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Settlement Reached on 20-Year Old Case

Steve Vandiver, Division Engineer, Water Division 3

On March 30, 2000, a historic event occurred in the Division III Water Court when Judge Robert Ogburn signed a consent decree confirming Federal reserved water rights on the Rio Grande and Gunnison National Forests. This decision marked the end of a case that was filed in 1979 and has been on the docket continuously since that time. The case was amended four times during its lengthy life, the latest being in October of 1999. What started as Case 79CW85, became 81CW183 (Consolidated) when it was amended the first time.

What is truly remarkable is that the case was settled without being litigated. The initiative and tenacity of the water users in the San Luis Valley, the Rio Grande Water Conservation District, the U.S. Forest Service local representatives, the State of Colorado and their able attorneys was what was responsible for achieving a settlement. The process was not without numerous pitfalls and was often given up as a lost cause. At those points, a few courageous people resolved that it was still possible to achieve an agreement that met the needs of the Forest Service and provided the water users the protection that was necessary to allow them go forward. At one point, Colorado Attorney General Ken Salazar personally intervened with the U.S. Attorney General's office to revive the process which

had gotten bogged down in legal "never, never-land". Once back on track, the negotiations were completed and culminated in the decree being signed.

The Forest Service was granted 303 water rights for instream flows with a 1999 priority date. All existing water rights which were in the forest were protected by individual terms and conditions contained in the decree. The Division of Water Resources staff in Division III were heavily involved in the location, quantification and coordination of the existing water rights and the Quantification Points claimed by the Service. It took several years of mapping, field checks, reviewing methodology and output, and refining terms and conditions, for the parties to be able to agree on the proper amounts of water to be contained in the decree and eliminate conflicts with existing water rights to the satisfaction of all.

A number of people are to be congratulated for a tremendous effort in achieving this decree and saving virtually millions of dollars and years of time by not having to litigate this case. This particular settlement was specific to the circumstances in Division III, but it is hoped that certain principles and concepts involved in this case can be used as the basis for settlement in other basins.

"Water and Growth in the West"

The twenty-first annual summer conference of the Natural Resources Law Center at the University of Colorado-Boulder will focus on Water and Growth in the West. The event, scheduled for June 7-9, will cover a breadth of issues. For more information, contact the Natural Resources Law Center: (303) 492-1272; nrlc@colorado.edu; www.colorado.edu/Law/NRLC/.

Using Technology to Administer Water Rights in Colorado

Ray R. Bennett, Project Manager of CDSS (Colorado's Decision Support Systems), DWR
and Steve Malers, Lead Software Developer of CDSS, Riverside Technology, Inc.

To meet the challenge of administering water with a limited staff and increasingly complex administrative and operational demands, Colorado has developed the Colorado Water Rights Administration Tool (CWRAT). CWRAT builds on existing and newly developed technologies to create a water right administration system that facilitates decision-making, record keeping and data sharing. As shown in **Figure 1**, major components of the system include:

- CWRAT, the Colorado Water Right Administration Tool
- a central database called HydroBase
- real time streamflow, diversion and reservoir measurements available via Satellite
- user supplied data via Email
- observed data provided by a water commissioner
- reports distributed via the Internet

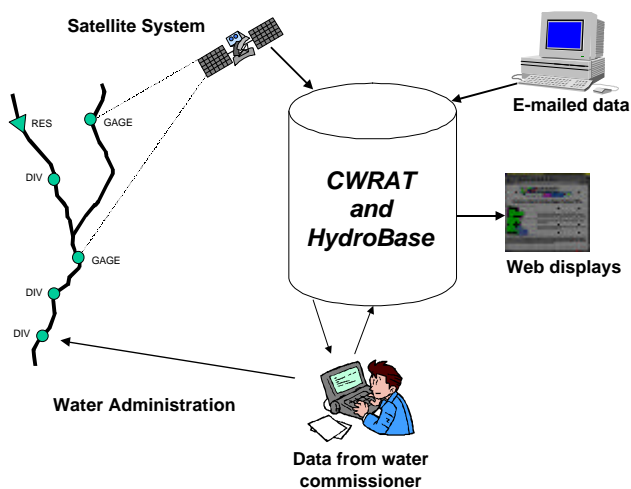


Figure 1. CWRAT Information System

Background

Water is administered in Colorado according to the prior appropriation doctrine; first in time is first in right. One acquires a right to water by diverting it from its natural source and applying it to some beneficial use or by maintaining an instream beneficial use such as the minimum stream flow

rights held by the Colorado Water Conservation Board. The right to appropriate water is a right to use water, not a right to speculate for profit. Perfection of a right requires a court decree that adjudicates a pre-existing beneficial use or the intent to use. Continued beneficial use of the water or diligence to develop the water is required to maintain the right.

The water commissioner, an employee of the Office of the State Engineer, plays an indispensable role in the administration and distribution of water. Simply put, they evaluate the water supply and, with a working knowledge of return flows and natural gains and losses, evaluate a water right priority list to determine who can and cannot divert water on a given day. Over time, the water commissioner's job has become increasingly complex because of increased demands for water resources and interactions between users. Examples of complex administrative duties include:

1. Determination of reservoir releases, which use the natural stream for distribution and must be, routed past direct flow rights in order to deliver the reservoir water to the appropriate user.
2. Augmentation plans that allow a new "junior" water right to divert while protecting existing "senior" water rights.
3. Interstate compact obligations that must be satisfied.

In a metropolitan area such as Denver, many combinations of administrative activities can occur simultaneously within one, relatively small, river reach. Proper administration and communication of daily water administrative decisions is essential to efficiently use the resource and provide assurance to water users that the resource is being administered according to the law.

Colorado Water Right Administration Tool

To meet these ever increasing challenges, the Office of the State Engineer, in cooperation with local water users, developed the South Platte Water Rights Management System to help administer water on the

Eastern Plains including the Denver metropolitan area. Based on the success of that system and funding provided by the Colorado Water Conservation Board, the system has been enhanced and is currently applied to over 50% of the state. With the increased functionality and geographic application, the system was renamed the Colorado Water Right Administration Tool (CWRAT). It currently contains the following major features:

- displays real-time data from the State of Colorado's Satellite Monitoring System
- displays administrative data such as water rights, diversion and reservoir structure information, and call records
- displays historic data such as streamflow, water rights, diversions, and reservoir levels
- provides tools to create, edit and use a Water Information Sheet (WIS) that performs water accounting
- provides tools to archive and share administrative data between water users
- can run stand-alone or using the Internet

Some or all of the above features are appropriate for application on a river depending on the complexity of water use and level of public involvement. For brevity, the remainder of this article focuses on the water information sheet, the heart of CWRAT.

The water information sheet, **Figure 2**, is a specialized spreadsheet that describes the water supply (inflow) and use (outflow) in a stream system in order to simplify administrative decisions. The administrative points at which an inflow or outflow is applied can be any point on the river but typically represent the stream gages, diversions, reservoirs, instream flows, and tributary confluences that physically exist on a stream reach. The sheet performs simple arithmetic between two known point flows, typically stream gages, to calculate the point flow at each structure by subtracting diversions, adding reservoir releases and accounting for natural gains and losses. The point flow is separated into the natural flow that must be administered by the prior appropriation doctrine and delivery flow that must be shepherded downstream to a reservoir owner. Variations on this standard example allow the water information sheet to accommodate headwater reaches and zero flow conditions.

Row Label	Point Flow	Natural Flow	Delivery Flow	Gain Loss	Releases	Priority Diversion	Del Div
South Platte River							
PLAHERCO	873.0	873.0	0.0	0.0			
EMPIRE DITCH	908.1	908.1	0.0	35.1			
Crow Creek	963.2	963.2	0.0	35.1			
RIVERSIDE CANAL	998.3	998.3	0.0	35.1		0.0	
ILLINOIS DITCH	1017.3	1017.3	0.0	35.1		16.0	
EIJOU CANAL	919.4	919.4	0.0	35.1		133.0	
POTNAM DITCH	954.5	954.5	0.0	35.1			
CORONA RANCH DITCH	986.6	986.6	0.0	35.1		3.0	
JACKSON LAKE INLET DITCH	1021.7	1021.7	0.0	35.1			
WELDON VALLEY DITCH	927.8	927.8	0.0	35.1		129.0	
Jackson Lake Outlet	962.8	962.8	0.0	35.1			
FT MORGAN CANAL	751.9	751.9	0.0	35.1		246.0	
PLAHERCO	787.0	787.0	0.0	35.1			
Weldon Valley Return	750.0	708.0	42.0	-79.0	42.0		
Bijou Creek	677.0	635.0	42.0	-79.0			
DUEL SNYDER CANAL	598.0	556.0	42.0	-79.0			

Figure 2. CWRAT Water Information Sheet

The power of the CWRAT water information sheet is fourfold:

1. The point flow and gain loss columns provide daily quality assurance. A misplaced decimal point quickly shows up as an unreasonable point flow or gain calculation.
2. Tools are being developed that will allow entered data to flow directly into "official diversion" records. This functionality will eliminate the laborious task of interpreting a field book months later during the less demanding winter season.
3. Very little data entry is required. This occurs because real time stream flow measurements are automatically entered into the spreadsheet from the observations collected by the Satellite Monitoring System. Also, because today's activities on a stream are typically a variation on what occurred yesterday, the sheet carries forward yesterday's values. Finally, a water user that may be operating one or many reservoirs to serve direct flow, exchange and augmentation needs can submit data via Email, which automatically flows into the spreadsheet.
4. Once data are entered and archived back to the central server, it is available via reports over the Internet for any interested water user or administrator. Consequently, water users and managers can view administrative decisions and gain an understanding of why decisions were made.

Conclusion

In summary, Colorado has developed the Colorado Water Right Administration Tool to meet the ever-increasing challenges facing water administrators. Currently in use for the complex, over-appropriated South Platte basin, the tool has been expanded to include the entire western slope while long-range plans expect the system to include the entire state.

In combination with other existing technologies, specifically the Satellite Monitoring System and the Internet, the administration tool allows the complicated decisions implemented by water commissioners to be documented, checked, and shared with other water users and managers. Through this system, better use and management of our most precious resource, water, is possible now and into the future.

Out of Hot Water

Ken Beegles, Division Engineer, Division 7

Dating from 1981, when the Town of Pagosa Springs drilled two geothermal test wells under a Department of Energy Grant, but without a well permit, much controversy and struggle has been experienced in Water District 29 of Division 7 in attempting to share the much coveted resource with users in that town.

There are approximately 20 geothermal wells used and decreed for a total of about 45 cfs. They are owned individually. When the Town drilled the new test wells with a capacity of producing 1,200 to 1,800 gpm, other private users and the Division of Water Resources became alarmed that the draft would impact those heating, recreational and commercial values.

In Case 89CW19, the Town filed for changes of water rights to their new wells. These were bitterly contested and although the Division Engineer brought the parties together to negotiate a solution, the meetings were emotionally charged with very little real progress achieved in moving the discussions forward. By 1999, however, many of the parties had changed or left for different reasons.

Several years of limited production by the Town had demonstrated that the removal of water from the new wells did not seriously harm others but allowed most historic uses (less than 3.0 cfs total) to continue. The major objectors did not compromise much but, due to discussions, some of the old unused wells in the area were plugged, a footbridge was built to take water across the stream for reuse, and several measuring devices were installed.

In the last two months, finally the Town withdrew its request to transfer the water rights. They will not supply the objectors with more water, but will abandon some of the rights which they currently hold, and also continue to use the limited amount of well production for heating of a large part of the downtown area.

The Division 7 Office is relieved that it was not necessary to bring the matter to trial before the Water Court and a mutually acceptable arrangement of use which everyone benefits from has been agreed upon.

Water Commissioners Assigned New Areas Of Responsibility

The Division Engineer for Division 6, Robert Plaska, has realigned the responsibilities for the Water Commissioners in North Park. Effective immediately, Sue Petersmann will have primary responsibility for the Michigan, Illinois and Big Grizzly drainage. Kincaid Waldron will be responsible for the remainder of the basin, including the Little Grizzly, Canadian, North Fork, Roaring Fork and North Platte. Water users are urged to contact the appropriate commissioner depending on where your water rights are located. Sue Petersmann has a new phone number and can be reached at (970) 723-4761. Kincaid Waldron can be reached at (970) 723-4502. It is hoped that this realignment will result in increased efficiency to the water users in the area.

Well Location Program

Dick Stenzel, Division Engineer, Division 1

For the third year in a row, Division 1 was active in hiring college students on staff as interns to help with our well location program, both in collecting field information and in collecting background information on decrees, permits, etc. prior to and after going to the field. In 1999, three college students were hired using money available from the Ground Water Management Fund and reallocation of part-time staffing authorities. In addition, deputy commissioners were brought into the Greeley office during the past winter to help with collecting background information and to input data collected during the previous summer. This allows Division 1 to pursue the well location program more aggressively.

This project began in former Water District No. 2 near the City of Brighton during the 1997 irrigation season. In addition to continued efforts in District 2, the program expanded to include former Water District 64 and District 65 during 1998. Currently, 1,050 wells in District 2, 690 wells in District 64, and 70 wells in District 65 have been located to a five-meter accuracy level using the GPS units since this program began. Division 1 expects to continue in an organized manner on a section by section basis until all wells have been located within the Division. It is currently projected that the completion of the entire project will take another thirteen years given that there are approximately 9,500 non-exempt wells in the Division.

The activities in Districts 2 identified 62 wells that were not being augmented at the time of inspection. Since then, most users have been able to get their wells in a plan for augmentation or

substitute supply plan. There are only 12 people remaining who have not been added to an existing plan for augmentation or substitute supply plan. Letters have been sent to the well owners who are found to be pumping wells illegally and Cease and Desist orders will be issued this year to those who cannot provide proof of being part of an augmentation plan.



There are approximately 350 to 400 wells that will place on the upcoming abandonment list. Approximately 100 wells were found that need to be capped properly. In addition, many wells have been found to be incorrectly located. The water commissioners and the Division 1 office are contacting the well owners. In District 65, GPS equipment was used to locate Republican River Compact wells and tagged the wells that were located. We plan to finish the compact well location effort in District 65 during 2000.

Human Resources

New Employees...

Bret Norby started on March 8, 2000, as a Professional Engineer in the Division 7 Office in Durango, Colorado. He will be the Dam Safety Engineer and responsible for the dam safety programs in Divisions 3 and 7. Brett brings 15 years of engineering experience from the Colorado Department of Transportation in Denver.

Nanci Kelly started on April 3, 2000, in the Information Technology Branch. She is an IT Professional II and her duties include computer programming, web site maintenance and the satellite monitoring system. Her previous work experience included two years at the Department of Revenue.

Mark Trivisonno transferred from the Division 2 Office in Pueblo to Denver on March 20, 2000. He is an Engineering Technician II and will be responsible for evaluating and issuing well permits for the Denver Basin.

Arlene Stewart transferred to the Denver Office on April 10, 2000 from the Division 1 Office in Greeley. She is an Administrative Assistant II and is responsible for data entry and processing well permits, well completion reports, monitoring hole applications and Statements of Beneficial Use.

Calendar of Events

- May 5** Costilla Creek Compact Meeting, Alamosa, CO; for more information, contact Jerri Baker at 719.589.6683
- May 19** Colorado Ground Water Commission Meeting, Denver, CO; for more information, contact Marta Ahrens at 303.866.3581
- May 22-23** Colorado Water Conservation Board Meeting, Alamosa, CO; for more information, contact Susan Maul at 303.866-3441
- June 6** Board of Examiners of Water Well Construction and Pump Installation Contractors, Denver, CO; for more information, contact Gina Antonio at 303.866.3581
- July 24-25** Colorado Water Conservation Board Meeting, Alamosa, CO; for more information, contact Susan Maul at 303.866-3441