



**COLORADO DIVISION OF  
WATER RESOURCES**

DEPARTMENT OF NATURAL RESOURCES

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# 2003 Annual Report

*The Colorado Division of Water resources promotes an open and honest communication environment that builds trust, respect and loyalty among ourselves and the diverse community in which we live and work.*

## Message from Hal Simpson, State Engineer

For the Division of Water Resources (DWR), 2003 was a year with many significant events that are described in more detail in other articles in this annual report. Without question, the on-going drought continued to create many water administration challenges, especially in southern and southwestern Colorado.

The DWR had to continue to deal with budget issues, as have many other state agencies that are funded through the General Fund. Fortunately, the legislature, and specifically the Joint Budget Committee, recognized the importance of DWR's programs by not eliminating programs, and enacted legislation in the 2003 session to cash fund portions of the DWR budget (25 percent) through increases in well permit application fees (SB 03-181) and establishing a new fee for water rights administration (SB 03-278). This latter legislation required considerable public education as a part of the process to promulgate rules for the program. Meetings were held in fifteen locations throughout the state prior to the December rulemaking hearing. Needless to say, this new fee is unpopular and the DWR will have to wait to see how water users respond to invoices to be mailed in February 2004.

The Fourth Report of Special Master Littleworth was filed with the U.S. Supreme Court in the on-going liti-

gation, Kansas v. Colorado in the Arkansas River basin. The report contains 13 recommendations, nearly all favorable to Colorado, and are based on extensive litigation of the hopefully final trial segment in 2002. The one recommendation that created some concern was that the Penman-Montieth methodology be used to determine potential evapotranspiration of crops. Colorado's experts testified that, without proper adjustment for Arkansas River basin conditions, this method would over-state crop evapotranspiration and therefore result in a greater prediction of stream depletion by post-compact wells. The DWR is working closely with the Colorado Water Conservation Board and the Attorney General's Office in

identifying possible fund sources to implement studies and construct weighing lysimeters in the Rocky Ford Experiment Station to develop adjustments to the Penman-Montieth method for use in the first ten-year accounting period, 1997 to 2006. This effort is extremely important and, without adjustments, Colorado could be unfairly charged with failure to comply with the compact.

As I conclude this message, I must thank the staff of the DWR for their dedication, perseverance, and courage during a very challenging year. Each and every person plays an important role in achieving our mission and serving the water users and the public.

### Office of the State Engineer Colorado Division of Water Resources

Executive Director, Department of Natural Resources

*Russell George*

**Governor**

*Bill Owens*



#### State Engineer

*Hal D. Simpson*

#### Chief Deputy State Engineer

*Kenneth W. Knox*

Water Supply, Interstate Compacts,  
Water Well Permitting, Litigation,  
Information Technology, Designated  
Basins, Public Records

#### Deputy State Engineer

*Jack G. Byers*

Engineering, Technology, Budget and  
Investigations

#### Public Information Officer

*Marta Ahrens*

#### Division Engineers/ River Basins

*James R. Hall, Division 1*  
South Platte

*Steven J. Witte, Division 2*  
Arkansas

*Steven E. Vandiver, Division 3*  
Rio Grande

*Frank J. Kugel, Division 4*  
Gunnison

*Alan C. Martellaro, Division 5*  
Colorado

*Robert M. Plaska, Division 6*  
Yampa / White

*Kenneth A. Beegles, Division 7*  
San Juan / Dolores

## *South Platte River Basin—Division 1*

The 2003 water year began on November 1, 2002 with a call for reservoir storage. Irrigation reservoirs in the plains were empty after the 2002 irrigation season. With the combination of empty reservoirs, the late beginning of the storage season, and the low flow conditions, mainstem irrigation reservoir storage continued significantly behind normal levels throughout the winter of 2002-03. Storage levels were similar to those in the 1950s when irrigation reservoirs did not fill.

A very large region-wide snowstorm in March significantly improved the snowpack throughout the South Platte basin, raising it above average for the first time in several years. Fortunately, April continued to be wet throughout the basin allowing additional storage in reservoirs. By the end of May, there were near flooding situations along a few tributaries; however, there was sufficient demand on the mainstem to take all

of the water not needed for use on the tributaries even during this runoff. Much of the runoff was captured by several reservoirs that had not filled along the mainstem. As of the end of May, there remained a few irrigation reservoirs along the mainstem and tributaries that still had not completely filled.

Runoff and timely rains allowed users to continue to fill reservoirs through the month of June. By the end of June, runoff had begun to decline and a direct flow irrigation call occurred on the South Platte for the first time during 2003. The flow at the Kersey gage in the summer of 2003 returned to very low levels, near those experienced in 2002.

September and October were extremely dry with no appreciable precipitation. Irrigation calls along the South Platte continued through the first part of the October. As the irrigation season ended, the irrigation

call on the South Platte went off allowing for recharge in much of the basin.

For the first time in 2003, Division 1 used Section 37-92-502(5)(b), C.R.S. to obtain power usage data for specific wells directly from power suppliers to support enforcement actions against water wells. Staff "tagged" several hundred wells with orders prohibiting the diversion of water. As part of the tagging process, data on the entity supplying power including name, meter number and meter reading, were collected along with other information related to use of the well. Following the end of the irrigation season, letters were sent to the various power suppliers requesting monthly power usage data for the tagged wells. This data is being used to identify persons who pumped their wells in violation of an order. It will also be used to support enforcement actions in Water Court.

## *Arkansas River Basin—Division 2*

Impacts from the extended drought continued in 2003 even though snowpack and runoff exhibited some periods that approached average in the Arkansas River basin. Challenges included higher than average transit losses on reservoir deliveries and administration of exchanges under tight river conditions.

The first significant interruptible supply agreement was developed by the City of Aurora and the Highline Canal Company to provide a mechanism for farmers to lease their surface water rights on a one to two-year basis in order to allow the utilization of the consumable portion of the water right as a source of supply to help refill Aurora's depleted storage vessels. The plan will be set to

operate during 2004 for the first time, but a considerable amount of back-ground work had to be conducted in order for the plan to fall in place.

The greatest difficulty encountered this year was the on-going drought. The extremely dry conditions led to a much higher than usual workload in reviewing and processing water transfers and amendments, in assisting the associations as well as individuals in locating and evaluating alternative replacement sources, and in explaining processes to people not normally involved in acquiring well permits, developing augmentation plans, etc.

The Arkansas River Basin Water Bank became operational in January with the Southeastern Colorado

Water Conservancy District in the role of operator, and the Division 2 staff in the role of evaluating applications for suitability under the conditions and proposing terms of non-injury for the proposed banking operation. Four applications to place water in the Water Bank, totaling 340 acre-feet, were accepted during the year. Although there were registered entities interested in leasing such water, the combination of other alternatives to available to water users, the price for banked water, and the relatively small amounts of water banked, no completed leases of banked water were produced. Division 2 staff are amending the existing Water Bank rules and regulations as a result of the current statewide water banking statute (C.R.S. 37-80.5-104.5).

### Rio Grande Basin—Division 3

Following the record drought in 2002, 2003 turned out to be the sixth driest year in recorded history, which has been kept since 1890. This second consecutive year of extremely low runoff provided enough streamflow for most ditches to divert some water for about three weeks, and then the streams were back down to base flows that were much below normal again this past summer. This lack of diversions, once again, resulted in a dramatic shortage of surface water for irrigation, as well as for recharge of the aquifer on which the wells are so dependant. This situation, along with very little natural recharge and pumping from both aquifers, caused another draft on the aquifers of the San Luis Valley. Additionally, the summer monsoon season never developed, which only added to the woes of those using surface water.



Stream administration in Division 3 was frustrating due to the continuing low runoff and drought. Most streams had less than a 50 percent runoff that created many consequences besides not being able to satisfy the demand by the surface users. Issues of no return flows, little or no recharge, and general impacts of wells on the hydrologic conditions caused a continuing difficult set of circumstances for the San Luis Valley. The water users are discussing possible long-term solutions including creating ground water management sub-districts to deal with aquifer overdrafts and stream depletions.

The Hydrographic Branch and the Information Technology group succeeded in developing a flow alert system to warn of high (or low) flow events. Division 3 has four stations that have been set up in the

flow alert system. All of these stations are set to transmit flow alerts when the gage height reaches a predetermined flood alert level. When the height of water at any of these stations reaches the alert level, the computer system will send an alert to the DWR office, to the appropriate district office, and to a specifically designated cell phone. This new system will, hopefully, enhance the staff's ability to provide flood warnings to those people downstream who might be affected and to allow better management of flood flows.

The incredible conversion of the Great Sand Dunes National Monument to a National Park continues. This would not normally be considered a water issue, but it is intimately tied to the Baca Grant, the whole idea of possible acquisition of the ranch, and inclusion of it as part of the park. Negotiations and litigation continued and the final appeals are in process, and it is hoped that the sale can be concluded by the end of 2004.

### Gunnison River Basin—Division 4

Although conditions were somewhat improved, the 2003 irrigation season again experienced numerous water shortages across the Gunnison and San Miguel Basins. The April 1 snowpack was 86 percent of normal, which by itself is not abnormally dry. However, the five previous years averaged only 80 percent of normal, and this prolonged dry trend has had an adverse impact on the aquifers and reservoirs of the basin. Staff continued to receive numerous reports of wells and springs going dry.

The Gunnison Tunnel placed a call for the second year in a row. This had a major impact on the Upper Gunnison basin. The call was placed on July 15 and remained in effect until September 8. The one signifi-

cant difference between this call and the one of 2002 was that all rights junior to the Tunnel's 1913 decree date were not curtailed, only down through the 1941 decrees in the Upper Gunnison basin.



Gunnison Tunnel Diversion in Black Canyon

This was the year for construction with the installation of numerous concrete ramp flumes, new gaging stations, and satellite monitoring equipment for water administration purposes. Concrete ramp flumes were installed at Muddy Creek below Paonia Reservoir, and at Surface Creek near Cedaredge. These flumes provide a stable control for the gages and a more accurate stage/discharge relationship. Also installed were new shelters and equipment on Razor Creek and Vouga Reservoir, and new shelters on the two parshall flumes measuring the inflows to Vouga. These are valuable for the administration of Razor Creek and access of the information from this equipment will save the water commissioner considerable time and mileage.



## *Colorado River Basin—Division 5*

This year brought a rapid but short runoff due to heavy spring snowstorms, followed by very warm weather at the end of May. This caused many of the smaller reservoirs to fill very quickly after they had been drained for so long during the drought conditions of 2002. Average snowfall in February, several heavy snowstorms in March, and a significant snowstorm in April, improved the runoff forecast each month, reaching a basin-wide high of 95 percent by May 1. The snowpack was generally much better along the Continental Divide, particularly in the northern reaches of the Colorado River Basin. The western drainages did not fare as well.

Several reservoirs filled in 2003, unlike 2002 when none of the major reservoirs filled. Both Williams Fork and Dillon Reservoirs filled, and on the day before the river call was to curtail Green Mountain Reservoir, it reached a physical fill. Ruedi Reser-

voir was near full at the end of the storage season; however, Granby, Wolford Mountain, and Homestake were considerably below normal when they began to be drawn upon.

The Coordinated Reservoir Operations entered into its seventh year under the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River. Unfortunately, it was also the sixth consecutive year of below-average precipitation. The objective of the program is to coordinate operations of and releases from various reservoirs to enhance habitat in the 15-Mile Reach of the Colorado River below the Grand Valley Irrigation Canal for the benefit of endangered fish.

Strong economic conditions were seen during the year that kept the Division 5 staff busy in the areas of ground water and well permitting, along with research regarding water well ownership for real estate transac-

tions and well permitting issues.

On May 30, 2003 the north (main) branch of the Grand River Ditch failed. The ditch, owned by the Water Supply and Storage Company (WSSC), diverts water from the North Fork of the Colorado River over La Poudre Pass into Long Draw, a tributary of the Cache La Poudre River in Water Division 1. This transmountain diversion diverts up to 525 cfs, is the primary source of supply for WSSC, and is the oldest of the large transmountain diversions taking water out of the Colorado River. Following a series of meetings negotiating the details, a substitute supply plan (SSP) was approved on July 17, 2003 to allow water that flowed through the breach to be delivered by Colorado-Big Thompson (CBT) facilities to a location on the Cache La Poudre River for delivery to the shareholders in the WSSC. The SSP, and the USBR-CBT carriage contract expired on September 30, 2003.

## *Yampa/White River Basins—Division 6*

This water year proved to be a welcome relief from the previous two years. Conditions in Division 6 improved dramatically. While the summer was still dry, spring runoff provided an adequate supply in most areas that helped to significantly reduce administration compared with 2002. Aided by a major snowstorm that hit the northern part of the state in March, spring runoff was the best it had been in several years. The effects of the drought continued to linger though, as summer precipitation patterns were well below average for most of the growing season.

Precipitation was higher, but generally still below average. While the weather observer in Walden recorded precipitation events measuring well

above average, these were very local in nature and were not representative of precipitation across the whole of the North Platte River basin. Likewise, precipitation events throughout the rest of Division 6 were widely scattered during the summer, with July and early August being quite dry.

Higher snowpack and increased levels of precipitation during the summer led to better stream flows throughout the year. While flows stayed below average levels most of the summer, there were extended periods during the spring runoff where stream flows greatly exceeded the long-term averages. Total runoff for the water year was still well below average.

The State Engineers of Utah and

Colorado began discussions to update the existing Memorandum of Understanding between the states dealing with the administration of Pot Creek. Water in Pot Creek is apportioned between the users of the two states under a Memorandum of Understanding. No water was available during 2003 for direct flow users in Colorado. At the annual water users meeting, the water commissioner reported that all runoff prior to May 1 went to storage.

Development in the Steamboat Springs area continues to bring new challenges to staff. Streams that have never seen administration now have several new owners who are unable or unwilling to cooperate with their neighbors, and are seeking increased levels of water administration.

## San Juan/Dolores River Basin—Division 7

After the record-setting 2002 season, it was anticipated that the water supply situation would likely improve. It did, but only marginally. Early snow put the southwestern basins at about 80 percent of normal. As the winter continued, the return to dry weather resumed. The Columbus snow course and La Plata Mountains developed the best snowpack, while the eastern San Juan range again came up short. A good snow season has not been experienced since 1997. This was no exception as spring runoff predictions fell to under 50 percent in most areas. A complicating factor was that very little carry-over storage was available in the reservoirs.

Knowing this situation beforehand helped in advanced planning by water managers in those basins. Ditches cooperated to delay turn-on dates until very late into May. During this time period, the reservoirs were able to maximize the storage available. The water year was poor

but rivers still ran twice the flows of the previous season. This plan succeeded in increasing supplies for the first irrigation across most acres.

The peak flow occurred in September after a late summer storm brought major precipitation to the area. As much as five inches of precipitation fell in the lower elevation and border areas. Flows reaching 14,000 cfs were seen at the Four Corners in the San Juan River. This rainstorm and a few others gave a much needed break to parched land all across the southwest. Reservoirs picked up significant quantities as ditches shut down again to allow for storage. Though the water supply was only about 50 percent or less in most drainages, some crops were raised this year, no major fires occurred, and the general outlook for the future improved considerably.

Similar to 2002, extensive periods of river administration were required. Calls were placed across the several

basins beginning early with the February 15 compact call from New Mexico on the La Plata River and the November 1, 2002 regular call for storage in Cascade Reservoir.

The La Plata River Compact was administered early and the New Mexico demand reached as high as 100 cfs. The river ran for a more extended time than expected and many ditches were able to divert significant quantities for a short period of time. The Pine Ridge Ditch developed an emergency substitute water supply plan for the Lake Durango water system and gained valuable commercial domestic water for the service area.

The Memorandum of Agreement (MOA) with the Division of Wildlife (DOW) was reviewed after the dewatering of the La Plata River at the Colorado/New Mexico stateline left a native chub population isolated. A new stream list was prepared by DOW for notice under the guidelines of the MOA.

## Dam Safety Activities

The Dam Safety Branch was reorganized during 2003, which allowed for the transfer of a dam safety engineer from Division 2 to Grand Junction to help both in Divisions 4 and 5, and the new dam safety engineer in Division 6 was assigned to perform inspections in Grand County. These additions helped tremendously in reducing the inspection backlog and allowed the other Division 5 personnel to perform less dam safety work and more water administration duties. This also allowed for the completion of ten hazard evaluations, four hydrology studies, and five other technical evaluations. With the newly acquired dam safety engineers being fully established, a greater reduction on the main dam

safety engineer's inspection workload in the future is expected, which should help allow for the reduction in the hazard evaluation backlog. For these reasons, this reorganization can be considered a *significant dam safety highlight*.

The new and enlarged spillway at Great Western Dam was completed, and renovations at Standley Lake were started. Using micro-tunneling techniques, Standley Lake Dam will receive a new outlet works drilled through the abutment of the dam into the reservoir. Included in this project is a new, enlarged spillway, and abandonment of the existing outlet works. Construction began in February for the expansion of the Loveland Water

Storage Reservoir, better known as Green Ridge Glade Reservoir.

Terrace Reservoir was drawn down to allow work to be performed on the west gate valve, which had previously been noted to have considerable leakage past it. Once reservoir drawdown was completed in November, the worst suspicions were confirmed; the trashrack had failed due to structural overloading and was completely destroyed. This necessitated the design and construction of a new trashrack, a process that was just getting started by the end of the calendar year. In addition, a considerable volume of reservoir bottom sediments were drawn through the outlet, fouling the Alamosa River channel downstream.

## Decision Support Systems

The Rio Grande Decision Support System (RGDSS) entered into the fifth and final development phase. Future activities are expected to occur as the project moves into the maintenance phase. Major accomplishments in coordination with the Colorado Water Conservation Board and RGDSS consultants included Surface and Ground Water Model development and Peer Review enhancements. Ground water models continued to be developed for incorporation into the RGDSS and include a steady state, an average monthly, and a monthly (historic) model.

The transition of the RGDSS ground water model to an administrative tool required to develop rules and regulations for new well development from the confined aquifer in Division 3 has started. It is anticipated that this administrative tool will be used in the promulgation of rules and regulations for new wells located in the confined aquifer in the Valley scheduled to be in place on July 1, 2004.

The RGDSS surface water model is a comprehensive water supply model that simulates every water use and water right in the basin from 1950 to

the present. Major enhancements to the state's surface water model include the ability to simulate the Rio Grande Compact, operate on a daily basis, include ground water use and simulate the variable efficiency of water use.

The South Platte Decision Support System (SPDSS) moved into the first of six phases of implementation. Technical review of all SPDSS deliverables are in progress and will be intimately involved in the surface water, ground water, and consumptive use modeling portions of this six-year, \$11 million project.

## Hydrography and Satellite Monitoring Activities

The Hydrographic and Satellite Monitoring Branch strives to provide accurate, high quality "real-time" streamflow data. The branch also develops historic stream records in coordination with other state and federal entities and the water uses.

The DWR cooperated with the USGS and the Colorado Water Conservation Board (CWCB) on numerous activities. Work continued to upgrade the DWR and USGS gaging sites, with monetary assistance from the CWCB, to "flood-harden" areas that may have likely been damaged and unable to report stage during a flood event. A part of this work also included extending rating curves at seventeen gaging sites.

Thanks to the cooperation, support, and assistance of Catamount Development Inc., the DWR successfully installed a gaging station on the Yampa River just upstream of Lake Catamount (YAMABVCO) at the Routt County Road Bridge 18C. The gage consists of a Sutron shaft encoder Model SE8500 connected to a high data rate Sutron SatLink Logger with satellite telemetry housed in a 42-inch diameter stilling well.



Shelter/stilling well for new gage on the Yampa River above Lake Catamount

A long-standing issue with Denver Water over the operation of their new Cipolletti Weir below Antero Reservoir was resolved this year. The weir had severe approach velocity problems due to inadequate baffling in the stilling basin below their outlets. During one of the rating measurements series, the hydraulics in the basin were so bizarre that the gage height at the weir dropped when the flow was increased. Denver Water agreed to redesign the basin when the reservoir is enlarged and oper-

ate the outlets in such a way that basin turbulence can be monitored. The theoretic rating for the Cipolletti will be abandoned in favor of a rating developed from hydrographic measurements.

Division 3 staff replaced the cableway at the Rio Grande at Wagon Wheel Gap gage this year. The previous cableway, constructed by the USGS approximately ten years ago, did not meet safety criteria and had been condemned. Nearly the entire cableway, with the exception of the mass anchors, was replaced, making cabling at this site much safer. The left mass anchor at the Rio Grande at the 30-Mile Bridge cableway was also replaced. The cableway at Saguache Creek near Saguache gage was also rehabilitated. The existing cableway was in need of significant repairs, but instead of repairing the old cableway, a new bank-operated cableway was installed. Although there are several bank-operated cableways in use in Division 3, this cableway, a "Tacoma" bank-operated cableway system, was the first of its kind that the DWR installed. It appears to be a very good system and staff are looking to install several others in the next few years.

## Water Administration Fee Program

On May 1, 2003, Senate Bill 03-278 implemented Colorado's first Water Administration Fee Program. The program authorized the State Engineer to collect annual fees from the owners of specified water rights throughout the state to offset the administration of those rights. The act provided the following fee schedule:

Direct flow (1.0+ cfs)	Storage (100+ acre-feet)
\$10 – agricultural irrigation, recharge, stock watering	\$25 – agricultural irrigation, Recharge, stock watering
\$250 – all other beneficial uses	\$100 – all other beneficial uses

As many expected, the program was not warmly received by the individuals and organizations to whom the first year's invoices were assessed. Two protests to Senate Bill 03-278 were filed in District Court. The Denver office and all Division offices logged thousands of concerns, complaints, and formal protests.

Each uniquely identified water right owner received one statement. Each statement contained one or more invoices, with each invoice representing a unique water right. Approximately 98 percent of all water rights that met the SB 03-278 requirements were assigned to an owner. The remaining two percent were abandoned.

Senate Bill 03-278 provided a two-year sunset provision to the bill — the program would expire in July, 2005 if no further legislative action is taken. It also required the State Engineer to file a report on the progress of the program with the General Assembly by December 1, 2004. The report was to analyze the first year of the program, offer potential recommendations for the future of the program beyond its two-year provision, and describe the input gathered from the public.

A great deal of effort was spent by staff researching ownership of water rights, resulting in more accurate and up-to-date water rights and structure database records.

## Information Technology

This year marked a shift from providing basic services to improving upon those services and introducing new technology to save costs and improve efficiencies. The long-awaited and much-anticipated HydroBase Data Entry Tools were completed, formally and will forever replace the old dbase systems. The Satellite Monitoring System provided streamflow data with little down-time for the entire year. There was an increase in the use of personal digital assistants (PDAs) and a Virtual Private Network (VPN) was implemented. Viruses, outside hackers, and spam posed new and increasing challenges. The single

largest project was preparing to move to an entirely new phone system, using data networks instead of an outside telecommunications company.

The DWR began an ambitious project nearly a decade ago — to centralize all databases into a single data-centric model. To do this, networks were built, desktop computers were deployed, employees were trained, databases were built, and the data was converted. The last piece of the puzzle was replacing the software that employees used to enter and edit data, get reports and run analyses and models. In addition, the new water administration fee bill, SB-278,

required a completely new addition to the HBDE Tools that allowed ownership information to be tied to water rights. The speed with which modifications were made attests to the flexibility and efficacy of this system, as well as to the capable and experienced staff of the DWR.

The GIS capabilities of the DWR continue to grow as more employees become proficient with the software and mapping techniques. The DWR implemented a new, interactive Web site that allows users to view maps and data via a browser, without having to download or store large datasets onto their local machines.

## Arkansas River Compact

Special Master Arthur L. Littleworth completed his Fourth Report in October of 2003. In his report, he addressed some key issues and provided his recommendations. Kansas filed exceptions to some of the recommendations. Oral arguments before the United States Supreme Court are anticipated to be scheduled after October 2004. Subsequent to the Special Master's Fourth Report, Division 2 staff are working closely with legal counsel to develop

plans for further studies and improvements to ensure Colorado's compact compliance into the future. At their meeting on May 23, 2003, the Arkansas River Compact Administration directed the Division Engineer, in his capacity as Operations Secretary, to prepare a report describing each of the outstanding operational issues that have been raised as concerns by the state of Kansas and to include a description of both state's positions on these issues.



## ADDITIONAL ACCOMPLISHMENTS AND STATISTICS

The Supreme Court adopted the stipulated settlement to the Republican River interstate compact on October 20, 2003. The acceptance by the Supreme Court signals a new era of water administration in the 24,900 square-mile watershed of the Republican River covering parts of northeastern Colorado, southwestern Nebraska, and northern Kansas.

The General Assembly passed Senate Bill 03-181 and Senate Bill 03-45. SB-181 (effective March 6, 2003) increased the fee to apply for a well permit, from \$60 (generally) to \$440. SB-45 added another \$40 to the permit fee, effective July 1, 2003 to provide for eight well inspection technicians to improve public safety. While SB 03-181 was pending final enactment, permit applicants rushed to apply under the lower fee. The dedicated well-permitting staff adeptly absorbed the surge of applications without undue delays.

Senate Bill 03-073 allowed the State Engineer to approve substitute water supply plans specifically for South Platte well users. This legislation could affect about 3,000 wells in the South Platte River basin. Three hearings as required by the legislation were held in 2003. About 800 wells were curtailed due to lack of augmentation water.

The DWR reviewed and acted upon 138 general substitute water supply plans (including emergencies), 48 SWSPs related to gravel pits, received and acted upon a total of 348 subdivision referrals, and approved eight emergency substitute water supply plans to provide drinking water to municipalities and other water suppliers to alleviate public health and safety concerns in Colorado. The groundwater evaluation staff received and acted upon 11,399 new applications for well permits.

The Designated Basins staff issued 777 small-capacity well permits, 205 large-capacity permits, 65 change application approvals, and were involved in numerous enforcement activities. Staff completed the issuance of final permits in the Northern High Plains Designated Ground Water Basin and began the same process for the Southern High Plains Basin.

Pursuant to Section 37-80.5-104, C.R.S., the Arkansas River Basin Water Bank became operational in January of 2003 with the Southeastern Colorado Water Conservancy District in the role of operator with the Division 2 office in the role of evaluating any applications for suitability under the conditions and proposing terms of non-injury for the proposed banking operation.

Division 1 encouraged and assisted, where appropriate, in the development of new sources of replacement water for wells in the South Platte Basin. Division 1 also encouraged the cooperation of organizations that provide replacement water for wells and has provided input to Colorado State University in their efforts to provide accounting software for recharge and well depletion estimates. Division 1 also continued its GPS well location program in the Republican River Basin, providing necessary information to support the compact.

### *In Memory...*

**Rodger L. Burcher** started with the Division 1 office as a Water Commissioner in February 1988. His position evolved over time to hydrography duties. Rodger passed away on May 14, 2003 in a traffic accident on his way home from work. Rodger had a quick smile, a funny sense of humor and a heart as big as the world. He was the "Mr. Fix-it" of the office. If there was a project to be built or something to be fixed, it always went to Rodger. He loved to listen to a variety of music in the office and would sing along. Rodger was a wonderful man, friend and co-worker and is greatly missed.

