORAGE SUMMARIES BY DISTRICT

### WATER DISTRICT 3 (CONTINUED)

| WD | ID   | RESERVOIR NAME                | SOURCE STREAM         | AMOUNT IN STORAGE (AF) |          |         |         |             |
|----|------|-------------------------------|-----------------------|------------------------|----------|---------|---------|-------------|
|    |      |                               |                       | MINIMUM                |          | MAXIMUM |         | END OF YEAR |
|    |      |                               |                       | AF                     | DATE     | AF      | DATE    |             |
|    |      | BALANCE FROM PREVIOUS PAGE    |                       | 193,143                |          | 311,763 |         | 215,639     |
| 3  | 3744 | BLACK HOLLOW                  | CACHE LA POUFRE RIVER | 3,445                  | 4/30/96  | 5,397   | 5/31/96 | 4,294       |
| 3  | 3735 | CURTIS                        | CACHE LA POUFRE RIVER | 494                    | 4/30/96  | 651     | 8/31/96 | 629         |
| 3  | 3740 | KLUVER                        | CACHE LA POUFRE RIVER | 594                    | 3/31/96  | 802     | 5/31/96 | 640         |
| 3  | 3742 | LONG POND/WATER SUPPLY #5,6,7 | CACHE LA POUFRE RIVER | 2,012                  | 8/31/96  | 3,129   | 6/30/96 | 2,362       |
| 3  | 3736 | ROCKY RIDGE/WATER SUPPLY #1   | CACHE LA POUFRE RIVER | 3,030                  | 3/31/96  | 3,648   | 6/30/96 | 3,183       |
| 3  | 3737 | WATER SUPPLY #3               | LONG POND RESERVOIR   | 2,999                  | 2/28/96  | 4,510   | 5/31/96 | 3,514       |
| 3  | 3739 | WATER SUPPLY #4               | LONG POND RESERVOIR   | 370                    | 11/30/95 | 603     | 6/30/96 | 509         |
| 3  | 3805 | TERRY/LARIMER WELD            | CACHE LA POUFRE RIVER | 2,803                  | 9/30/96  | 8,028   | 6/30/96 | 4,805       |
| 3  | 3726 | WORSTER                       | SHEEP CREEK           | 0                      | 11/30/95 | 3,750   | 5/31/96 | 109         |
| 3  | 3775 | TIMNATH                       | DUCK SLOUGH           | 3,990                  | 11/30/95 | 11,025  | 6/30/96 | 6,364       |
| 3  | 3770 | WINDSOR LAKE                  | CACHE LA POUFRE RIVER | 620                    | 3/31/96  | 1,194   | 7/31/96 | 748         |
| 3  | 3683 | BARNES                        | BARNES MEADOWS CREEK  | 1,110                  | 3/31/96  | 2,349   | 6/30/96 | 2,285       |
| 3  | 3699 | NORTH POUFRE RESERVOIR #6     | N FK POUFRE RIVER     | 6,525                  | 11/30/95 | 8,473   | 6/30/96 | 7,656       |
| 3  | 3708 | MOUNTAIN SUPPLY RESERVOIR #18 | BOX ELDER CREEK       | 393                    | 8/31/96  | 765     | 5/31/96 | 624         |
| 3  | 3745 | DOWDY LAKE RESERVOIR          | SOUTH PINE CREEK      | 801                    | 2/28/96  | 961     | 5/31/96 | 840         |
| 3  | 3751 | SOUTH GRAY RESERVOIR          | BOX ELDER CREEK       | 0                      | 8/31/96  | 734     | 6/30/96 | 314         |
| 3  | 3686 | COMANCHE RESERVOIR            | BIG BEAVER CREEK      | 0                      | 11/30/95 | 2,629   | 6/30/96 | 0           |
| 3  |      | OTHERS                        |                       | 4,877                  |          | 7,264   |         | 5,792       |
| 3  |      | TOTALS                        |                       | 227,206                |          | 377,675 |         | 260,307     |



## RESERVOIR STORAGE SUMMARIES BY DISTRICT

### WATER DISTRICT 4

| WD | ID   | RESERVOIR NAME        | SOURCE STREAM    | AMOUNT IN STORAGE (AF) |          |         |          |             |
|----|------|-----------------------|------------------|------------------------|----------|---------|----------|-------------|
|    |      |                       |                  | MINIMUM                |          | MAXIMUM |          | END OF YEAR |
|    |      |                       |                  | AF                     | DATE     | AF      | DATE     |             |
| 4  | 4156 | BOULDER & LARIMER/ISH | LITTLE THOMPSON  | 1,755                  | 11/30/95 | 7,061   | 6/30/96  | 2,246       |
| 4  | 4110 | BOYD LAKE             | BIG THOMPSON     | 27,162                 | 11/30/95 | 49,048  | 6/30/96  | 35,049      |
| 4  | 4513 | CARTER                | BIG THOMPSON     | 45,706                 | 10/31/96 | 84,039  | 12/31/95 | 45,706      |
| 4  | 4116 | DONATH                | BIG THOMPSON     | 330                    | 1/31/96  | 1,153   | 7/31/96  | 467         |
| 4  | 4166 | HERTHA RESERVOIR      | DRY CREEK HERTHA | 556                    | 11/30/95 | 1,223   | 4/30/96  | 1,015       |
| 4  | 4123 | HORSETOOTH RESERVOIR  | BIG THOMPSON     | 3,333                  | 9/30/96  | 7,668   | 7/31/96  | 3,497       |
| 4  | 4487 | LAKE LOVELAND         | BIG THOMPSON     | 9,224                  | 9/30/96  | 12,639  | 6/30/96  | 9,307       |
| 4  | 4136 | LON HAGLER            | BIG THOMPSON     | 1,901                  | 8/31/96  | 5,128   | 6/30/96  | 2,025       |
| 4  | 4137 | LONE TREE             | BIG THOMPSON     | 1,686                  | 3/31/96  | 8,819   | 5/31/96  | 2,002       |
| 4  | 4133 | LOVELAND LAKE         | BIG THOMPSON     | 1,336                  | 8/31/96  | 1,825   | 3/31/96  | 1,336       |
| 4  | 4134 | BOEDECKER LAKE/MARINO | BIG THOMPSON     | 1,357                  | 9/30/96  | 5,651   | 5/31/96  | 5,260       |
| 4  | 4146 | WELCH LAKE            | BIG THOMPSON     | 3,417                  | 8/31/96  | 6,747   | 6/30/96  | 3,823       |
| 4  |      | OTHERS                |                  | 1,549                  |          | 2,447   |          | 1,772       |
| 4  |      | TOTALS                |                  | 99,312                 |          | 193,448 |          | 113,505     |



## RESERVOIR STORAGE SUMMARIES BY DISTRICT

### WATER DISTRICT 5

| WD | ID   | RESERVOIR NAME         | SOURCE STREAM   | AMOUNT IN STORAGE (AF) |          |         |          |             |
|----|------|------------------------|-----------------|------------------------|----------|---------|----------|-------------|
|    |      |                        |                 | MINIMUM                |          | MAXIMUM |          | END OF YEAR |
|    |      |                        |                 | AF                     | DATE     | AF      | DATE     |             |
| 5  | 4020 | BEAVER POND            | BEAVER CREEK    | 535                    | 11/30/95 | 2,162   | 6/30/96  | 599         |
| 5  | 4071 | FOOTHILLS              | ST. VRAIN       | 977                    | 11/30/95 | 3,702   | 6/30/96  | 1,295       |
| 5  | 4037 | HIGHLAND #1            | ST. VRAIN       | 572                    | 9/30/96  | 968     | 6/30/96  | 873         |
| 5  | 4032 | HIGHLAND #2            | ST. VRAIN       | 1,730                  | 8/31/96  | 3,678   | 6/30/96  | 2,810       |
| 5  | 4038 | HIGHLAND #3            | ST. VRAIN       | 492                    | 8/31/96  | 1,669   | 6/30/96  | 1,408       |
| 5  | 4073 | MCINTOSH               | ST. VRAIN       | 901                    | 11/30/95 | 2,331   | 3/31/96  | 1,281       |
| 5  | 4063 | PLEASANT VALLEY        | ST. VRAIN       | 1,874                  | 8/31/96  | 3,076   | 5/31/96  | 2,586       |
| 5  | 4067 | OLIGARCHY RESERVOIR #1 | ST. VRAIN       | 1,452                  | 8/31/96  | 1,737   | 5/31/96  | 1,471       |
| 5  | 3905 | UNION                  | ST. VRAIN       | 6,906                  | 8/31/96  | 12,768  | 5/31/96  | 9,317       |
| 5  | 4076 | LEFT HAND PARK         | LEFT HAND CREEK | 0                      | 9/30/96  | 1,549   | 2/19/96  | 0           |
| 5  | 4488 | LEFT HAND VALLEY       | LEFT HAND CREEK | 608                    | 2/29/96  | 1,626   | 1/31/96  | 1,463       |
| 5  | 4010 | BUTTON ROCK            | ST. VRAIN       | 12,705                 | 3/31/96  | 16,197  | 5/31/96  | 16,153      |
| 5  | 4379 | NEW THOMAS             | ST. VRAIN       | 183                    | 4/30/96  | 2,029   | 10/31/96 | 2,029       |
| 5  | 4081 | LAGERMANN              | LEFT HAND CREEK | 886                    | 4/30/96  | 978     | 7/31/96  | 949         |
| 5  | 4065 | MCCALL RESERVOIR       | ST. VRAIN       | 348                    | 9/30/96  | 494     | 6/30/96  | 348         |
| 5  |      | TOTALS                 |                 | 30,169                 |          | 54,964  |          | 42,582      |



## RESERVOIR STORAGE SUMMARIES BY DISTRICT

### WATER DISTRICT 6

| WD | ID   | RESERVOIR NAME | SOURCE STREAM       | AMOUNT IN STORAGE (AF) |          |         |          |             |
|----|------|----------------|---------------------|------------------------|----------|---------|----------|-------------|
|    |      |                |                     | MINIMUM                |          | MAXIMUM |          | END OF YEAR |
|    |      |                |                     | AF                     | DATE     | AF      | DATE     |             |
| 6  | 4269 | ALBION         | ALBION CREEK        | 1,111                  | 11/30/95 | 1,111   | 11/30/95 | 1,111       |
| 6  | 4172 | BARKER         | BOULDER CREEK       | 29                     | 4/30/96  | 11,164  | 7/31/96  | 7,578       |
| 6  | 4173 | BASELINE       | BOULDER CREEK       | 2,953                  | 9/30/96  | 5,326   | 6/30/96  | 3,404       |
| 6  | 4515 | BOULDER        | BOULDER CREEK       | 5,076                  | 4/30/96  | 12,089  | 6/30/96  | 6,657       |
| 6  | 4489 | GOOSE          | NORTH BOULDER CREEK | 300                    | 5/31/96  | 1,036   | 7/31/96  | 900         |
| 6  | 4199 | GROSS          | SOUTH BOULDER CREEK | 22,123                 | 3/31/96  | 41,255  | 6/30/95  | 27,790      |
| 6  | 4178 | HILLCREST      | BOULDER CREEK       | 1,759                  | 10/31/96 | 1,922   | 7/31/96  | 1,759       |
| 6  | 4180 | LEGGETT        | BOULDER CREEK       | 1,272                  | 10/31/96 | 1,390   | 7/31/96  | 1,272       |
| 6  | 4212 | MARSHALL       | SOUTH BOULDER CREEK | 4,332                  | 11/30/95 | 9,750   | 6/30/96  | 5,884       |
| 6  | 4185 | PANAMA         | BOULDER CREEK       | 2,700                  | 11/30/95 | 4,000   | 5/31/96  | 3,400       |
| 6  | 4238 | SILVER         | NORTH BOULDER CREEK | 2,276                  | 5/31/96  | 3,996   | 8/31/96  | 3,996       |
| 6  | 4187 | SIX MILE       | BOULDER CREEK       | 600                    | 10/31/96 | 1,300   | 4/30/96  | 600         |
| 6  | 4230 | VALMONT        | SOUTH BOULDER CREEK | 6,553                  | 9/30/96  | 7,336   | 7/31/96  | 6,802       |
| 6  |      | TOTALS         |                     | 51,084                 |          | 101,675 |          | 71,153      |



## RESERVOIR STORAGE SUMMARIES BY DISTRICT

### WATER DISTRICT 7

| WD | ID   | RESERVOIR NAME | SOURCE STREAM     | AMOUNT IN STORAGE (AF) |          |         |          |             |
|----|------|----------------|-------------------|------------------------|----------|---------|----------|-------------|
|    |      |                |                   | MINIMUM                |          | MAXIMUM |          | END OF YEAR |
|    |      |                |                   | AF                     | DATE     | AF      | DATE     |             |
| 7  | 3324 | RALSTON        | RALSTON CREEK     | 4,442                  | 10/31/96 | 10,267  | 8/31/96  | 4,442       |
| 7  | 4459 | TUCKER         | RALSTON CREEK     | 80                     | 10/31/96 | 500     | 5/31/96  | 80          |
| 7  | 3406 | COORS B #3     | CLEAR CREEK       | 2,093                  | 4/30/96  | 2,500   | 11/30/95 | 2,500       |
| 7  | 3407 | COORS B #4     | CLEAR CREEK       | 3,900                  | 4/30/96  | 4,000   | 11/30/95 | 3,900       |
| 7  | 3308 | BLUNN          | CLEAR CREEK       | 2,800                  | 11/30/95 | 5,400   | 8/31/96  | 4,500       |
| 7  | 3702 | FAIRMOUNT      | CLEAR CREEK       | 711                    | 4/30/96  | 978     | 11/30/95 | 838         |
| 7  | 4411 | MAPLE GROVE    | SOUTH CLEAR CREEK | 113                    | 7/31/96  | 1,128   | 9/30/96  | 115         |
| 7  |      | OTHERS         |                   | 1,149                  |          | 2,761   |          | 2,070       |
| 7  |      | TOTALS         |                   | 15,288                 |          | 27,534  |          | 18,445      |



## RESERVOIR STORAGE SUMMARIES BY DISTRICT

### WATER DISTRICT 8

| WD | ID   | RESERVOIR NAME           | SOURCE STREAM   | AMOUNT IN STORAGE (AF) |          |         |        |             |
|----|------|--------------------------|-----------------|------------------------|----------|---------|--------|-------------|
|    |      |                          |                 | MINIMUM                |          | MAXIMUM |        | END OF YEAR |
|    |      |                          |                 | AF                     | DATE     | AF      | DATE   |             |
| 8  | 3514 | CHATFIELD                | SOUTH PLATTE    | 17,891                 | 1/1/96   | 26,192  | 7/1/96 | 22,399      |
| 8  | 3532 | CHERRY CREEK             | CHERRY CREEK    | 12,382                 | 10/31/96 | 13,594  | 6/1/96 | 12,382      |
| 8  | 3832 | MCLELLAN                 | DAD CLARK DITCH | 4,715                  | 9/1/96   | 5,792   | 3/1/96 | 4,881       |
| 8  | 3983 | STRONTIA SPRINGS DVR DAM | SOUTH PLATTE    | 6,243                  | 4/1/96   | 7,350   | 1/1/96 | 7,186       |
| 8  |      | TOTALS                   |                 | 41,231                 |          | 52,928  |        | 46,848      |



## RESERVOIR STORAGE SUMMARIES BY DISTRICT

### WATER DISTRICT 9

| WD | ID   | RESERVOIR NAME       | SOURCE STREAM | AMOUNT IN STORAGE (AF) |          |         |         |             |
|----|------|----------------------|---------------|------------------------|----------|---------|---------|-------------|
|    |      |                      |               | MINIMUM                |          | MAXIMUM |         | END OF YEAR |
|    |      |                      |               | AF                     | DATE     | AF      | DATE    |             |
| 9  | 3815 | SODA #1, #2          | BEAR CREEK    | 1,261                  | 10/31/96 | 1,474   | 6/30/96 | 1,261       |
| 9  | 4281 | BOWLES               | BEAR CREEK    | 1,348                  | 10/31/96 | 2,096   | 7/31/96 | 1,348       |
| 9  | 4314 | PATRICK              | BEAR CREEK    | 1,078                  | 2/29/96  | 1,161   | 4/30/96 | 1,161       |
| 9  | 3999 | BEAR CREEK RESERVOIR | BEAR CREEK    | 1,984                  | 9/23/96  | 2,124   | 5/31/96 | 2,023       |
| 9  | 3501 | MARSTON              | SOUTH PLATTE  | 9,788                  | 10/31/96 | 19,278  | 6/30/96 | 9,788       |
| 9  |      | OTHERS               |               | 2,058                  |          | 3,252   |         | 2,395       |
| 9  |      | TOTALS               |               | 17,517                 |          | 29,385  |         | 17,976      |



## RESERVOIR STORAGE SUMMARIES BY DISTRICT

### WATER DISTRICT 23

| WD | ID   | RESERVOIR NAME   | SOURCE STREAM       | AMOUNT IN STORAGE (AF) |          |         |          |             |
|----|------|------------------|---------------------|------------------------|----------|---------|----------|-------------|
|    |      |                  |                     | MINIMUM                |          | MAXIMUM |          | END OF YEAR |
|    |      |                  |                     | AF                     | DATE     | AF      | DATE     |             |
| 23 | 3904 | ANTERO           | S FK SOUTH PLATTE   | 4899                   | 10/31/96 | 20,015  | 11/30/96 | 4899        |
| 23 | 3962 | MONTGOMERY       | MID FK SOUTH PLATTE | 538                    | 5/31/96  | 4993    | 9/30/96  | 4898        |
| 23 | 3965 | ELEVEN MILE      | MID FK SOUTH PLATTE | 100,071                | 10/31/96 | 99,968  | 12/31/95 | 100,071     |
| 23 | 4013 | SPINNEY MOUNTAIN | MID FK SOUTH PLATTE | 31,768                 | 5/31/96  | 52,174  | 7/31/96  | 45,431      |
| 23 |      | TOTALS           |                     | 137,276                |          | 177,150 |          | 155,299     |



## RESERVOIR STORAGE SUMMARIES BY DISTRICT

### WATER DISTRICT 64

| WD | ID   | RESERVOIR NAME | SOURCE STREAM | AMOUNT IN STORAGE (AF) |          |         |         |             |
|----|------|----------------|---------------|------------------------|----------|---------|---------|-------------|
|    |      |                |               | MINIMUM                |          | MAXIMUM |         | END OF YEAR |
|    |      |                |               | AF                     | DATE     | AF      | DATE    |             |
| 64 | 3552 | PREWITT        | SOUTH PLATTE  | 15716                  | 12/31/95 | 28600   | 5/31/96 | 15891       |
| 64 | 3551 | NORTH STERLING | SOUTH PLATTE  | 22920                  | 8/31/96  | 74010   | 6/30/96 | 27720       |
| 64 | 3906 | JULESBURG      | SOUTH PLATTE  | 6077                   | 9/30/96  | 21214   | 3/31/96 | 13733       |
| 64 |      | TOTALS         |               | 44713                  |          | 123824  |         | 57344       |



## RESERVOIR STORAGE SUMMARIES BY DISTRICT

### WATER DISTRICT 80

| WD | ID   | RESERVOIR NAME   | SOURCE STREAM     | AMOUNT IN STORAGE (AF) |         |         |         |             |
|----|------|------------------|-------------------|------------------------|---------|---------|---------|-------------|
|    |      |                  |                   | MINIMUM                |         | MAXIMUM |         | END OF YEAR |
|    |      |                  |                   | AF                     | DATE    | AF      | DATE    |             |
| 80 | 3550 | CHEESMAN         | S FK SOUTH PLATTE | 61,281                 | 9/30/96 | 78,602  | 6/30/96 | 62,025      |
| 80 | 3829 | WELLINGTON       | N FK SOUTH PLATTE | 3,235                  | 8/29/96 | 4,442   | 6/17/96 | 3,235       |
| 80 | 3828 | ALTURA RESERVOIR | GENEVA CREEK      | 0                      | 8/6/96  | 610     | 6/30/96 | 0           |
| 80 |      | TOTAL            |                   | 64,516                 |         | 83,654  |         | 65,260      |

## WATER DIVERSION SUMMARIES

| WD  | DITCHES REPORTING     |                           |                          | OTHERS                   |               | ESTIMATED<br>NUMBER OF<br>STRUCTURE<br>VISITS | TOTAL<br>DIVERSIONS<br>(AF) | TOTAL<br>DIVERSIONS<br>TO<br>STORAGE | TO IRRIGATION               |                              |                       |
|-----|-----------------------|---------------------------|--------------------------|--------------------------|---------------|---|-----------------------------|--------------------------------------|-----------------------------|------------------------------|-----------------------|
|     | WITH<br>RECORD<br>(1) | NO WATER<br>AVAIL.<br>(2) | NO WATER<br>TAKEN<br>(3) | NO INFO<br>AVAIL.<br>(4) | NO<br>RECORDS |   |                             |                                      | TOTAL<br>DIVERSIONS<br>(AF) | NO. OF<br>ACRES<br>IRRIGATED | AVG<br>AF PER<br>ACRE |
| 1   | 361                   | 25                        | 45                       | 135                      | 4783          | 3237  | 734469                      | 326893                               | 331105                      | 198225                       | 1.68                  |
| 2   | 256                   | 5                         | 125                      | 17                       | 4216          | 2861  | 607735                      | 123691                               | 493497                      | 102608                       | 4.81                  |
| 3   | 190                   | 0                         | 50                       | 18                       | 2693          | 2451  | 630797                      | 259776                               | 488386                      | 310654                       | 1.58                  |
| 4   | 98                    | 0                         | 48                       | 7                        | 1184          | 1744  | 244178                      | 266578                               | 156539                      | 83154                        | 1.89                  |
| 5   | 144                   | 0                         | 22                       | 12                       | 1179          | 3330  | 154492                      | 21387                                | 111950                      | 49830                        | 2.25                  |
| 6   | 167                   | 0                         | 65                       | 44                       | 1644          | 3731  | 308791                      | 100634                               | 104953                      | 100331                       | 1.05                  |
| 7   | 100                   | 0                         | 115                      | 9                        | 1423          | 1504  | 195220                      | 9564                                 | 43497                       | 51250                        | .85                   |
| 8   | 502                   | 50                        | 148                      | 46                       | 5144          | 3062  | 457514                      | 154318                               | 51749                       | 5948                         | 8.71                  |
| 9   | 115                   | 0                         | 11                       | 14                       | 1451          | 603   | 11685                       | 1742                                 | 7241                        | 1474                         | 4.92                  |
| 23  | 233                   | 5                         | 119                      | 18                       | 1193          | 961   | 139547                      | 98980                                | 22600                       | 9098                         | 2.49                  |
| 48  | 53                    | 0                         | 27                       | 0                        | 70            | 1613  | 17492                       | 0                                    | 17492                       | 4351                         | 4.03                  |
| 49  | 7                     | 0                         | 17                       | 0                        | 36            | 2336  | 4520                        | 0                                    | 4520                        | 1555                         | 2.91                  |
| 64  | 151                   | 1                         | 30                       | 7                        | 1710          | 3345  | 279691                      | 15711                                | 268436                      | 136653                       | 1.97                  |
| 65  | 19                    | 0                         | 16                       | 0                        | 79            | 0   | 10720                       | 0                                    | 9129                        | 4720                         | 1.94                  |
| 76  | 1                     | 0                         | 1                        | 0                        | 9             | 0   | 221                         | 0                                    | 221                         | 350                          | .64                   |
| 80  | 172                   | 25                        | 37                       | 5                        | 844           | 0   | 65083                       | 57595                                | 6809                        | 1499                         | 4.55                  |
| TOT | 2569                  | 111                       | 876                      | 332                      | 27658         | 30778   | 3862155                     | 1436869                              | 2118124                     | 1061700                      | 46.27                 |

DISTRICT 9 DITCH VISITS COMBINED WITH DISTRICT 80

DISTRICT 48 DITCH VISITS COMBINED WITH DISTRICT 76

DISTRICT 49 DITCH VISITS COMBINED WITH DISTRICT 65

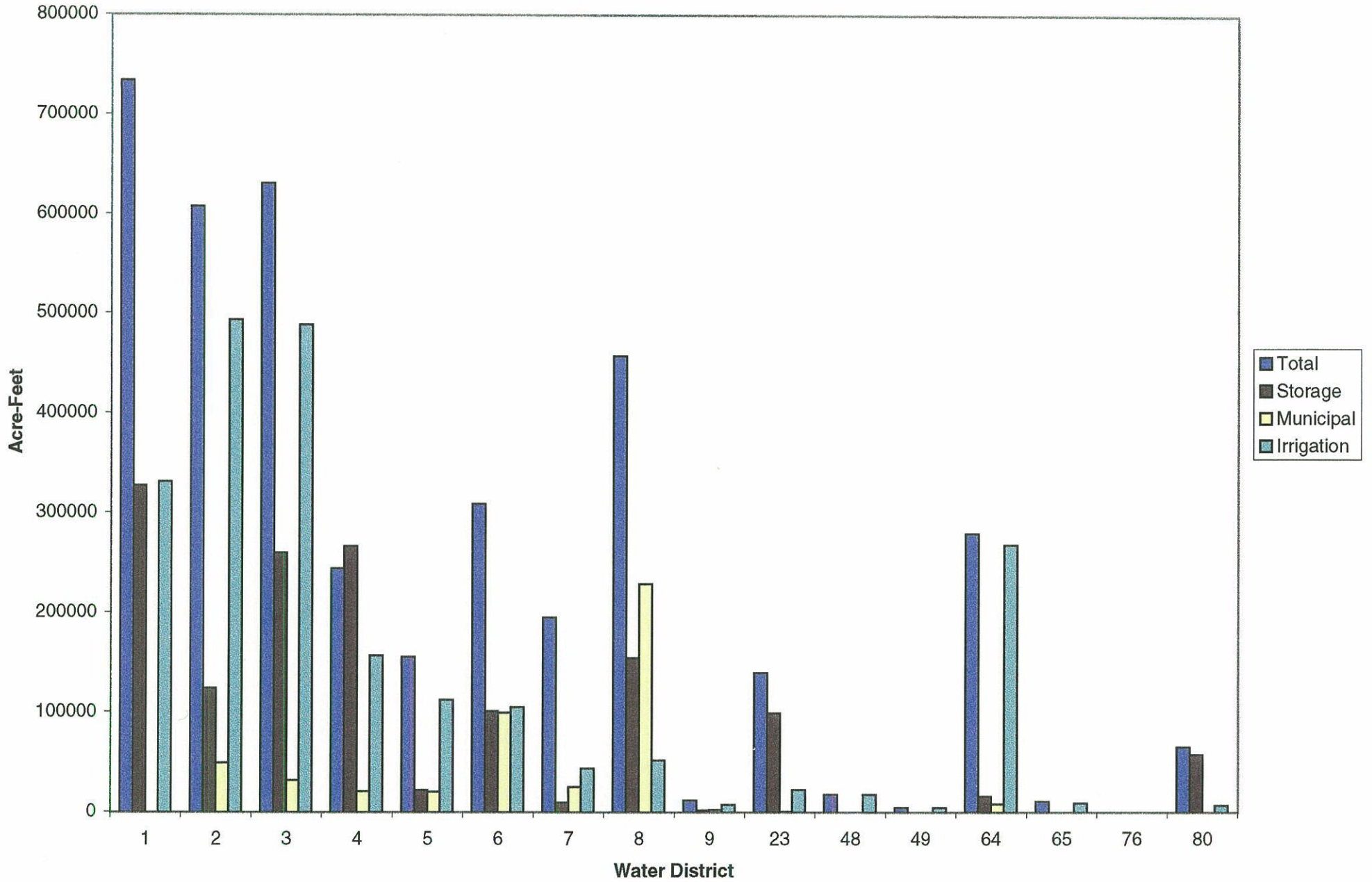


## WATER DIVERSION SUMMARIES TO VARIOUS USE

| WD | TRANS-MOUNTAIN<br>OUTFLOW | TRANS-BASIN<br>OUTFLOW | MUNICIPAL | COMMERCIAL | INDUSTRIAL | RECREATION | FISHERY | DOMESTIC &<br>HOUSEHOLD | STOCK |
|----|---------------------------|------------------------|-----------|------------|------------|------------|---------|-------------------------|-------|
| 1  | 0                         | 0                      | 0         | 0          | 7868       | 0          | 0       | 0                       | 91    |
| 2  | 0                         | 0                      | 49132     | 0          | 10799      | 0          | 0       | 0                       | 7     |
| 3  | 0                         | 0                      | 31981     | 0          | 3639       | 0          | 0       | 26                      | 0     |
| 4  | 0                         | 0                      | 20611     | 0          | 0          | 0          | 0       | 0                       | 0     |
| 5  | 0                         | 0                      | 20405     | 48         | 0          | 0          | 0       | 38                      | 0     |
| 6  | 0                         | 0                      | 99356     | 52         | 398        | 0          | 0       | 0                       | 0     |
| 7  | 0                         | 0                      | 25218     | 24         | 43663      | 0          | 00      | 0                       | 0     |
| 8  | 0                         | 0                      | 228852    | 747        | 3047       | 0          | 2656    | 14368                   | 233   |
| 9  | 0                         | 0                      | 2224      | 10         | 50         | 0          | 0       | 0                       | 0     |
| 23 | 0                         | 0                      | 478       | 0          | 1168       | 6631       | 54      | 0                       | 157   |
| 48 | 0                         | 0                      | 0         | 0          | 0          | 0          | 0       | 0                       | 0     |
| 49 | 0                         | 0                      | 0         | 0          | 0          | 0          | 0       | 0                       | 0     |
| 64 | 0                         | 0                      | 8163      | 1275       | 0          | 0          | 0       | 8                       | 34    |
| 65 | 0                         | 0                      | 0         | 0          | 0          | 0          | 1591    | 0                       | 0     |
| 76 | 0                         | 0                      | 0         | 0          | 0          | 0          | 0       | 0                       | 0     |
| 80 | 0                         | 0                      | 129       | 19         | 0          | 0          | 0       | 0                       | 0     |
| TO | 0                         | 0                      | 486549    | 2175       | 70632      | 6631       | 4301    | 14440                   | 522   |

| WD | AUGMENTATION | EVAPORATION | GEOTHERMAL | SNOWMAKING | MINIMUM<br>STREAMFLOW | POWER<br>GENERATION | WILDLIFE | RECHARGE | OTHER |
|----|--------------|-------------|------------|------------|-----------------------|---------------------|----------|----------|-------|
| 1  | 38998        | 0           | 0          | 0          | 0                     | 0                   | 0        | 81537    | 0     |
| 2  | 8486         | 0           | 0          | 0          | 0                     | 0                   | 0        | 5601     | 0     |
| 3  | 2274         | 201         | 0          | 0          | 0                     | 0                   | 0        | 0        | 0     |
| 4  | 3975         | 0           | 0          | 0          | 0                     | 142493              | 0        | 0        | 0     |
| 5  | 8258         | 0           | 0          | 0          | 589                   | 0                   | 0        | 0        | 0     |
| 6  | 1651         | 0           | 0          | 0          | 11971                 | 8269                | 0        | 0        | 0     |
| 7  | 26645        | 0           | 0          | 157        | 0                     | 0                   | 0        | 1457     | 0     |
| 8  | 3905         | 3538        | 0          | 0          | 0                     | 0                   | 0        | 0        | 0     |
| 9  | 79           | 0           | 0          | 0          | 0                     | 0                   | 0        | 0        | 0     |
| 23 | 3592         | 0           | 0          | 0          | 0                     | 0                   | 0        | 0        | 0     |
| 48 | 0            | 0           | 0          | 0          | 0                     | 0                   | 0        | 0        | 0     |
| 49 | 0            | 0           | 0          | 0          | 0                     | 0                   | 0        | 0        | 0     |
| 64 | 3962         | 0           | 0          | 0          | 0                     | 0                   | 0        | 10188    | 0     |
| 65 | 0            | 0           | 0          | 0          | 0                     | 0                   | 0        | 0        | 0     |
| 76 | 0            | 0           | 0          | 0          | 0                     | 0                   | 0        | 0        | 0     |
| 80 | 39           | 0           | 0          | 0          | 0                     | 0                   | 0        | 0        | 0     |
| TO | 101864       | 3739        | 0          | 157        | 12560                 | 150762              | 0        | 98783    | 0     |

**DIVISION 1  
1996 Diversions**





WATER COURT ACTIVITIES  
Calendar Year 1996

|   |      |
|---|------|
| Applications made to water court this year..... | 1174 |
| Consultations with Referee this year.....       | 1224 |
| Decrees Issued by Court this year.....          | 218  |
| Dismissals.....                                 | 10   |
| Complaints.....                                 | 1    |

TYPES OF RULINGS

| TYPE OF RULING                              | NUMBER OF CASES | NUMBER OF STRUCTURES |
|---|-----------------|----------------------|
| Findings of Diligence on Conditional Rights | 65              | 126                  |
| Cancellations of Conditional Rights         | 6               | 6                    |
| Conditional Rights Made Absolute            | 19              | 48                   |
| Surface Water Rights Adjudicated            | 22              | 83                   |
| Underground Water Rights Adjudicated        | 62              | 277                  |
| Water Storage Rights Adjudicated            | 73              | 23                   |
| Plans for Augmentation Adjudicated          | 30              | 239                  |
| Changes of Water Rights Adjudicated         | 20              | 64                   |
| Instream Flow Rights Adjudicated            | 10              | 10                   |

CALLING PRIORITY 1995-1996

| Date Call | Date Call |                               |               |                |          |               |               |
|-----------|-----------|-------------------------------|---------------|----------------|----------|---------------|---------------|
| Initiated | Released  | Structure Name                | Appropriation | Administration | District | Person        | Districts     |
| 1995-1996 | 1995-1996 |                               | Date          | Number         |          | Placing Call  | Affected      |
| 11/01/95  | 11/25/95  | Barr Lake                     | 11/20/1885    | 13108.00000    | 2        | Ken Timmerman | 8,9,23,80     |
| 11/25/95  | 12/06/95  | Barr Lake Refill              | 01/13/1909    | 21562.00000    | 2        | Ken Timmerman | 2,8,9,80,23   |
| 12/06/95  | 12/19/95  | Propspect Reservoir           | 11/21/1910    | 22239.00000    | 2        | Ken Timmerman | 2,8,9,80,23   |
| 12/19/95  | 01/03/96  | Horse Creek Reservoir         | 03/17/1911    | 22355.00000    | 2        | Ken Timmerman | 2,8           |
| 12/19/95  | 01/22/96  | Denver Intake                 | 12/06/1910    | 22254.00000    | 8        | Denver        | 8,9,80,23     |
| 01/22/96  | 01/29/96  | Marsten Reservoir             | 04/01/1911    | 23270.00000    | 8        | Denver        | 23,8,9,80     |
| 01/20/96  | 02/09/96  | Cheesman Refill               | 12/31/1929    | 29219.00000    | 8        | Denver        | 23            |
| 02/09/96  | 02/16/96  | Barr Lake                     | 01/13/1909    | 21562.00000    | 2        | Ken Timmerman | 2,8,9,80,23   |
| 02/16/96  | 03/05/96  | Cheesman Refill               | 12/31/1929    | 29219.00000    | 2        | Denver        | 23            |
| 03/05/96  | 03/06/96  | Denver Intake                 | 12/06/1910    | 22254.00000    | 8        | Denver        | 8,9,23,80     |
| 03/06/96  | 03/11/96  | Cheesman Refill               | 12/31/1929    | 29219.00000    | 2        | Denver        | 23            |
| 03/11/96  | 03/12/96  | Denver Intake                 | 12/06/1910    | 22254.00000    | 8        | Denver        | 8,9,23,80     |
| 03/12/96  | 03/14/96  | Barr Lake                     | 01/13/1909    | 21562.00000    | 2        | Ken Timmerman | 2,8,9,80,23   |
| 03/14/96  | 04/01/96  | Cheesman Refill               | 12/31/1929    | 29219.00000    | 2        | Denver        | 23            |
| 04/01/96  | 04/09/96  | Cheesman                      | 06/27/1889    | 14423.00000    | 8        | Denver        | 23            |
| 04/02/96  | 04/09/96  | Barr Lake                     | 01/13/1909    | 21562.00000    | 2        | Bob Stahl     | 2,8,9,80      |
| 04/09/96  | 04/26/96  | North Sterling Storage        | 08/01/1915    | 23953.00000    | 1        | Mae Cuning    | 2,3,4,5,6,7   |
| 04/09/96  | 04/11/96  | Burlington Direct             | 11/20/1885    | 13108.00000    | 2        | Bob Stahl     | 2,8,9,80,23   |
| 04/11/96  | 04/17/96  | Cheesman Bypass to Burlington | 06/27/1889    | 14423.00000    | 2        | Denver        | 2,8,9,80,23   |
| 04/17/96  | 04/24/96  | Burlington                    | 11/20/1885    | 13108.00000    | 2        | Bob Stahl     | 2,8,9,80,23   |
| 04/24/96  | 04/25/96  | Burlington Bypass to Fulton   | 11/20/1885    | 13108.00000    | 2        | Bob Stahl     | 2,7,8,9,80,23 |
| 04/25/96  | 05/02/96  | Fulton                        | 07/08/1876    | 9686.00000     | 2        | Bob Stahl     | 2,7,8,9,80,23 |
| 04/26/96  | 05/04/96  | Riverside Direct              | 05/31/1907    | 20969.00000    | 1        | Mae Cuning    | 2,3,4,5,6     |
| 05/02/96  | 05/03/96  | Brantner                      | 07/01/1872    | 8218.00000     | 2        | Bob Stahl     | 2,7,8,9,80,23 |
| 05/03/96  | 05/03/96  | Evans #2                      | 10/05/1871    | 7948.00000     | 2        | Bob Stahl     | 2,7,8,9,80,23 |
| 05/03/96  | 05/08/96  | Lower Latham                  | 11/14/1877    | 10180.00000    | 2        | Bob Stahl     | 2,4,5,6       |
| 05/03/96  | 05/07/96  | Western                       | 08/10/1871    | 7892.00000     | 2        | Bob Stahl     | 2,7,8,9,80,23 |



CALL RECORD 1995-1996 (CONTINUED)

| Date Call | Date Call |                                       |               |                |          |               |                      |
|-----------|-----------|---------------------------------------|---------------|----------------|----------|---------------|----------------------|
| Initiated | Released  | Structure Name                        | Appropriation | Administration | District | Person        | Districts            |
| 1995-1996 | 1995-1996 |                                       | Date          | Number         |          | Placing Call  | Affected             |
| 05/04/96  | 05/09/96  | Springdale                            | 07/19/1886    | 13347.00000    | 64       | J.T. Hanrahan | 1,2                  |
| 05/07/96  | 05/08/96  | Evans #2                              | 10/05/1871    | 7948.00000     | 2        | Bob Stahl     | 2,7,8,9,80,23        |
| 05/08/96  | 05/13/96  | Fulton                                | 07/08/1876    | 9686.00000     | 2        | Bob Stahl     | 2,7,8,9,80,23        |
| 05/08/96  | 05/13/96  | Lower Latham                          | 10/24/1881    | 11620.00000    | 2        | Bob Stahl     | 2,4,5,6              |
| 05/13/96  | 05/17/96  | Brantner                              | 01/15/1881    | 11338.00000    | 2        | Bob Stahl     | 2,7,8,9,80,23        |
| 05/16/96  | 05/18/96  | Riverside Direct                      | 05/31/1907    | 20969.00000    | 1        | Mae Cunning   | 2,3,4,5,6            |
| 05/17/96  | 05/18/96  | Burlington Bypass to Brantner         | 11/20/1885    | 13108.00000    | 2        | Bob Stahl     | 2,7,8,9,80,23        |
| 05/18/96  | 05/23/96  | Harmony #1                            | 04/28/1895    | 16554.00000    | 64       | J.T. Hanrahan | 2,3,4,5,6,7          |
| 05/18/96  | 05/21/96  | Burlington Direct                     | 11/20/1885    | 13108.00000    | 2        | Bob Stahl     | 2,7,8,9,80,23        |
| 05/21/96  | 05/22/96  | Cheesman Bypass to Burlington         | 06/27/1889    | 14423.00000    | 8        | Denver        | 2,8,9,80,23          |
| 05/22/96  | 05/24/96  | Cheesman Bypass to Brantner           | 06/27/1889    | 14423.00000    | 8        | Denver        | 2,7,8,9,80,23        |
| 05/23/96  | 05/24/96  | Tremont                               | 03/01/1901    | 18687.00000    | 1        | Mae Cunning   | 2,3,,4,5,6           |
| 05/24/96  | 05/25/96  | Burlington                            | 11/20/1885    | 13108.00000    | 2        | Bob Stahl     | 27,8,9,80,23         |
| 05/24/96  | 05/26/96  | District 1 Reservoir                  | 12/31/1929    | 31423.29219    | 1        | Mae Cunning   | 1,2,3,4,5,6,7,8,9,80 |
| 05/25/96  | 06/10/96  | Cheesman                              | 06/27/1889    | 14423.00000    | 80       | Denver        | 80,23                |
| 05/27/96  | 06/19/96  | Barr Lake Refill                      | 01/13/1909    | 21562.00000    | 2        | Bob Stahl     | 2,3,9                |
| 06/10/96  | 06/17/96  | Cheesman                              | 09/24/1893    | 15973.00000    | 8        | Denver        | 80,23                |
| 06/19/96  | 06/20/96  | Marston Bypass to Burlington          | 04/01/1911    | 22370.00000    | 8        | Denver        | 2,8,9,23,80          |
| 06/20/96  | 06/21/96  | Barr Lake Refill                      | 01/13/1909    | 21562.00000    | 2        | Bob Stahl     | 2,8,9,80,23          |
| 06/21/96  | 06/23/96  | Burlington Direct                     | 11/20/1885    | 13108.00000    | 2        | Bob Stahl     | 2,8,9,23,80          |
| 06/23/96  | 06/24/96  | Barr Lake Refill                      | 01/13/1909    | 21562.00000    | 2        | Bob Stahl     | 2,8,9,80,23          |
| 06/24/96  | 06/25/96  | Spinney Mountain                      | 04/26/1973    | 45010.00000    | 23       | Aurora        | 23                   |
| 06/25/96  | 07/03/96  | Barr Lake Refill                      | 01/13/1909    | 21562.00000    | 2        | Bob Stahl     | 2,8,9,80,23          |
| 07/01/96  | 07/03/96  | North Sterling                        | 05/27/1914    | 26302.23522    | 1        | Mae Cunning   | 2,3,4,5,6,7          |
| 07/03/96  | 07/10/96  | Burlington Bypass to Meadow Island #1 | 11/20/1885    | 13108.00000    | 2        | Bob Stahl     | 2,7,8,9,80,23        |
| 07/03/96  | 07/09/96  | Springdale                            | 07/19/1886    | 13349.00000    | 64       | Jim Hanrahan  | 2,3,4,5,6            |
| 07/09/96  | 07/11/96  | Harmony #1                            | 04/28/1895    | 16554.00000    | 64       | Jim Hanrahan  | 1                    |
| 07/09/96  | 07/11/96  | Upper & Lower Platte and Beaver       | 04/15/1888    | 13985.00000    | 1        | Mae Cunning   | 2,3,4,5,6,7          |
| 07/10/96  | 07/11/96  | Burlington                            | 11/20/1885    | 13108.00000    | 2        | Bob Stahl     | 2,8,9,80,23          |



CALL RECORD 1995-1996 (CONTINUED)

| Date Call | Date Call |                                       |               |                |          |              |                       |
|-----------|-----------|---------------------------------------|---------------|----------------|----------|--------------|-----------------------|
| Initiated | Released  | Structure Name                        | Appropriation | Administration | District | Person       | Districts             |
| 1995-1996 | 1995-1996 |                                       | Date          | Number         |          | Placing Call | Affected              |
| 07/11/96  | 07/18/96  | District 1 Reservoir's                | 12/31/1929    | 31423.29219    | 1        | Mae Cunning  | 2,3,4,5,6,7           |
| 07/11/96  | 07/16/96  | Barr Lake Refill                      | 01/13/1909    | 21562.00000    | 2        | Bob Stahl    | 2,8,9,80,23           |
| 07/16/96  | 07/17/96  | Burlington Bypass to Meadow Island #1 | 11/20/1885    | 13108.00000    | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 07/17/96  | 07/18/96  | Meadow Island #1                      | 04/29/1882    | 11807.00000    | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 07/18/96  | 07/20/96  | Fulton Ditch to Bypass Platteville    | 07/08/1876    | 9686.00000     | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 07/18/96  | 07/22/96  | Tremont Ditch                         | 03/01/1901    | 18687.00000    | 1        | Mae Cunning  | 2,3,4,5,6             |
| 07/20/96  | 07/24/96  | Fulton                                | 07/18/1876    | 9686.00000     | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 07/22/96  | 07/23/96  | Lower Platte & Beaver                 | 04/15/1888    | 13985.00000    | 1        | Mae Cunning  | 2,3,4,5,6             |
| 07/23/96  | 07/30/96  | Springdale                            | 07/19/1886    | 13347.00000    | 64       | Jim Hanrahan | 1,2,3,4,5,6           |
| 07/23/96  | 07/30/96  | Ft. Morgan                            | 10/08/1882    | 11979.00000    | 1        | Mae Cunning  | 2,3,4,5,6,7,8,9,80    |
| 07/24/96  | 07/29/96  | Platteville                           | 10/15/1873    | 8689.00000     | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 07/30/96  | 08/06/96  | Bijou                                 | 10/01/1888    | 14154.00000    | 1        | Mae Cunning  | 2,3,4,5,6,7,8,9,23,80 |
| 07/30/96  | 08/02/96  | Harmony #1                            | 04/28/1895    | 16554.00000    | 64       | Jim Hanrahan | 1                     |
| 07/31/96  | 08/03/96  | Fulton                                | 07/08/1876    | 9686.00000     | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 08/02/96  | 08/26/96  | Farmers                               | 07/11/1895    | 16628.00000    | 64       | Jim Hanrahan | 1                     |
| 08/03/96  | 08/04/96  | Platteville                           | 10/15/1873    | 8689.00000     | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 08/04/96  | 08/05/96  | Brantner                              | 07/01/1872    | 8218.00000     | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 08/05/96  | 08/14/96  | Evans, #2                             | 10/05/1871    | 7948.00000     | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 08/06/96  | 08/24/96  | AA Smith                              | 06/18/1887    | 13683.00000    | 1        | Mae Cunning  | 2,3,4,5,6             |
| 08/14/96  | 08/15/96  | Western                               | 08/10/1871    | 7892.00000     | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 08/15/96  | 08/19/96  | Evans #2                              | 10/05/1871    | 7948.00000     | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 08/19/96  | 08/23/96  | Western                               | 08/10/1871    | 7892.00000     | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 08/23/96  | 08/26/96  | Fulton                                | 07/08/1876    | 9686.00000     | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 08/26/96  | 09/10/96  | Pioneer Recharge                      | 06/30/1977    | 47847.46567    | 1        | Mae Cunning  | 2,3,4,5,6             |
| 08/26/96  | 08/27/96  | Evans #2                              | 10/05/1871    | 7948.00000     | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 08/27/96  | 09/04/96  | Fulton                                | 07/08/1876    | 9686.00000     | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 09/04/96  | 09/10/96  | Burlington Bypass to Brantner         | 11/20/1885    | 13108.00000    | 2        | Bob Stahl    | 2,7,8,9,80,23         |
| 09/10/96  | 09/13/96  | Burlington                            | 11/20/1885    | 13108.00000    | 2        | Bob Stahl    | 2,8                   |
| 09/13/96  | 09/20/96  | Barr Lake                             | 01/13/1909    | 21562.00000    | 2        | Bob Stahl    | 2,8                   |
| 09/13/96  | 09/20/96  | Denver Intake                         | 05/01/1899    | 18018.00000    | 8        | Denver       | 8,9,80,23             |



CALL RECORD 1995-1996 (CONTINUED)

| Date Call | Date Call |                           |               |                |          |              |           |
|-----------|-----------|---------------------------|---------------|----------------|----------|--------------|-----------|
| Initiated | Released  | Structure Name            | Appropriation | Administration | District | Person       | Districts |
| 1995-1996 | 1995-1996 |                           | Date          | Number         |          | Placing Call | Affected  |
| 09/20/96  | 09/30/96  | Denver Intake             | 12/06/1910    | 22254.00000    | 8        | Denver       | 8,9,80,23 |
| 09/20/96  | 11/11/96  | Chatfield                 | 12/28/1977    | 46748.00000    | 8        | Denver       | 8         |
| 10/02/96  | 11/11/96  | McLelan                   | 09/23/1948    | 36060.00000    | 8        | Denver       | 8         |
| 10/30/96  | 11/11/96  | Cheesman Bypass to Intake | 12/31/1929    | 29219.00000    | 8        | Denver       | 8,80,23   |

### Staffing

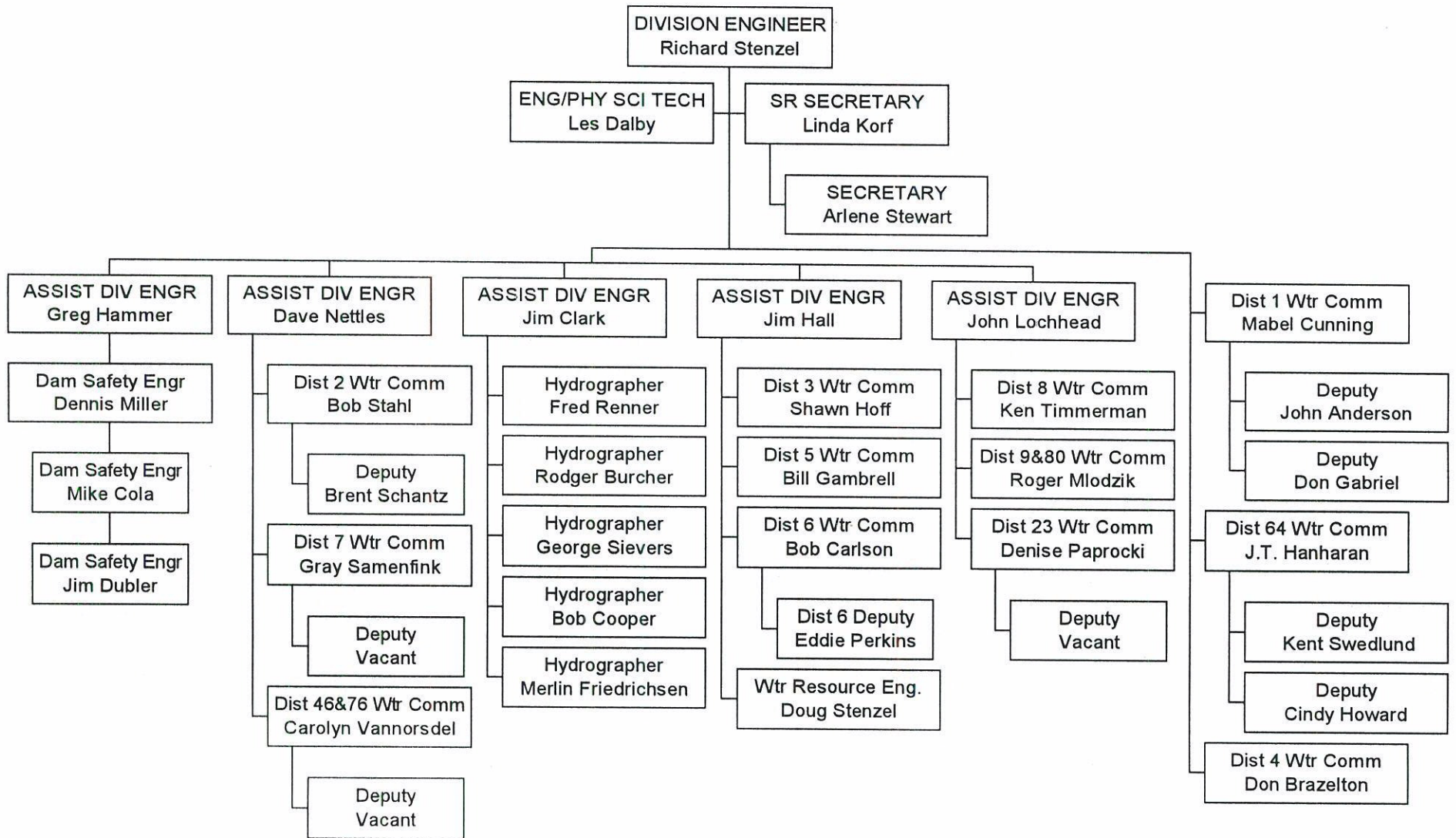
|  |          |
|--|----------|
| Dam Safety Engineers   | 4        |
| Water Resource Engineers   | 7        |
| Engineering/Physical Science Techs<br>(Includes 4 Hydrographers) | 5        |
| Administrative Assistants  | 2        |
| Full-Time Water Commissioners                                    | 13       |
| Permanent Part-Time Water Commissioners                          | 8        |
| Temporary Water Commissioners                                    | <u>2</u> |
| TOTAL STAFF  | 41       |

### Statistics

|  |         |
|--|---------|
| Decreed Surface Rights                       | 11,989  |
| Number of Well Permits                       | 113,507 |
| Number of Plans for Augmentation             | 473     |
| Number of Dams                               | 787     |
| Number of Active Substitute Supply Plans     | 114     |
| Number of Contacts to give Public Assistance | 25,000+ |



Division 1

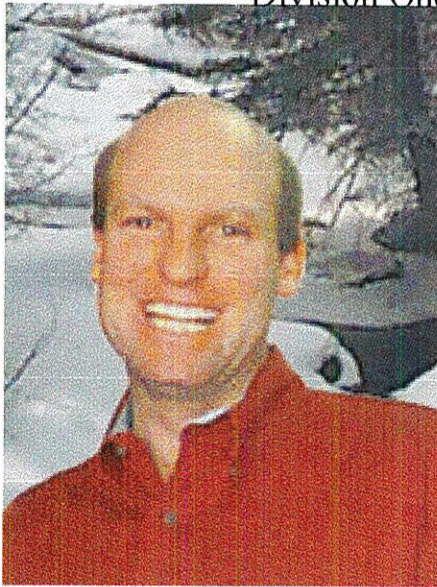




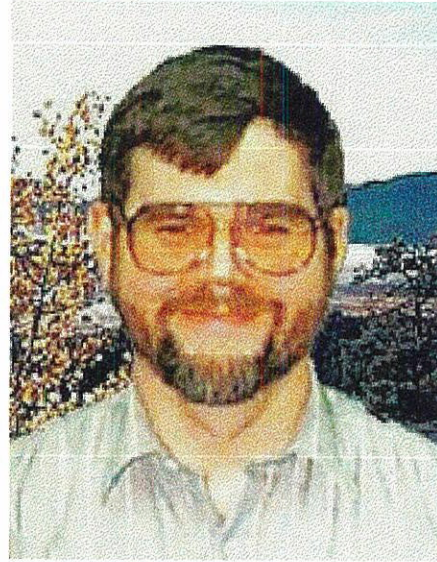
Division One Office Staff



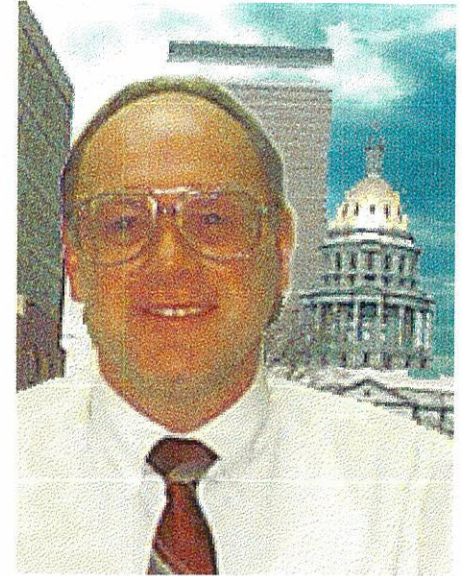
Dick Stenzel



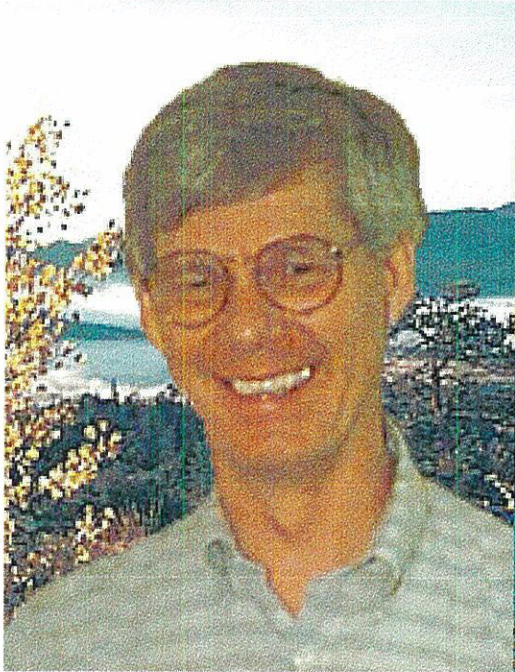
Jim Hall



Dave Nettles



John Lochhead



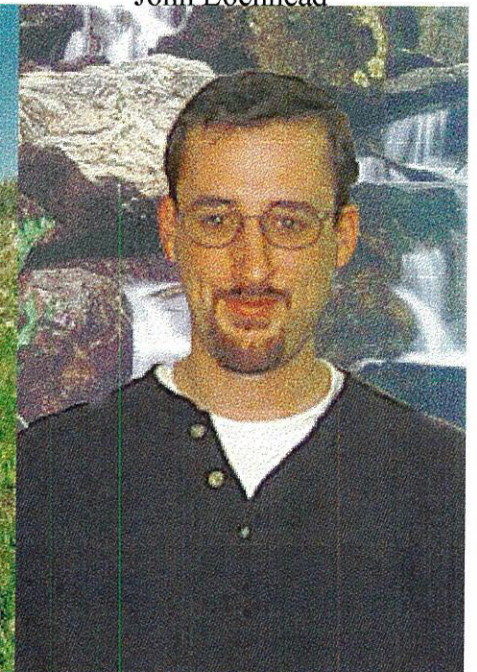
Les Dalby



Linda Kcrf



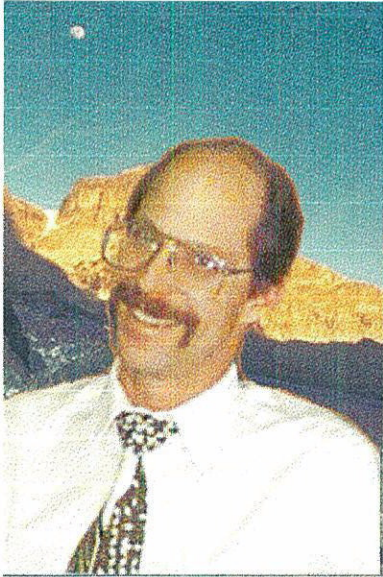
Arlene Stewart



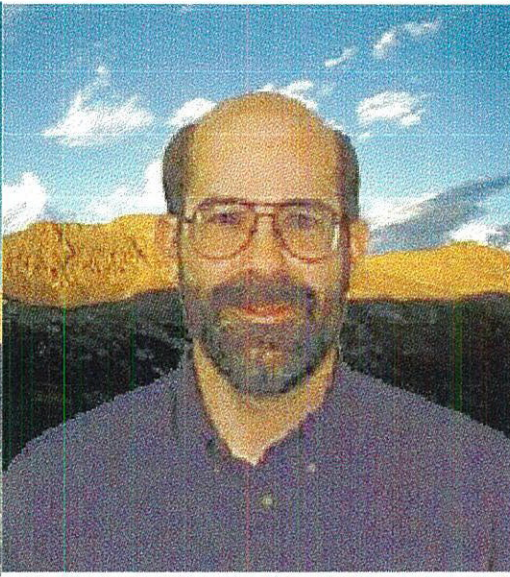
Doug Stenzel



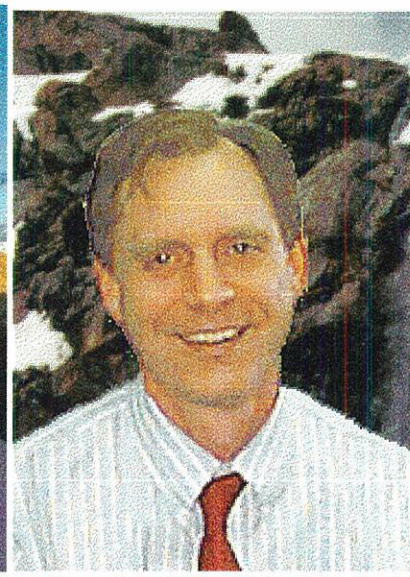
Division One Dam Safety Engineers



Greg Hammer



Dennis Miller

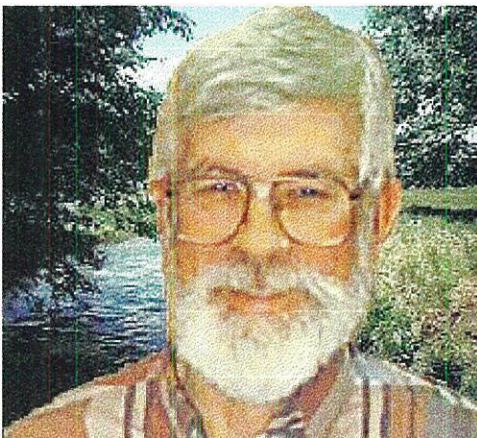


Jim Dubler

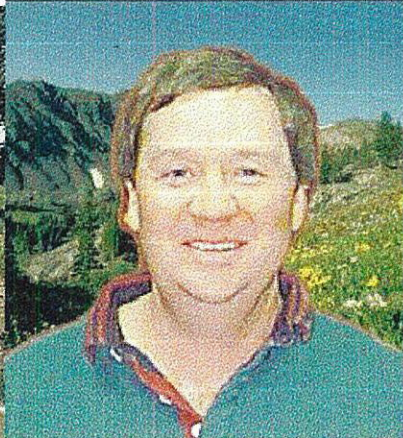


Mike Cola

Division One Hydrographers



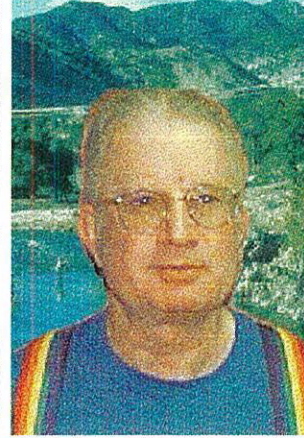
Jim Clark



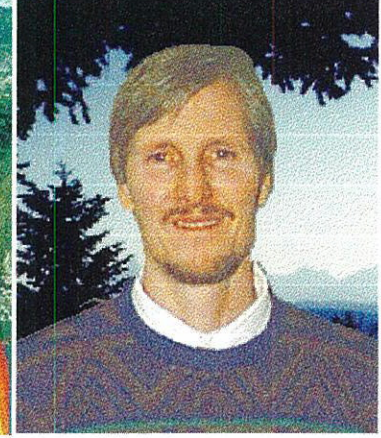
George Sievers



Fred Renner



Rodger Burcher



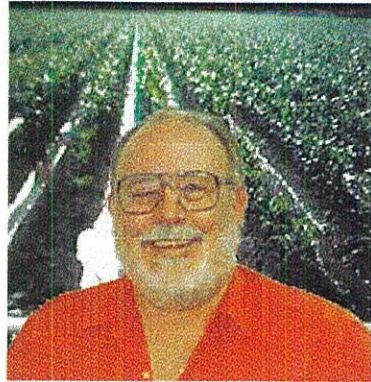
Bob Cooper



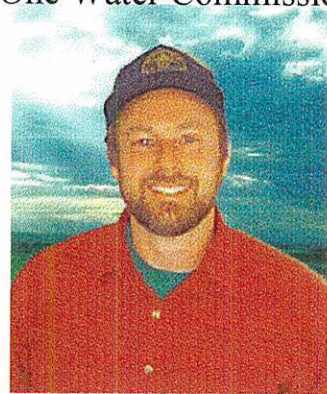
Division One Water Commissioners



Mae Cunning District 1



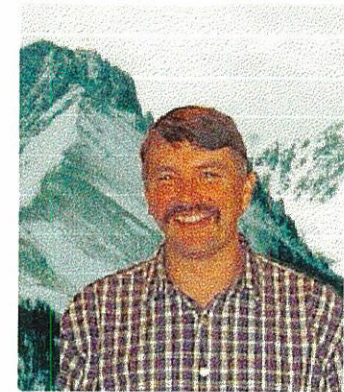
John Anderson Dist 1



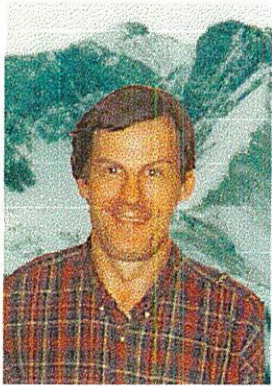
Bob Stahl Dist 2



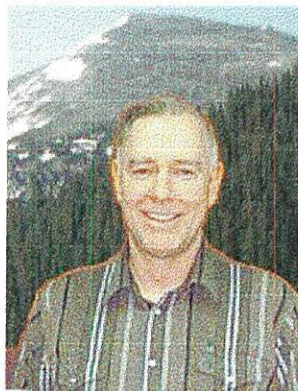
Brent Schantz Dist 2



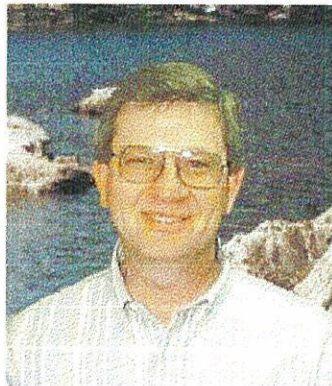
Shawn Hoff Dist 3



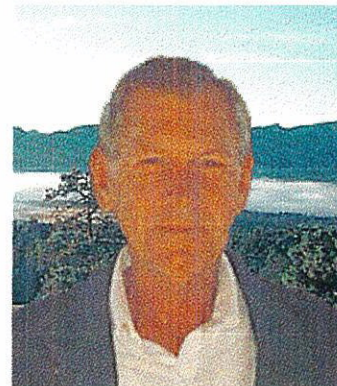
George Varra Dist 3



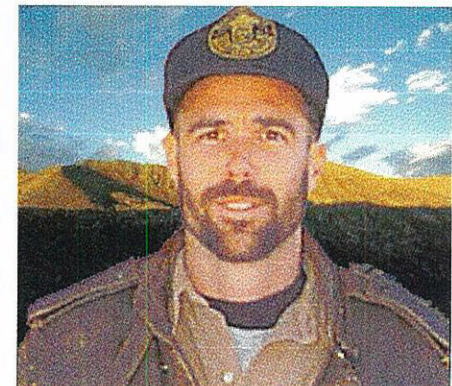
Don Brazelton Dist 4



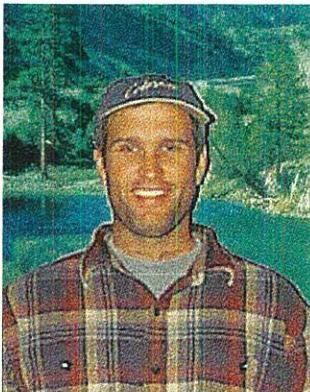
Merlin Friedrichsen Dist 4



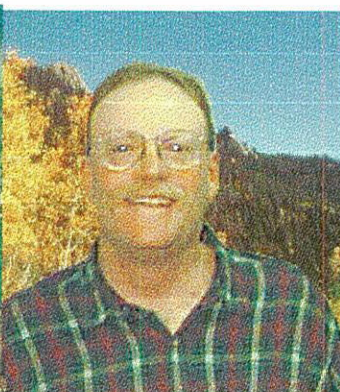
Bill Gambrell Dist 5



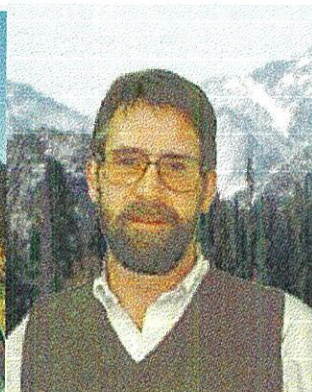
Bob Carlson Dist 6



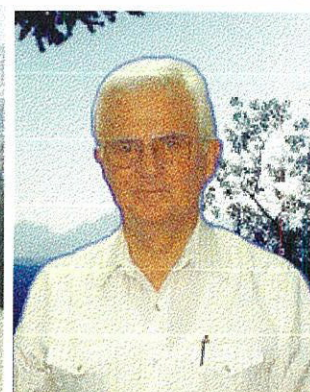
Eddie Perkins Dist 6



Gray Samenfink Dist 7



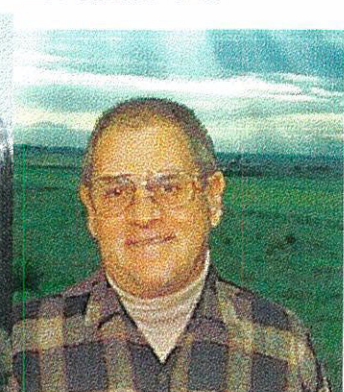
Roger Mlodzik Dist 9 & 80



Ken Timmerman Dist 8



Denise Paprocki Dist 23



Jim Hanrahan Dist 64