



2012 DWR Annual Report

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FORWARD

By Dick Wolfe, State Engineer

I am pleased to present this report as a summary of the annual operations of the Division of Water Resources (DWR) including the purpose and activities of each section within our agency. I want to take this opportunity to thank my excellent staff for the exemplary work that they do. The attached report is a reflection of that outstanding work. Despite reduced budgets and an increasing workload, my staff continues to provide excellent customer service. Their dedication to serving the public exemplifies their professionalism and personal sacrifices they make every day of the year.

The last two years are a reminder of how quickly we can go from extreme runoff in one year (2011) to extreme low runoff the next year in 2012. This may be a sign of times to come as we face mounting challenges with climate variability. Yet despite these rapidly changing conditions from one year to the next our people have risen to the challenge once again. I remain, as well as our whole Division, committed and engaged with those we serve to ensure we are collectively positioned to respond to the many challenges we face.

Over the past year we have modified our performance objectives in accordance with the SMART Act to better reflect our core areas of water administration, dam safety and well inspections. The effectiveness of our agency depends on the successful execution of key objectives and performance measures with defined outcomes and outputs. We are able to accomplish these through clearly defined and executed work processes with the support of several dozen models and applications ranging from scientific, financial, personnel, design review, inspections, data collection and management, and enforcement.

Each of our Division office staff attends many public meetings to assist and advise various stakeholders on a variety of water issues. We further these efforts through effective use of advisory committees in developing rules and policies. These processes demonstrate a real willingness to listen to our constituents and bring stakeholders together to develop solutions to complex situations. We will continue to involve appropriate stakeholders in our decision-making process of water management in the State.

In addition to the many public activities, our agency actively participates with several other State agencies particularly those within the Department of Natural Resources in addressing complex water issues. This successful collaboration will be vitally important as we embark on the development and implementation of the Colorado Water Plan. This vision caps many years of activities by the Interbasin Compact Committee (IBCC), Colorado Water Conservation Board (CWCB), Basin Roundtables and others that must now be executed by a clearly defined mission. We must deploy our limited resources in an effective way to ensure we create a sustainable water future for our generation and those that follow. The Division of Water Resources is ready and positioned to achieve this mission with pride.

WATER SUPPLY BRANCH

The water supply branch provides the following services for the taxpayers of the state:

- Analyze and approve Substitute Water Supply Plans (SWSPs);
- Review, analyze, and provide comments to Colorado counties regarding the water supply for proposed subdivisions;
- Perform well permitting and the associated analysis;
- Serve as technical staff for the Colorado Ground Water Commission;
- Manage DWR's involvement with litigation in the water court process, including providing expert witness testimony. Coordinate activities with the staff of the seven water divisions, the seven water courts, opposing parties, counsel and consultants, and DWR's legal counsel from the Colorado Attorney General's Office;
- Conduct engineering and technical analyses to support all facets of water resource engineering, planning, and administration; and
- Provide water resources training and education to attorneys, consulting engineers, federal, state, or county officials, school children and water users through a variety of formal and informal presentations.

Substitute Water Supply Plans - 2012		Subdivision Reviews - 2012		Designated Ground Water Basins & Colorado Ground Water Commission – 2012			
General Plans	Gravel Pits	Subdivision Referrals	County Planning Office Referrals	Final Permits	Determinations of Water Rights	Change Applications	Replacement Plans
254	107	122	234	306	263	32	4

Special Projects

- Answered numerous questions from the public that were submitted through “AskDWR” on the website;
- Presented information on water rights to various groups of real estate agents and appraisers, well contractors, and governmental agencies;
- Assisted the division offices with enforcement efforts;
- Continued working with oil and gas operators to maintain their compliance with administration and well permitting requirements.

HYDROGEOLOGICAL SERVICES

The Hydrogeological Services Branch provides expertise in the disciplines of geology, hydrogeology, engineering geology, geophysics, well construction, and well testing. The team:

- Supports the engineering sections in ground water hearings and litigation;

- Supports staff in nontributary petitions and water court filings by reviewing and determining hydrogeological basis for nontributary ground water claims;
- Provides technical assistance to the Board of Examiners of Water Well Construction and Pump Installation Contractors (Board of Examiners);
- Provides technical assistance to the Colorado Ground Water Commission;
- Performs ground-water monitoring activities and reports on ground-water level data for Colorado aquifers; and,
- Responds to requests for assistance in general investigations by internal and external customers.

The table below summarizes the regular, daily work completed by Hydrogeological Services in 2012.

Hydrogeological Services – 2012 Summary of Work

Service Provided	Count
Well construction variance requests reviewed	140
Geophysical logs evaluated	28
Geophysical log waivers reviewed	119
Oil and Gas injection and cathodic protection well proposals reviewed	29
Nontributary Initial Determinations	5
Well permit evaluation consultations	215
Water levels measured	1,187
Phone contacts and general evaluations	573
Well Inspections	1,276
Water well information – well construction /pump installation report review and data entry	5,776

High Ground Water Levels

In 2012, DWR utilizing members of Hydrogeological Services embarked on data gathering efforts to help determine the causes of high groundwater levels near the South Platte River towns of Sterling, Gilcrest, and LaSalle. High ground water can be caused by several factors including natural recharge

(precipitation), induced recharge (e.g. ditches, canals, ponds), reduced discharge (wells), the geologic framework, etc. Therefore geologic, precipitation, and water diversion data



are being compiled in the affected areas with the assistance of Division 1 staff and the Colorado Geological Survey to help decipher the potential causes of high groundwater in the South Platte alluvium. The Colorado Water Conservation Board is funding the work.

Information and data on the Sterling and Gilcrest-LaSalle High Ground Water Project areas are located on the Division 1 website at the following links:

- <http://water.state.co.us/DivisionsOffices/Div1SPlatteRiverBasin/Pages/GroundwaterSterling.aspx>
- <http://water.state.co.us/DivisionsOffices/Div1SPlatteRiverBasin/Pages/GilcrestLaSalleGroundwaterPilotProject.aspx>

Groundwater Level Monitoring Program

Hydrogeological Services collected annual water level data from wells covering approximately 75% of the state. The following summarizes the number of water level measurements taken in various areas of the state:

- Denver Basin = 233 (includes cooperator provided data)
- Designated Basins:
 - Northern High Plains = 683 (measured by Northern High Plains staff)
 - Southern High Plains = 88 (measured by Southern High Plains staff)
 - Upper Black Squirrel Creek = 30
 - North Kiowa-Bijou = 31
 - Camp Creek = 8
 - Lost Creek = 25
 - Upper Big Sandy = 31
- Western Slope = 58



Denver Basin

Hydrogeological Services continues to evaluate geophysical logs and act on requests for geophysical log waivers in the Denver Basin. Aquifer tops and bottoms are determined for all geophysically logged wells and added to the Geotech Editor database. These data are helping to refine stratigraphic interpretations for the administratively defined Denver Basin aquifers. Digital files (.tiff and .las) are now being archived as well as paper originals of the logs. This will assist any future studies of basin stratigraphy with log files that can be used in computer programs.

Geothermal Wells

Staff provides advice for geothermal and exploratory well applications and geothermal well construction. A total of 65 geothermal permits were issued during 2012, which is down from 92 permits issued the previous year.

Board of Examiners (BOE)

The Branch serves the Board members and staff with expertise and management of BOE matters. Staff also works with the Well Inspection Program that monitors well construction and pump installation activities in Colorado and receives complaints and performs investigations for the BOE.

- Sixteen (16) new complaints were investigated in 2012 and 20 complaints were resolved; with 5 of those resolved extending back to previous years.
- Technical Working Group – Staff participate in meetings held quarterly with representatives of the Colorado Water Well Contractors Association, the Colorado Ground Water Association, and interested consultants. The group discusses technical issues in well drilling and pump installation practice, including new techniques and equipment. Impacts of existing BOE rules and potentially desired changes to professional practice and rules sometimes arise and are discussed in a collegial manner.
- The Board has 229 licensed contractors, 8 fewer than 2011.
- Hydrogeological Services processed 140 requests for variance from the well construction rules during the year.

HYDROGRAPHIC AND SATELLITE MONITORING BRANCH

The primary mission of the DWR Hydrographic and Satellite Monitoring Branch is to collect, analyze, and present accurate, high quality ‘real time’ flow and contents data in Colorado rivers, streams, creeks, canals, ditches and reservoirs to support the water rights administration mission of DWR. Hydrographers in each Division office around the State operate and maintain a system of over 530 gaging stations on these watercourses and water bodies; perform streamflow measurements to maintain stage-discharge relationships at gaging stations; and maintain satellite monitoring equipment with goals of improving the quantity and quality of data used to manage and administer water throughout the State of Colorado. The Branch develops historic streamflow records at a subset of stream gage locations in coordination with other State and federal entities and the water user community.

Gaging Station and Hydrographic Operations

Staff maintains gage and satellite equipment, conduct regular measurement and rating update activities on hundreds of gages throughout the state. Real-time stream flow data assist the water commissioner and water users of the state in assuring the prior appropriation system operates as required under the law



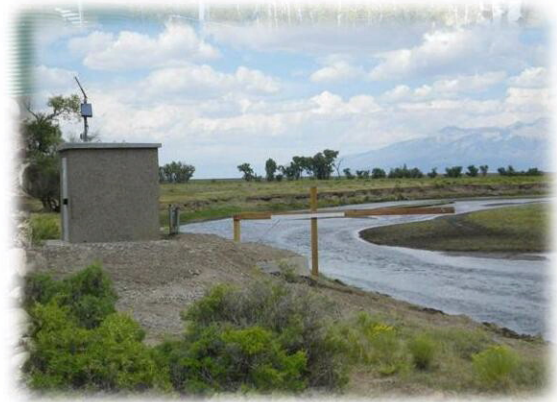
Streamflow Records

The Hydrographic Branch prepared a total of 244 streamflow records for publication in the DWR Annual Streamflow Publication for Water Year 2012 (WY 2012) (Table 1). Of these, 11 records (from 17 gages total) were published by the USGS Colorado Water Science Center in their annual streamflow data report for WY 2012, and the New Mexico office of the USGS published four. Divisions 1, 2, and 3 perform record development, checking, correction and final review within their respective Divisions. In Divisions 4, 5, 6 and 7 record checking and review is conducted among those Division offices.

Table 1. Streamflow records for WY 2012.

Division 1	Division 2	Division 3	Division 4	Division 5	Division 6	Division 7
77	47	64	9	14	9	24

A total of 63 WY 2011 streamflow records (26% of those prepared for publication) underwent a quality assurance/quality control review. Fifteen were reviewed by the USGS and 48 were reviewed by the DWR Lead Hydrographers and the Chief Hydrographer.



Discharge Measurements

Hydrographers and water commissioners across the State made 3,867 measurements in 2012 in streams, rivers, canals and ditches (Table 2). These measurements were made to calibrate stage-discharge relationships at streamgaging stations, in canals and ditches in support of real-time water administration decision-making and in support of historic streamflow record development.

Table 2. Discharge measurements made in 2012.

Division 1	Division 2	Division 3	Division 4	Division 5	Division 6	Division 7
1221	770	1045	185	191	98	357

Hydrographic Tools

The DWR State of Colorado Surface Water Conditions website: <http://www.dwr.state.co.us/SurfaceWater/default.aspx> continued in operation during 2012 with personnel ensuring the day-to-day management of the retrieval, decoding, processing, posting, and archival of all data collected on the DWR computer-based satellite monitoring system. This includes adding new gages, changing decoding based on DCP upgrades and/or sensor upgrades/additions, retrieval of data from outside data providers (e.g., USGS, NCWCD, UAWCD).

Personnel continued the development of the Colorado Hydrologic (Data) Management System (CoHMS) during of 2012. CoHMS is a standalone desktop application that is comprised of a suite of tools addressing the primary computer-based data collection, analysis, and presentation activities of the Hydrographic Branch. It includes five modules: 1) gaging station management; 2) discharge measurement management and shift analysis; 3) stage-discharge relationship and stage-shift relationship management, evaluation and maintenance; 4) streamflow records computation and analyses; and, 5) streamflow data reporting.

New Gaging Stations

Twenty-two new gaging stations were added to the satellite monitoring system in 2012. Typically new gages are added as the result of the identification of a critical water administration need. Existing gaging stations, not previously on the SMS, are also often candidates for adding satellite equipment where water administration needs have increased. Gage cooperators pay the capital costs associated with these new or upgraded stations. Annual maintenance agreements with cooperators on these gages are also developed.

Satellite Monitoring Equipment Upgrades and Gage Refurbishment Projects

Satellite monitoring equipment maintenance is focused on replacing older 8210 and Satlink 1 DCPs with new Satlink 2 DCPs. All new Satlink 2 DCPs are equipped with version 2 (or narrow band protocol) GOES transmitters. Approximately 50 DCPs are replaced annually assuming the equipment has about a 10 year life. This annual replacement rate represents about 10-12% of the current SM network each year.

The Hydrographic Branch continues to refurbish and maintain existing streamgages. Gage maintenance and refurbishment funds amounting to \$55,000 were received from CWCBC for this purpose. These funds along with a portion of General Fund appropriations were used to carry out several refurbishment projects.

Alert System

The DWR Flow Alert System compares measured data (gage height, discharge, or any other parameter) from remote gaging sites against alert criteria (threshold values) set up by DWR/CWCBC users. Alert criteria choices include high flow alarm, low flow alarm, or rate of change alarm. The system can be configured by user preferences to contact the user of a current alarm via e-mail or phone. There are currently over 50 users with 425 different alert criteria programmed.

Coordination with Federal, State and Local Agencies

Hydrographic staff coordinate multiple activities with the USBR, including stream gage operation and maintenance on the Colorado Big Thompson Project (Div 1 and Div 5), the Fryingpan-Arkansas Project (Div 2 and Div 5), the Closed Basin Project (Div 3), and the San Juan-Chama Project (Div 7), and gages in the Colorado River Basin (Div 4, 5).

DWR hydrographic and water commissioner staff continued to conduct snow surveys around the State in support of the NRCS (Natural Resource Conservation Service) and

other agencies. The sites generally are surveyed the last day of each month from January through April. The data are collected and disseminated by NRCS and published on their website for water users. Staff currently measure 16 sites across the State.

DAM SAFETY BRANCH

The mission of the Dam Safety Branch is to prevent the loss of life and property damage and protect against the loss of water supplies due to the failure of dams in Colorado. The Dam Safety Branch accomplishes that mission through review/approval/disapproval of plans and specifications for new dams and or alterations, modification and repairs of existing dams, dam inspections and enforcement orders.

In WY 2012 the Branch received a total of 49 sets of plans and specifications for a combination of new dams, repairs, alterations and modifications to dams. The total dollar value of the submitted plans was \$22,356,806. During the same period 62 reviews resulted in approval for construction, 60 projects started construction, 53 projects completed construction and 64 projects were awarded final acceptance.

The Branch developed updated standards for design review memoranda and initiated a new peer review and collaborative design review process. The newly initiated process of collaboration and teaming is exemplified at the largest new dam construction project in the State, Long Hollow Dam in La Plata County near Durango. Dam safety led the design review efforts for the project and is now leading the construction inspection activities.

Dam inspections encompass periodic inspections to determine dam conditions and to set safe storage levels. Inspections are also performed as part of on-going construction projects, outlet works and interim inspections.

In WY 2012 engineers within the Branch performed 538 dam inspections. Dams inspected included 237 high hazard, 137 significant hazard, 161 low hazard, and 3 no public hazard dams. Monthly reports provided by dam safety engineers indicate other inspections were completed; 15 interim, 249 construction, 165 follow up, 29 outlet works, 5 federal dam, 14 illegal dams and 61 other types of inspections were also performed for a total of 1,076 total dam safety inspections.

Enforcement activities, usually in the form of storage restrictions, fall into four categories: (1) Restrictions imposed, (2) Restrictions modified, (3) Restrictions lifted, and (4) Breach orders. At the end of WY 2012, a total of 157 dams remained on the dam safety restricted storage list amounting to 68,590 acre-feet of restricted storage statewide.

In WY 2012, nine new storage restrictions were imposed (1,337 ac-ft of storage lost), two restrictions were modified (23 ac-ft storage lost) and 18 restrictions were lifted (1,089 ac-ft of storage returned to full use). The total activity resulted in a net loss of 271 acre-feet of storage statewide. No breach orders were issued in this period.

In WY 2012 the largest historic storage restriction in the state at Cucharas #5 dam was removed when the dam owner excavated the spillway down to the restricted level. This was the result of actions detailed in a “Compliance Plan” order, an innovative agreement developed by the dam safety engineer, dam owner and the State Engineer. This action removed 33,000 acre-feet of storage from the restricted storage quantity, but it does not result in returning any storage to use since the reservoir now has that much less storage. The action does significantly reduce the dam safety risk to the downstream public.

No jurisdictional dam failures occurred in Colorado in WY 2012 but 14 dam safety incidents were logged. Dam safety incidents are defined as situations at dams that require an immediate response by dam safety engineers. The response is typically a site visit and actions based on the situation up to and including the activation of a dam’s Emergency Action Plan (EAP). Incidents occurred at seven high hazard dams and included unusual seepage, embankment settlement and excessive upstream slope damage from wave action. Incidents also were associated with the large and damaging wildfires that occurred, particularly the High Park fire and the Waldo Canyon fire. These fires were tracked to ensure no damage would occur on dams within or near the fire areas. No EAP’s were activated for any of the WY 2012 incidents.

MODELING AND DECISION SUPPORT SYSTEMS BRANCH

In today’s complex water rights environment, modeling and decision support systems play a crucial role in assisting water managers make the decisions necessary to optimize water use within Colorado’s appropriation system. The Division’s Modeling and Decision Support Systems (Modeling/DSS) branch provides much needed technical expertise to the State of Colorado and its water users through the rigorous development, analysis and review of hydrological modeled systems and in concert with the CWCB, protects Colorado’s water users by allowing decision makers to use these systems to make informed decisions regarding use and administration.

Rio Grande Decision Support System (RGDSS)

Staff finalized Phase 6P35 version of the model which was used in the Special Improvement Subdistrict No. 1 of the Rio Grande Water Conservation District, Annual Replacement Plan (ARP), 2012 Plan Year. The 2012 ARP was challenged and defended in Water Court during October 2012.

Modeling/DSS staff continued to coordinate with the RGDSS peer review team and focused on the following refinements of the groundwater model:

- Extended the modeling study period through 2010;
- Incorporated the 2009 and 2010 irrigated acreage assessments;
- Incorporated 2009 and 2010 well meter data into the groundwater model including extensive analysis and calibration;
- Developed modeling processes to use remotely sensed satellite data to quantify shortages in supplied water requirements and refine historic pumping estimates; and,

- Researched and revised the geology, and subsequently the water budget within the Costilla Plan area.

South Platte Decision Support (SPDSS)

This model simulates groundwater flow in the alluvial aquifer located below Chatfield Reservoir to the Stateline from 1950 to 2006. The model and documentation is complete and available on the public Colorado Decision Support System website. In addition, a preliminary application was completed of the state's surface water model to the Lower South Platte from Kersey to the Stateline. Four more sub-basin surface water planning models will be developed and combined into the final South Platte River Basin model. The sub-basins left to model are: Denver Metro, Boulder Creek, St. Vrain River, and Big Thompson River.

Arkansas River Basin Support

Since the *Kansas v. Colorado* Supreme Court litigation was completed in 2009, Colorado has proceeded with the implementation of the final judgment and decree in the case to ensure compliance with the Arkansas River Compact. This includes the annual update of data used in the Hydrologic-Institutional (H-I) Model and determination of annual compact compliance. Staff also evaluated presumptive depletion factors using H-I Model results that were approved by Kansas.

Staff also provided technical assistance to Division 2 staff on several Arkansas River Basin projects including:

- Actively participated as member of Arkansas lease/fallow administration tool technical committee in the evaluation of aquifer properties in the Colorado State University groundwater model and development of consumptive use modeling for lease/fallow tool;
- Revised and updated Irrigation System Analysis Model (ISAM) spreadsheets for review by experts on the Surface Water Irrigation Improvement Rules Notification List; and,
- Developed draft software tools to manage Surface Water Irrigation Improvement Rule 10 ISAM operational evaluations and verify ISAM processes using HI model data and results.

Geographic Information Systems (GIS)

The DWR GIS continues to support the Dam Safety Branch, Modeling/DSS staff and DWR in general with GIS data development and analysis. Specific GIS work completed during 2012 included:

- Stewardship activities for the National Hydrography Dataset (NHD);
- Auditing oil and gas wells statewide to determine compliance with Produced Water Rules and Regulations finding over 300 out of compliance wells;
- Producing irrigated land datasets for

- North Platte River Basin – 2012 dataset produced for compact compliance;
- Rio Grande Basin – 2011 dataset produced for the RGDSS modeling efforts; and
- Arkansas River Basin - digitized all irrigated lands outside of H-I Model boundary, and researched irrigation wells by county and digitized their decreed/permitted irrigated lands;
- Assisting Division staff in using satellite imagery analysis to verify water usage for water rights cases; and,
- Working with Dam Safety staff to develop geodatabase to track Emergency Action Plans and associated GIS data.

Alluvial Aquifer Accretions/Depletions Analysis Tool (AAADAT)

Work began on development of this tool which is financed through a \$200,000 grant from the CWCBC. This tool will provide DWR water commissioners with the ability to determine whether depletions are being adequately replaced by accretions. It will also enable the DWR water commissioner to quickly assess any claims regarding the right to divert “excess” accretions, as some recharge plans have the decreed right to use such accretions.

LITIGATION

The following table indicates the number of water court applications filed in 2012 and formal Statements of Opposition (including Motions to Intervene) filed on behalf of DWR:

2012 Court Applications and Interventions

Division	Applications and Amendments	Statements of Opposition and Interventions	Percent Opposed
1	306	12	3.9 %
2	127	4	3.1 %
3	48	5	10.4 %
4	163	0	0 %
5	193	2	1.03%
6	110	1	0.9%
7	65	1	1.5 %
Total	1012	25	2.47 %

Long Term Trends in Water Court Applications

Div	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Average
1	527	468	394	350	388	239	225	320	298	306	352
2	119	148	113	138	146	123	150	99	96	127	126
3	60	41	25	36	63	27	34	39	24	48	44
4	345	236	314	280	235	79	190	211	169	163	222
5	443	345	362	319	295	206	196	278	201	193	284
6	132	67	83	99	135	37	75	80	48	110	87
7	129	118	108	140	115	94	97	100	84	65	105
Total	1755	1423	1399	1362	1377	805	967	1127	920	1012	1215

Significant Cases

No. 10SA393 – Reynolds v. Cotten: Plaintiff-ditch owners diverting water from La Jara Creek appealed directly to the Colorado Supreme Court from an order of the water court denying their claim for declaratory relief. The plaintiff-ditch owners sought a declaration to the effect that their appropriative rights to La Jara Creek water were not limited to water flowing into the Creek from the San Luis Valley Drain Ditch. Without directly addressing the merits of their claim, the water court granted summary judgment in favor of the State and Division Engineers, and other defendants, on the grounds that substantially the same issue had already been litigated and decided against the plaintiff-ditch owners in a prior declaratory judgment action involving the same parties or their predecessors in interest. More particularly, the water court concluded that all of the water rights of the parties in La Jara Creek were not only at issue but were in fact finally determined in the prior litigation, and therefore, the plaintiff-ditch owners' current claim of entitlement to non-drain native La Jara Creek water had been implicitly resolved against them in the judgment concluding that litigation. The Colorado Supreme Court found that the plaintiff-ditch owners' entitlement to non-drain native La Jara Creek water was not actually determined in the prior litigation, either expressly or by necessary implication. Therefore, the Court reversed the summary judgment of the water court and remanded the case for further proceedings.

No. 11SA136, Thorsteinson v. Simpson & No. 11SA54, Harrison v. St. Charles Mesa Water Dist.: Harrison directly appealed adverse rulings of the Water Court for Water Division No. 2 in two separate cases to the Colorado Supreme Court. With regard to Harrison's Application for a Change of Water Right, the water court granted the Engineers' motion to dismiss at the close of Harrison's case, finding that he was required, but failed, to establish the historic use of the right as to which he sought a change in the point of diversion. With regard to Harrison's protest to the inclusion of the interests he claimed in the Mexican Ditch on the Division Engineer's decennial abandonment list, the Water Court granted the Engineer's motion for abandonment, as a stipulated remedy for Harrison's failure to succeed in his change application. The Colorado Supreme Court

held that because Harrison neither proved historic use of the right for which he sought a change nor was excepted from the requirement that he do so as a precondition of changing its point of diversion; and because denying a change of water right for failing to prove the historic use of the right does not amount to an unconstitutional taking of property, the Water Court's dismissal of Harrison's application was affirmed. The Colorado Supreme Court also held that because Harrison did not stipulate to an order of abandonment as the consequence of failing to succeed in his change application, but only as the consequence of failing to timely file an application reflecting historic use, a condition with which he complied, the Water Court's order granting the Engineers' motion for abandonment was reversed.

ABANDONMENT

The table below depicts the number of water rights, by water division, placed on the 2011 revised abandonment list as required pursuant to section 37-92-402, C.R.S. The number of protests filed with the water court for each division is also included.

Division	Water Rights on Revised AL	Protests
1	1257	34
2	326	28
3	192	18
4	105	3
5	75	7
6	209	29
7	130	0
Total	2294	119

INTERSTATE COMPACTS

Republican River Compact

Numerous actions have been taken by the Colorado State Engineer in the Republican River Basin during 2012 to assist Colorado in achieving compliance with her obligations in relation to the Republican River Compact. Principally, Colorado and the Republican River Water Conservation District (RRWCD) formally proposed the idea to the State of Kansas and Nebraska of a Colorado Compliance Pipeline (CCP). This pipeline would pump water to the Republican River near the Colorado Stateline to assist in compact deliveries. In 2009, Colorado twice presented resolutions to the Republican River Compact Administration (RRCA) to accept Colorado's augmentation plan including the CCP and augmentation accounting. The Colorado State Engineer participated in an arbitration hearing on the CCP in July 2010. In October of 2010, an Arbitrator found that Kansas was not un-reasonable in its denial of the resolution; however, she noted that the states needed to work toward a settlement. Nebraska supports approval of the CCP. Colorado continued to work with Kansas and Nebraska to develop an amicable resolution

for approval of the proposed CCP. However, Kansas ended discussions in October 2012. Colorado will be submitting a new proposal early in 2013. The RRWCD completed construction of the CCP in 2012 and the pipeline is ready to operate. Additionally, the Bureau of Reclamation was ordered to release out-of-priority stored water in Bonny Reservoir. Releases began in October 2011 and the reservoir was basically empty by March 2012. Bonny Reservoir is now being operated as a pass through structure with no storage allowed.

Additionally, Kansas initiated a US Supreme Court suit against Nebraska due to non-compliance in 2005-2006 and the appropriate calculations of Imported Water Supply. The Supreme Court appointed a special master and hearings were held in August 2012 on the issues. Colorado participated in the hearings as an interested party. A draft ruling was received in December; however, a remaining small issue will need to be heard in August 2013 before the ruling will be concluded.

Arkansas River Compact

Colorado remains in compliance with the requirements of the Arkansas River Compact. At the meeting of the Arkansas River Compact Administration, held December 5, 2012 a copy of the Ten-year Accounting of Depletions and Accretions to Usable Stateline Flow for the period 2002-2011 was submitted into the record which shows that for the most recent compliance period, Colorado is credited with an accretion of 57,604 acre-feet. Rules pertaining to improvements to surface water irrigation practices were implemented in 2011 to insure continued compliance with the Arkansas River Compact. The rules continue to be in place and are assisting in ensuring proper compact compliance.

In the final decree, Colorado and Kansas were directed to conduct a joint review of the Offset Account Resolution, the Offset Account Crediting Agreement and of Appendix A. 4. at five year intervals beginning in 2012 for the period 1997 through 2011 and that a report was to be delivered to the Arkansas River Compact Administration. The first such report was delivered at the December 6, 2012 meeting of the Administration held in Garden City Kansas. Further information regarding that review and other compact issues can be found in the Division 2 report below.

Colorado River Compact(s)

Colorado is subject to the Colorado River Compact and the Upper Colorado River Compact ("UCRC"). These compacts allocate a portion of the flows in the Colorado River Basin to Colorado's use. With uncertain climatic conditions and growing demand for water from this system, Colorado is considering how compact deliveries can be made in the event insufficient water is available for all uses. The DWR, working with CWCB, has initiated studies to determine current needs and depletions in the Colorado River Basin and to assist in developing strategies for administration on the Colorado River and its tributaries to avoid an event where Colorado could not meet its obligations under the compacts. The UCRC Commission is working through the Bureau of Reclamation to review all four states consumptive use calculations, document those methods, and to review potential Remote Sensing applications that could assist in those calculations.

Colorado has a robust method for consumptive use calculation that takes into account water supply and is interested in future technological developments to speed up the process.

La Plata River Compact

To assure compliance with the La Plata River Compact, DWR supported the La Plata Water Conservancy District, the Southwestern Water Conservancy District, and the Colorado Water Resources Development and Power Authority's (CWRDPA) construction of the Long Hollow Reservoir, which will include a pool of water to assist Colorado in meeting obligations under the La Plata River Compact. The CWRDPA funded the dam design from set-aside Animas-La Plata settlement funds with the Indian tribes in the area. The Animas-La Plata settlement funds on reserve with the CWRDPA were used to initiate dam design in 2009 and construction began in 2012. During dry periods in 2012, DWR used Cherry Creek to facilitate deliveries to New Mexico.

Animas La Plata Compact

With the completion of Ridges Basin Reservoir, pumping into the reservoir began. The State Engineer, seeking to streamline administrative issues that arise due to project operations, drafted an operating protocol. This protocol was developed in concert with the Southwestern Water Conservancy District and is intended to document the background for administration of the project. A draft of the protocol was provided to the La Plata Association, a group of water users including the Ute tribes, New Mexico and Colorado water providers who will use the water from the project. Comments on the protocol have been received and are being considered for incorporation in a final version of the protocol.

Rio Grande Compact

Extensive use of recharge was made in the Rio Grande Basin to avoid significant over-delivery of water to downstream states. In the lower part of the Rio Grande Basin, endangered species issues and the Elephant Butte Operating Agreement continue to be the larger issues. The Rio Grande Compact Commission continues to monitor the impact of endangered species on New Mexico's water operations. The Biological Opinion on the Silvery Minnow expires in 2013 and renewal may prove contentious. The United States Fish and Wildlife Service is proposing new critical habitat designation for the Southwestern Willow Flycatcher. The Colorado portion of the Rio Grande has a Habitat Conservation Plan in place for the species so listing should not occur in that area. The Elephant Butte Operating Agreement was developed to incentivize the conservation of water in Elephant Butte Reservoir by allowing the two districts to build carryover pools in the reservoir. Unfortunately, New Mexico has sued the Bureau of Reclamation over the agreement and alleges that its operations are in violation of the Rio Grande Compact Commission's direction.

RULEMAKING

With the passage of Senate Bill 04-222, the General Assembly recognized the importance of sustainability of ground water aquifers and approved the use of subdistricts in order to allow for localized control of water supplies. For the last several years, the Rio Grande Water Conservation District (RGWCD) has encouraged the formation of ground water subdistricts to attempt to manage portions of the aquifer system. Subdistrict No. 1, a geographic subunit of the RGWCD north of the Rio Grande, was established by the Alamosa County District Court on July 19, 2006. Subdistrict No. 1 elected a Board of Managers, which drafted a plan of water management in October 2007. That plan was approved in May 2010 and was then appealed to the Supreme Court. Arguments were held by the Supreme Court in late 2011. In December the Court agreed with the lower court on all the issues and upheld the plan.

Subdistrict No.1 began collecting assessments via county tax rolls in 2011 and began replacing depletions in 2012. The approval of the 2012 Annual Replacement Plan was contested and a hearing was held in October 2012 to review the issues.

The formation of other subdistricts in the Rio Grande Basin is proceeding. An advisory committee was formed in 2009 to assist the State Engineer in drafting rules to address injurious depletions caused by ground water use, sustainability of aquifers, the setting of a yearly irrigation season, developing ground water subdistricts and plans of water management to prevent injury to senior water rights, and avoiding interference with the Rio Grande Compact. Unfortunately, the rules anticipate the use of subdistricts, so the Supreme Court case and protest to the approval of the Annual Replacement Plan delayed the activities of the committee pending the resolution of the legal issues. Work continues on a Conservation Reserve Enhancement Project application for the Rio Grande Basin for retirement or fallowing of approximately 40,000 acres in the Subdistrict No.1.

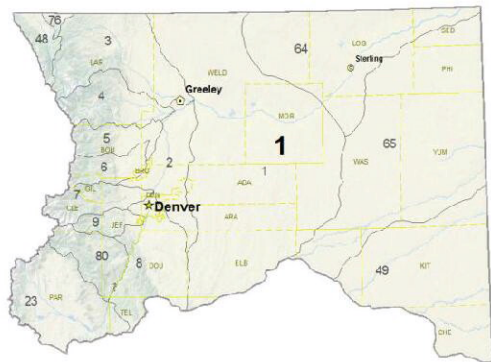
WATER ADMINISTRATION TOOL ENHANCEMENTS

During 2012 the Division of Water Resources continued to supplement content in the Laserfiche Imaging Database, growing by an additional 313,000 documents. Approximately 460GB of space was used to accommodate the documents added in one year. During 2012 the DWR began scanning over 700 Emergency Action Plans related to Dam Safety. In addition, a new template was established in the Imaging Database to facilitate scanning of Dam Safety Inundation Maps.

WATER DIVISION 1 (SOUTH PLATTE RIVER BASIN)

Water Supply Conditions

Irrigation Year 2012 in Division One could be described using a quote from A Tale of Two Cities by Charles Dickens “It was the best of times; it was the worst of times.” The first one-third of the year (November 2011 through February 2012) was very good, but the last two-thirds (March through October 2012) were very bad.



November 2011 through February 2012 started off WY 2012 in excellent fashion. Stream flows at two of the key South Platte gages, Kersey and Julesburg, were above average to well above average for the entire period. The flow at Kersey varied from 121% to 156% of average while the flow at Julesburg varied from 121% to 206% of average. As might be expected from the stream flow numbers, calls on the South Platte mainstem and tributaries were either normal or more junior than normal throughout this period. Water storage volumes also continued to be above average (105% to 117%). The one sour note in this otherwise rosy picture was that the snow pack remained stubbornly below average (77 to 93%) in terms of snow water equivalent throughout the period. This low snowpack did cause some concern, but in no way prepared everyone for what happened during the remainder of the irrigation year.



March 2012 set much of the tone for the rest of the water year in Water Division No. 1. Temperatures were between 4 and 10^o F above normal and precipitation was very low to nonexistent. The snow pack peaked on March 4, the earliest in the 30+ years of SNOWTEL remote sensing site operations, fully two months earlier than normal. Stream flow at Kersey and Julesburg dropped from well above average to below average and by the end of the month river calls had moved to more senior than normal. The lone bright spot was that storage was still above average (104%) because of the good conditions during the last part of WY 2011 and the first third of WY 2012.

April through June continued the very poor conditions that began in March to the point 2012 was being compared to the historically dry year of 2002. Stream flows at Kersey and Julesburg declined steadily to the point the June flows were 9% of the historic Kersey mean and 4% of the historic Julesburg mean. River calls followed the declining stream flows by growing progressively more senior to the point that by the end of June, calls not seen since July and August of 2002 were in place. Reservoir storage also reversed the above average trend to the





point it was only 79% of average by the end of June. To further complicate the situation, the Division Engineer was forced to increase the assessed transit losses on the South Platte mainstem below Chatfield Reservoir the end of June. And as a grand finale, the Hewlett Park and High Park Fires in May and June burned approximately 95,000 acres and over 260 homes, mostly in Cache la Poudre River basin, to become the second largest and second most expensive fire in Colorado history.

Fortunately, conditions improved somewhat during the July through October period. The arrival of the monsoon rains in July both increased water supply and greatly reduced the fire danger in the foothills/mountains. However, the heavy ash/sediment load in the runoff from the burn area forced Ft. Collins and Greeley to cease direct diversions from the Poudre River, causing significant reductions in their water supplies. This did create opportunities for cooperation with irrigation users to avert a major water supply crisis and those opportunities were taken. The impacts from the Hewlett Park and High Park Fires on the Ft. Collins and Greeley water supplies will last several years into the future, but both cities have been proactive in addressing these future impacts.

The more frequent precipitation events in the July through October period did cause greater stream flows at both the Kersey and Julesburg gages and slightly more junior calls. However, stream flows were still well below normal (39% to 78% of average for Kersey and 13% to 29% for Julesburg). River calls remained more senior than normal and, by the end of September most irrigation reservoirs were at or near dead-pool. Direct irrigation demand did decrease in October to the point some of the eastern plains reservoirs refill rights came into priority and allowed a bit of a head start on filling for the 2013 irrigation season.



Well Administration – South Platte River Basin

The well enforcement program had a busy year sending out approximately 100 cease and desist orders and twenty-five install flow meter orders. Additionally, three compliance cases (Case Nos. 12CW55, 56, & 57) and one contempt of court case (Case No. 04CW134) were successfully litigated in water court over the course of the year. As a result of the annual meter read program, the Well Team identified nine wells that appeared to have operated against Cease & Desist Orders in 2012. Of those, five are being forwarded to the Attorney General's office seeking a verified complaint for pumping against Cease and Desist Orders, and two are being forwarded to the Attorney General's office seeking a contempt of court action for illegal pumping against an injunction.

Well Administration – Republican River Basin

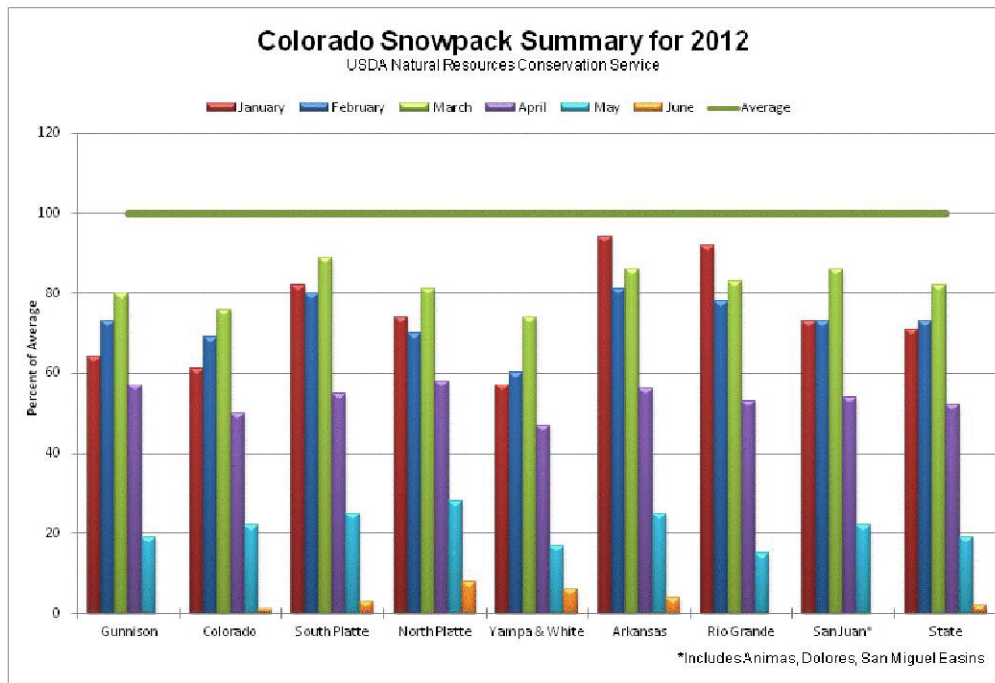
In 2012, the administration of the Republican River Basin Groundwater Measurement Rules (Rules) transitioned from the Denver office to the Greeley office. The program continues making progress towards the completion of an inventory of all wells within the scope of the Rules. Additionally, the fourth year of this program is transitioning from program start-up to administration and enforcement efforts. As such, the Greeley office and Republican field crew distributed approximately 135 Notice of Violation Letters, 60 Cease & Desist Orders, 85 Meter Certification Expiring Letters and 600 Annual Usage Reporting Forms. The Well Team also continued efforts in support of the 2010 Abandonment List, providing field inspections and in some instances providing affidavits and testimony for several Protest Cases in Water Court.

The Republican River well team has been busy assisting the Designated Basins Team in the administration of well permit volumetric limits by posting and documenting Orders on approximately 250 wells that exceeded their annual limitation in the WY 2011. These Orders are being administered by the Designated Basins Team in Denver, and require the reduction of the annual pumping limits for 2012 Irrigation Year by the amount over-pumped in 2011.

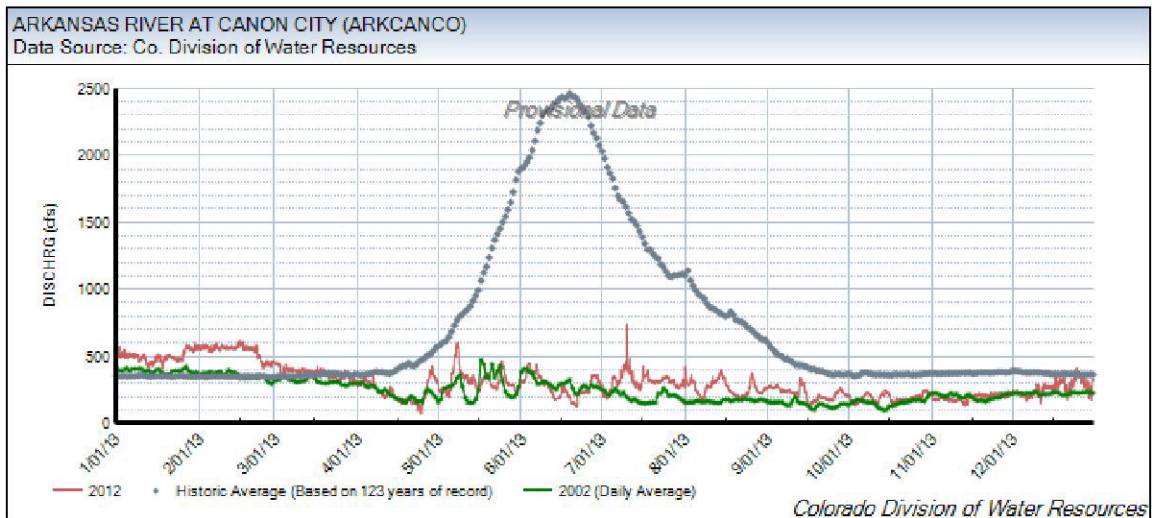
WATER DIVISION 2 (ARKANSAS RIVER BASIN)

General Description of 2012 Operations

Snow pack in the Arkansas River Basin for 2012 was below average as shown by the comparison graph below:



As a result, the runoff as measured at Canon City reflects flows comparable to those which occurred in 2002, a year of notable drought.



The below-average snowpack in the Arkansas River Basin corresponded with below-average snowpack in the Upper Colorado River Basin, namely the Frying-Pan River Basin, which is the source of water imported by the Fryingpan-Arkansas Project.

The Bureau of Reclamation provided the information in the following table in their 2012 annual report of the Fryingpan-Arkansas Project activities:

Fryingpan-Arkansas Project Imports
Charles H. Boustead Tunnel Outlet
Unit: 1,000 Acre-feet

<u>Year</u>	<u>Imports</u>	<u>Accumulated Imports</u>	<u>Twin Lakes Exchange</u>	<u>Allocations</u>
2002	13.2	1,500.7	1.5	8.5
2003	54.9	1,555.6	2.4	37.5
2004	27.4	1,583.0	1.3	15.3
2005	54.6	1,637.6	3.0	40.8
2006	61.2	1,698.8	3.0	49.2
2007	54.2	1,753.0	3.0	40.4
2008	90.0	1,843.0	3.0	83.0
2009	82.7	1,925.7	3.0	78.0
2010	56.5	1982.2	3.0	44.0
2011	98.9	2081.1	2.9	75.0
2012	13.4	2094.5	1.5	9.9

The 13,400 acre-feet of Fry-Ark Project imports was the fourth lowest import by the Fry-Ark Project and comparable to that imported in 2002.

There were no runoff-events which justified storage in John Martin Reservoir at any time in 2012 and stream conditions below John Martin were sufficiently inefficient so as to cause Kansas to defer from calling for any release of stored water from the reservoir.

Well pumping in 2012 was higher than in the previous ten years except for 2011. The 2012 calendar year actual pumping and stream depletions for AGUA, CWPDA and LAWMA were as follows:

Plan	Actual 2012 Calendar Year Pumping (AF)	Actual 2012 Calendar Year Rule 3 Irrigation Pumping (AF)	Actual 2012 Calendar Year Stream Depletions (AF)
AGUA	8,987	7,357	5,098
CWPDA	47,926	38,259	23,879
LAWMA	53,755	48,431	17,364
TOTALS	110,688	94,047	46,341

The AGUA, CWPDA and LAWMA plans were operated in 2012 in substantial compliance with the Amended Rules and Regulations Governing the Diversion and Use of Tributary Ground Water in the Arkansas River Basin, Colorado and operations were intended to ensure protection of senior vested water rights and compliance with the Arkansas River Compact.

Compact Issues

Colorado remains in compliance with the requirements of the Arkansas River Compact. At the meeting of the Arkansas River Compact Administration, held December 5, 2012 a copy of the Ten-year Accounting of Depletions and Accretions to Usable Stateline Flow for the period 2002-2011 was submitted into the record which shows that for the most recent compliance period, Colorado is credited with an accretion of 57,604 acre-feet.

Rules pertaining to improvements to surface water irrigation practices were implemented in 2011 to insure continued compliance with the Arkansas River Compact. These will be discussed at greater length in the Highlights of 2012 section of this report.

Appendix A. 4. of the final decree in Kansas v. Colorado No. 105 Original specified that Colorado and Kansas were to conduct a joint review of the Offset Account Resolution, the Offset Account Crediting Agreement and of Appendix A. 4. at five year intervals beginning in 2012 for the period 1997 through 2011 and that a report was to be delivered to the Arkansas River Compact Administration. The first such report was delivered at the December 6, 2012 meeting of the Administration held in Garden City Kansas. The principle authors of the report were Kevin Salter, Rachel Duran, Kelley Thompson and Bill Tyner. This report is recommended reading to any who wish to understand how this account is utilized as being far more readable and understandable than are the primary documents.

Presumptive Depletion Factors are used to determine the amount of replacement water required of Colorado well users under the Arkansas Ground Water Use Rules. Appendix A. 4. of the final decree in Kansas v. Colorado No. 105 Original, requires an annual review and potential adjustment of the presumptive depletion factors according to a prescribed procedure. According to the analysis performed principally by Kelley Thompson, the presumptive depletion factor for supplemental flood and furrow irrigation was determined to be 38.1% for 2013 and Kansas accepted the result of this analysis.

Kansas has identified a number of issues that have been compiled into what has been named the Water Issues Matrix. There are currently eleven issues pending, six have been removed and eighteen have been resolved. No substantial progress was made toward resolution of the remaining eleven during the past year.



Due to dry river conditions, limited account water available to Kansas and the lack of summer precipitation which prevented runoff from occurring to enhance stream flow efficiency, Kansas elected to refrain from placing a call for water stored in John Martin Reservoir that was available to them. This decision was reached after meetings between the Kansas Division of Water Resources and Kansas water users in which the expected transit losses were compared to the anticipated evaporative losses from John Martin and determined to be essentially the same. Therefore a decision was made to defer making a release of stored water until conditions improved and that failed to occur during the remainder of the Compact Year. The result of this decision insofar as Colorado is concerned is mixed, on one hand Colorado was not placed in a position of having to indemnify Kansas for the high transit-loss that would have occurred on water released from the Kansas Section II account, however, the lack of Kansas' water in the stream reach below John Martin contributed to even higher transit losses on replacements of water made to negate the effect of in-state well depletions.

Problems Solved

Substitute Water Supply Plan Backlog Resolved: Monthly meetings of staff members, including field personnel, either in person or by telephone, continue to provide an effective means of addressing water administration issues. This meeting, referred to as the Orders Committee, allows for new issues to be discussed for strategy to be developed to accomplish principled, consistent remedies to problems encountered in the field. These meetings also promote communication and accountability between office and field staff regarding the execution of agreed upon plans to address problems.

The legislature has acknowledged a need for water users to have a more expedient means for obtaining approval for certain types of water use operations than is often available through the Water Courts. As a result statutory authority was created for the State Engineer to temporarily approve changes of water rights and plans for augmentation. These types of operations are reviewed and acted on through a process that has commonly become known as the Substitute Water Supply Plan (SWSP) review process. Over time action on some SWSPs had become so protracted that plans were being approved for years in the past. In an effort to bring more discipline to the review process and to produce more timely decisions, periodic telephonic meetings between Division 2 and the State Engineer's Denver Staff were instituted and proved helpful in eliminating the backlog of pending SWSPs.

Highlights of 2012

During the first year of operating the Lower Arkansas Water Conservancy District's Compact Compliance Plan (April 1, 2011 through March 31, 2012) under the Irrigation Improvement Rules, the District's estimated maintenance obligation was 1,058 acre-feet, not including transit-losses. Three releases totaling 1,888 acre feet were made during the plan year to maintain return flows. As expected the return flow deficit resulting from the use of more efficient means of delivering surface water for irrigation was calculated to be much lower for a dry year, such as 2012. The total return flow deficit was determined to be

954 acre-feet through 4/30, 2013. More frequent and timely maintenance releases were achieved in 2012 than in the previous year.

The Lower Arkansas Valley Super Ditch Company, Inc. submitted an application for approval of a SWSP under C.R.S. 37-92-308(5) on March 8, 2012. Known as the Super Ditch, the concept is a rotational fallowing proposal. The Lower Arkansas Valley Water Conservancy District has identified and promoted the idea of having the major canal companies in the region organize and implement rotational fallowing as a viable alternative to permanent dry-up of irrigated agricultural land to change the use to provide for municipal needs and to provide a new source of agricultural revenue from temporary leases of water to municipalities. Previously, in 2004 and 2005, the City of Aurora explored this concept through leases of 840 of the total 2250 shares owned by Rocky Ford Highline Ditch Company shareholders with very little opposition. This was not to be the case for the Super Ditch Pilot Program. Fifteen parties filed comments in opposition to a comparatively modest proposal involving 286.7 shares of the Catlin Canal. The major issues were whether the operations of the proposed plan could all occur within a single year, whether all delayed return flows could be delivered within five years as required by the authorizing statute under which the plan was requested. An eighteen page conditional approval containing forty-five conditions was finally awarded on May 8, 2012. Among the conditions was a requirement to construct and demonstrate the performance of recharge basins. Certain lands were disallowed because of the return flow timing exceeded five years. However, the plan failed because the conditions of approval were not met. A complaint was lodged against the State Engineer alleging that his authority had been exceeded in granting approval in case 12CW46, however, the case was dismissed.



WATER DIVISION 3 (RIO GRANDE BASIN)

Water Administration

In 2012 the rest of the state joined Division 3 with low snowpack and runoff conditions. While Division 3 had been experiencing low snowfall and streamflow conditions since 2009, the majority of the state had experienced

average to well above average snowfall and streamflow conditions during that same time, but 2012 brought everyone into the drought category. Snowpack in Division 3 during the winter of 2011-2012 was below average the entire winter season, and it was the lowest snowpack that Division 3 had experienced since 2003. At its peak, the snowpack was at approximately 75% of the average peak.

Due to the unusually warm conditions and several dust-on-snow events throughout the winter, the runoff occurred earlier than usual for most of the drainage basins in Division 3. On most of the stream systems in Division 3, the flows in April and early May were higher than the average for that time of year. However, by mid May the streamflows dropped below average. By the time that the streams usually peak in late May to early June, the streamflows were significantly lower than the average, and they remained lower than average the rest of the irrigation season. The peak flow on the Rio Grande near Del Norte was approximately 85% of average, while the peak flow on the Conejos River near Mogote was only approximately 70% of average.

The runoff flows on both the Rio Grande and the Conejos rivers were actually lower than expected, and led to dropping forecasts through the spring. Compact curtailment began at 15% on the Conejos and 10% on the Rio Grande at the beginning of the irrigation season. By the beginning of May the Conejos curtailment was down to zero and the Rio Grande curtailment was at 2%. Even though there was no more curtailment throughout the rest of the irrigation season on the Conejos system, there was still an over delivery of compact water from the Conejos of approximately 7,000 acre-feet.

The 2012 water year was the first in which Subdistrict #1 was fully functional and was required to replace surface water depletions to the Rio Grande as well as attempting to bring the aquifers back into a sustainable condition. Getting to this place with the first subdistrict was the culmination of nearly six years of water court activity and litigation that ended with the approval to go forward from the state Supreme Court in December of 2011. Replacements to the Rio Grande began on May 1, 2012 and continued throughout the 2012 calendar year. This noteworthy event is explained in more detail later in this report.

The State Engineer's irrigation season policy was in effect for both the beginning and ending of the irrigation season in 2012. This policy, signed by the State Engineer on April 14, 2010, set in place the presumptive irrigation season dates of April 1 through

November 1 of each year, but also set certain criteria that could be looked at to adjust these dates. The irrigation season policy allows the Division Engineer to set beginning and ending dates for the irrigation season based upon the unique features of a drainage area, so there may be different beginning and ending dates for the different sub-basins within Division 3.

Diversions for irrigation began on March 21, 2012 on the La Jara Creek and Culebra Creek drainage basins. The irrigation season began on the Rio Grande, Saguache Creek, and Carnero and La Garita Creek drainage areas on March 29, 2012. San Luis Creek and Trinchera Creek drainage areas began diversions on April 1, 2012, and the Conejos River system began diversions on April 2, 2012. Most areas of the valley ended the irrigation season on November 1, 2012. However, due to the over-delivery of compact water on the Conejos system, that area was allowed to continue the irrigation season until November 30, 2012. As a whole, Colorado was close on its Rio Grande Compact delivery obligations for 2012, with a total of 6,300 acre-feet of credit at the end of the year. However, due to an ongoing disagreement between the three compact states as to the accounting methodology to be used, the final compact accounting numbers were not ratified by the compact commission at its regularly scheduled meeting.

The unconfined aquifer continues to decline due to the ongoing drought conditions. During 2012 the area involved in the “Rio Grande Water Conservation District (RGWCD) Unconfined Aquifer of the Closed Basin Change in Storage Study” lost over 123,000 acre-feet of water. This significant loss caused the aquifer to drop to the lowest levels ever recorded, significantly lower than that amount in the aquifer after the devastating drought years of 2002-2004. The study showed that the aquifer contained approximately 1,200,000 acre-feet less water than it did in 1976.



Stream Administration

Stream administration in Division III during 2012 was challenging due to the above average flows early in the season and then the significantly below average flows the remainder of the year. In April, a rapid warming trend brought out the snow in a short time period, causing the peak flows on most rivers and streams to occur up to a month earlier than usual. Almost as soon as it occurred, this peak period was gone and the flows once again dropped well below normal on most streams. The dry summer that followed only caused the flows to continue dropping below average. The NRCS forecasts for basin yields on both the Rio Grande and Conejos had to be routinely downgraded throughout the spring forecasting period.



Ground Water Metering Issues

2012 marked the year that the groundwater group transitioned completely to the HydroBase Data Management Console (HBDMC) to manage all data entry and record keeping. In addition to the data management within HBDMC, all end-of-year calculations for well pumping were performed within HBDMC and it was utilized to assist Sub

District #1 with their end-of-year pumping calculations.

There were a total of 48 Non-Compliance letters that were sent to well owners in Division 3. These issues were resolved out of court. There were also approximately 350 notices of expired meters sent to well owners.

There were a total of 1,033 certified meter tests that were performed by independent testers in Division 3 in 2012. DWR staff performed 170 tests on meters installed on wells in Division 3. The Division anticipates performing 400 meter tests during the upcoming year

Water Issues

As part of Senate Bill 04-222 the Rio Grande Water Conservation District has encouraged the formation of groundwater subdistricts to attempt to manage portions of the aquifer system. In December Of 2011, the Supreme Court upheld the Water Judge's ruling, allowing the first subdistrict to move forward and on May 1, 2012 the subdistrict began replacing their injurious stream depletions to the Rio Grande. The injurious depletions were on the order of 6 to 7 c.f.s. and this water was generally released from upstream reservoirs. However, the subdistrict can also engage in 'forbearance' via contract allowing for the payment of cash in place of replacement water with the Rio Grande Canal.

The formation of other Subdistricts in the Trinchera drainage, Rio Grande alluvium, Conejos area, Saguache area, San Luis Creek area, and Alamosa-La Jara Creek area are proceeding. All of these subdistricts are eagerly awaiting the modeling results from the Rio Grande Decision Support System (RGDSS) water model to determine the depletions their wells are causing to senior surface water rights. As soon as model results are known, the other subdistricts can push forward with development and filing of their plans.

The State Engineer is currently in the process of developing Rules and Regulations concerning the use of Groundwater in Division 3 with the assistance of an advisory committee comprised of 56 individuals representing groundwater users, surface water users and governmental agencies. The goal of this advisory group is to assist in developing rules and regulations on the future use of groundwater so that senior water rights are protected and the groundwater aquifers are brought into a sustainable position.

Based upon results from the RGDSS water model, it appears that groundwater pumping in Division 3 causes stream depletions that has some effect on senior surface water rights. Therefore, the rules will require groundwater users to mitigate their injurious depletions to senior water rights. This can be done in three ways:

- Develop an augmentation plan to offset any injurious depletions. These types of plans can be approved on a temporary basis through a Substitute Water Supply Plan, or on a permanent basis through water court;
- Join a subdistrict. These subdistricts will in many ways act as a very large augmentation plan. The subdistricts will collect fees from their constituents and use that money in various ways, such as purchasing augmentation water, constructing recharge facilities, paying senior water rights holders for injurious depletions, etc.; or,
- Cease using the well(s).

The majority of the work in developing the rules has been accomplished. Once final modeling results are complete development of the sustainability and phase-in portions of the rules will commence to complete the process.

WATER DIVISION 4 (GUNNISON RIVER BASIN)



Water Supply

The past two irrigation seasons (2011 and 2012) can undoubtedly be described as more extreme than any other consecutive water years recorded in the Gunnison River Basin. Not the necessarily the largest and the smallest in terms of yield, but the most extreme in terms of yield disparity. The 2012 Water Year peaked at only 68 percent of average for snowpack conditions in the Gunnison River Basin and melt-off as finished by May 21. This is in stark contrast with the 145 percent peak that occurred in 2011. Runoff conditions were very similar to the 2002 runoff in that 2012 is the second worst runoff year in terms of average monthly flows measured at many of the USGS stream gages in Division 4.

Fortunately, the Gunnison Basin received monsoon rainfall for a few weeks during the end of July and beginning of August. Full reservoirs at the beginning of the irrigation season and the subsequent monsoon rains helped to prevent river calls on the Gunnison River main stem.

Surface Water Administration

The April-through-July inflow to the Aspinall Unit (Blue Mesa, Morrow Point, and Crystal Reservoirs) was 32 percent of normal. This is the second lowest inflow on record since Blue Mesa Reservoir was built in the middle 1960's, second only to 2002. The 2011 inflow for the same period was 137 percent of normal. For the 2012 irrigation season, the reservoir lost a total of 317,000 acre-feet and ended the year with only 326,600 acre-feet in storage. This is the type of year when reservoir storage is critical and is the main reason they were built. Based on new operational criteria to maintain certain target flows in the Gunnison River at Whitewater, the Bureau of Reclamation released approximately 27,000 acre-feet more water in 2012 compared to 2002. One effect of maintaining these target flows is that it keeps the water right for the Redlands Power and Canal Co. whole, thus alleviating a potential call by that senior water right which is located at the bottom of the stream system.

Having enjoyed several good water years in a row the drought conditions of 2012 created stressful situations that water users in this basin had not experienced since 2002. Various meetings were held with government agencies and water users in the Gunnison and Uncompahgre Basin to deal with the situation. The major users in the basin cooperatively worked out major issues to give everyone the best opportunity to use the small amount of water available. For example, the U.S. Fish & Wildlife Service (USFWS), rather than release stored water, accepted a small reduction in the flows for

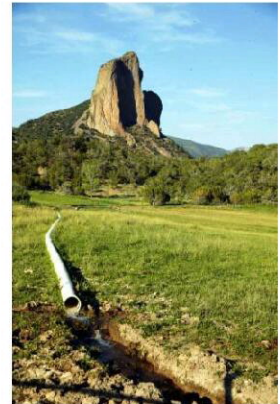


endangered fish in the Gunnison River below the Redlands Canal, recognizing the extreme conditions and the need to utilize the water wisely and save storage for the next year.

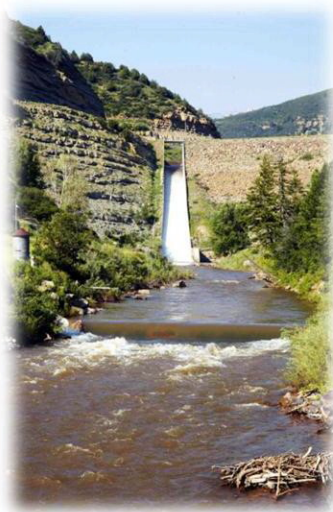
In Taylor Park Reservoir there were storage credits in both First Fill and Second Fill accounts. The Upper Gunnison River Water Conservancy District recognized that their users would be curtailed from the Uncompahgre Valley Water Users Association (UVWUA) call at the Gunnison Tunnel, and approached the U.S. Bureau of Reclamation to request a releasing of second fill storage to satisfy the Tunnel call. A formal request was made by UVWUA for the release and accounting of second fill to cover the natural flow shortage at the Tunnel (in lieu of first fill storage water).

The second fill in Taylor Park Reservoir had accumulated approximately 50,000 acre-feet, and releases from that account were necessary to keep the call off the river by the Gunnison Tunnel during most of the irrigation season (through August 20). Incidentally, the second fill water was released for recreation and piscatorial uses and not for direct irrigation in various ditches, being accounted for as natural flow available to the Gunnison Tunnel once it is released from Crystal Dam. For many users in the basin, this allowed enough water and time to irrigate a large part of their hay crop.

On the Uncompahgre River, the runoff situation fared no better than the Gunnison. The UVWUA signed a call for their senior rights on the Montrose and Delta (M & D) Canal on May 2, 2012. Subsequently, Ridgway Reservoir was only able to store approximately 1,850acre-feet, post river call. This is unusual in that historically there is no issue with filling every year. Similar to 2002, for most of the spring and summer, rights above the M & D Canal were curtailed downward to an 1883 priority date, surpassing the historic low call of 1940 in 2000. Numerous ditches have rights senior to the M & D, but most are small and depend on their junior enlargements to irrigate hay crops. Once again, the users were not accustomed to being shut off, and many hay crops were cut short.



In District 40, the runoff conditions from the Grand Mesa were just as poor as the Uncompahgre River. Reservoir storage is critical in this area. On the two major creeks that come down the south side of the Grand Mesa near Cedaredge, both received a call in April that discontinued all reservoir storage for the remainder of spring and summer. An April 13 call on Ward Creek curtailed over twenty-five reservoirs from storing, and a May 10 call on Surface Creek curtailed another thirty reservoirs. The season ended with dismal combined reservoir carryover storage of 17 percent of total volume compared to a normal carryover of 30 to 35 percent. The many reservoirs on Leroux Creek however, were able to fill during the runoff period.



The storage in Paonia Reservoir is primarily owned by the Fire Mountain Canal. The Fire Mountain Canal relies on natural flow during the spring until the runoff season ends, and then relies on storage out of Paonia Reservoir. The natural flow was called out by the Short Ditch on July 7, 2012, marking the earliest the Fire Mountain Canal has gone on storage water since the reservoir was constructed.

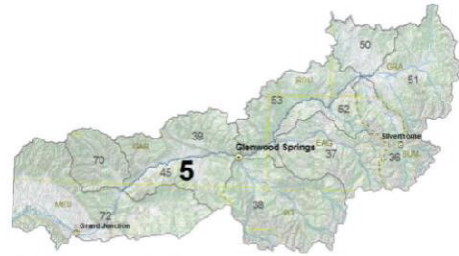
Surprisingly, the San Miguel River held up fairly well. A call from the Highline Canal was expected earlier in June, but was not placed until July 19. A call was placed on Naturita Creek by the Maverick Draw Ditch from June 20 for the remainder of the season.

Groundwater Administration

The Well Permitting Program in Division 4 continues to provide timely issuance of exempt well permits. There were 191 well permits issued within Division 4 during the 2012 water year, an increase from the 174 permits issued the previous year bucking the downward trend in existence for the past ten years. The increase is likely due to real estate prices bottoming out and improvement in the local economy and real estate market.

WATER DIVISION 5 (COLORADO RIVER BASIN)

Surface Water



The Colorado River Basin water supply for the 2012 irrigation year and the 2011 irrigation year are years of extremes, and polar opposites. The 2011 year had one of the greatest snow packs on record, while 2012 had one of the lowest. Basin wide precipitation for the 2012 irrigation year was 74.0% of average and 59.0% of 2011. The April 1, 2012 snow water equivalent was 49% of average and it had already peaked, while the April 1, 2011 snow water equivalent was 130% of average and it continued to gain into May. By early March the 2012 snowpack was declining and redefined the historic minimum curve from the third week in March through the snowmelt runoff, excluding a minor variation the end of May. The opposite is depicted in the snow water equivalent graph for 2011, where the curve for the maximum of record was redefined by 2011, extending the curve during late April-early May and also in late May. When the 2011 curve did not create new peaks, it did track very close to the maximum of record on the descending limb of the snow water curve. Generally, the snowpack in Division 5 for the 2012 season peaked 6 weeks earlier than average, and SNOTEL sites below 10,000 ft were completely devoid of snow 5 weeks ahead of average. By June 1st only two SNOTEL sites had not completely melted out.

After four consecutive months of below average precipitation through the end of February, the March 1, 2012 forecasts indicated runoff would be well below average. Unfortunately, each of the months of March through June continued the trend of monthly below average precipitation. The final result was a continued decline in forecasted river flows. More normal precipitation occurred in mid to late summer helping flows somewhat.

Incredibly, the Colorado River near Dotsero peak daily average occurred on April 28, 2012, with flows on May 6th and May 24th approaching the April 28th peak. The April 28th peak is the earliest on record. The average peak day for the Dotsero gage is on June 8th. The Colorado River at Cameo peak daily average was on May 24, 2011, over two weeks ahead of the norm, which occurs on June 9th. In comparing the forecasts for undepleted flow with actual gaged flow, the gaged stream flow for the April-July period fared much worse. The Colorado River near Dotsero gaged stream flows were 17% of average and the Colorado River near Cameo stream flows were 22% of average. The differences are attributed to the continued below average precipitation after the June 1 forecast and that the major reservoirs and diversions upstream of the gages take a much larger share of the undepleted flow in low flow years.

Green Mountain Reservoir did paper fill in 2012, however it only attained a physical fill of 111,944 acre-feet with 39,777 acre-feet owed to it by Denver and Colorado Springs. Ruedi Reservoir did not fill with a maximum content of 90,249 acre-feet, which is 12,000 acre-feet short of full. Wolford Mountain Reservoir generally fills early with its lower

elevation drainage. In 2012 it filled its 66,891 acre-foot capacity on April 19th and spilled through June 8th. Williams Fork Reservoir was just shy of full, reaching maximum content on June 10th at 94,123 acre-feet. Maximum storage for 2012 in Granby reached 432,359 acre-feet on June 14th, while full capacity is 539,800 acre-feet. Homestake Reservoir was drained for major repairs.

Ultimately the dire snowpack was mitigated by reservoir storage beginning the year 20% above average, and near average mid to late summer precipitation. The Water Year did end with the seventh lowest year in 79 years of record for the Colorado River near Cameo gage flow and the sixth lowest year in 71 years of record for the Colorado River near Dotsero. The gaged flows for the entire Water Year were 59% of historic average at both the Colorado River near Cameo and near Dotsero gages.

Surface Water Administration

With water supplies at historically low levels and an unusually warm March and April, administration of many tributaries began in late March. Streams that normally provide supply to most water rights into July were reduced to only the most senior rights by mid May. Several higher elevation streams that historically only have shortages in much below average years were curtailed by August. One stream, Cataract Creek in District 36, was administered for only the second time in history.

For the 2012 irrigation year the Shoshone Power Plant was offline, operating with only one of two units, or operating with a reduced head at the dam and failing to use all of the water available. The lowered pond elevation at the diversion dam was the result of excessive seepage and concerns for the integrity of the dam. Repair was completed in late November 2012 and the power plant was at full operation by mid December. By early summer the Cameo Call provided sufficient water at Shoshone for the reduced head operations.

The Cameo Call was placed on June 20, 2012. It is the second earliest call on record, exceeded only by the June 16th call in 2002. To preserve upstream storage, the Grand Valley water users attempted to operate well below their demand of 1950 c.f.s.

On April 12, 2012, the Interim Policy for the 2012 Green Mountain Reservoir fill season was issued with no substantive changes from 2011. The policy did anticipate a paper fill of Green Mountain Reservoir. The Secretary of Interior declared start of fill on April 1, 2012. Due to the extremely low runoff no water was allocated to power at Green Mountain Reservoir during the fill season and therefore the Interim Fill Policy had no practical impact on the manner of filling the reservoir or any rights upstream and subject to a call by Green Mountain.

Coordinated Reservoir Reoperations for the Endangered Fish Recovery Program (CROS) were not conducted in 2012. Confidence in storage for participating reservoirs and forecasted peak flows at Cameo well below the 12,000 c.f.s. trigger for the program led to an early decision to call off CROS this year. On May 24th the river peaked at 4,250 c.f.s., confirming that decision. The CROS program is an element of the Recovery

Program for the Endangered Fish in the 15-mile reach. When operated the participating reservoirs modify the timing of their fill, without impacting yield to enhance the peak at Cameo for a 7-10 day period, so long as the peak is sufficient (12,000 c.f.s.) to provide benefit to the habitat and yet will not cause damage (25,000 c.f.s.).

The Recovery Program did not fare well after the snowmelt runoff. The extremely dry conditions left a total of 32,649 acre-feet available for the endangered fish from Ruedi, Wolford Mountain and Williams Fork Reservoirs. The 5,000 acre-feet in Ruedi's 4 out of 5 pool was not available and no Green Mountain Reservoir HUP surplus water was available. Of the 32,649 acre-feet available for the program, 31,652 acre-feet was released. 4,772 acre-feet of Wolford's 5412 was released from Ruedi by contract and 997 acre-feet remained in Wolford. Assessed transit losses reduced the releases at the 15-mile reach to 29,001 acre-feet. Additional flow for the 15 mile reach is provided by returns from the Highline Canal through the Palisade Pipeline, which totaled 9,119 acre-feet in 2012. The target flows for the habitat were set within the very low range of 100 c.f.s. to 500 c.f.s. for impact of recovery program releases).

In addition to the annual increase in decreed augmentation plans, Division 5 personnel administered by formal approval 6 administrative exchanges, 26 approved Substitute Supply plans (excluding SWSP's issued for gravel pits), and for the first time ever 2 Temporary Loans to CWC.B.

Groundwater

Well permitting activity increased in 2012 over 2011 with a total of 424 well permit applications received for both exempt and non-exempt new and replacement wells. This compares to 359 applications in 2011. It is the first year over year increase in applications for Division No. 5 since the start of the 2008 recession. However, it is a considerable distance from the 1,200 annual applications of the late 1990's. Total permits issued for both exempt and non exempt new and replacement wells in 2012 was 397 compared to a total of 387 permits in 2011. The slight 2012 increase over 2011 of permits issued compared to applications is the result of a backlog from 2010. Geothermal Permits continue to have a minor workload. 2012 saw only 1 permit issued compared to 7 in 2011. Drilling activity did increase in 2012 with 275 drillers logs received versus 228 in 2011.

Augmentation Plan and Municipal Water Rights Administration

The Division 5 Augmentation/Municipal Administration Team was formed to support water administration through the negotiation of administrable decrees, accurate tabulation and interpretation of decrees, development of accounting specific to each, and development of processes for data collection. In addition to the tabulation of the water rights, complex decrees are outlined in documents that will be attached to the accounting as the administrative plan for the water system. In 2012, all old spreadsheets were modified to accommodate the new HydroBase standards, and a handful of new spreadsheets were developed. Previously unconnected water users continue to be contacted to provide data and to collect information for verification that plans are operating in accordance with decrees.

Division 5 Paperless Project

Our goal is to have all Water Division 5 non-confidential documents electronically available to the public on Laserfiche. This includes all water court case files, water administration files, data not in HydroBase, and other administrative documents. Through 2012, all of the water court files and 60% of our Water Administration files have been imaged, named with a user friendly naming convention, and uploaded to Laserfiche. The documents for the imaged files have been recycled and are only available electronically. We plan to complete the water administration files in 2013.

Colorado River Cooperative Agreement

Negotiation of the Colorado River Cooperative Agreement (CRCA) continued in 2012 with the Division and State Engineer advising on administration questions. A draft agreement was signed in 2011 by several parties, including Denver Water, Grand County, Summit County, a consortium of interests in Eagle County, and various water providers in Garfield County. The remaining parties are awaiting a final agreement, which has been held up by the most critical piece of the agreement—the Green Mountain Reservoir Fill Protocol. The Colorado River Cooperative Agreement is the over-arching agreement that provides for the Moffat Firming Project, and includes the Green Mountain Reservoir Fill Protocol, and the Shoshone Outage Protocol, new sources for Summit and Grand County water supplies and Grand County environmental flows, and considerations for several water suppliers on the Colorado River. The water court applications by Grand County for RCID's on the Colorado River (10CW298), by Denver Water for a right of substitution using Fraser River diversions and Gross Reservoir in Water Division 1 (11CW121) are pieces aimed at resolution of Grand Counties water supply and environmental concerns. Case Number 10CW298 continues to progress through settlement negotiations. However, 11CW121 is currently on a trial track, and may not be settled for several years. The Shoshone Outage Protocol was completed in 2012. The Green Mountain Protocol Agreement requires that a State Water Court Application and a Federal Court Petition be filed to incorporate the Green Mountain Reservoir Fill Protocol into the Blue River Decrees. The parties to the Blue River Decrees (The United States, Denver Water, Colorado Springs Utilities, Colorado River Water Conservation District (CRWCD), and the Grand Valley Entities) will be drafting the Water Court application and Federal Court petition.

WATER DIVISION 6 (YAMPA/ WHITE RIVER BASINS)

Basin Hydrology

Snow Pack

Table 1 below shows the snow water equivalent for the period October 2011 through May 2012. Each month depicted indicates snow water equivalent being well below average resulting in a great deal of concern about water availability for beneficial use within the basin during WY 2012.



TABLE 1

End of Month Snow Water Equivalent as Percent of Average Water Year 2012

Drainage	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Laramie/North Platte River	72	87	70	68	80	61	36	7
Yampa/White River	59	89	64	64	78	54	32	7

Stream Flows

As a result of the low snow pack stream flows were obviously well below average. Provided in Table 2 below are the annual runoff values for the water year at select stations.

Table 2
Annual Runoff

Station Name	Historic Lowest Flow (AF)	Total Flow 2012 (AF)	Average (AF)	% of Average
North Platte River near Northgate	~66,240	139,000	311,000	45
White River below Boise Creek	~198,400	292,800	449,400	65
Little Snake River at Lily	~79,600	184,800	415,000	45
Yampa River near Maybell	~345,300	541,900	1,129,000	48

Water Administration

Water administration in 2012 was greater than what Division 6 typically experiences during normal to even slightly below normal precipitation years. In the North Platte River basin this included call administration on the Michigan River and its largest tributary, the Illinois River, as well as several other tributaries. In the Yampa River basin administration included, but was not limited to, normal calls on Bear River, the Hunt Creek systems, Morapos Creek, Little Bear Creek, along with a call on the Elk River that

extended for a much longer period of time than normal. In the Green River basin, call administration was only required on Talamantes Creek. Finally, in the White River basin, administration was only required on Piceance Creek, though one water commissioner did work with water users on the White River upstream of the town of Meeker to reduce diversions to and avert a call.

Of particular note was the call administration on the Elk River in 2012. There are two instream flow water rights on the Elk River in two different reaches; however, only one of these reaches (the lower one) is equipped with a gauging station (Elk River near Milner) to measure the flows of the river. Both of the instream flow water rights are decreed in the amount of 65 c.f.s. In 2012, the flows in the Elk River at the Milner gauging station began to dip very low and thus, on August 16, 2012, the CWCB placed a call for their water right in the lower reach. Despite curtailment to administer the call, the flows continued to remain well below 65 c.f.s. for a good portion of the summer.



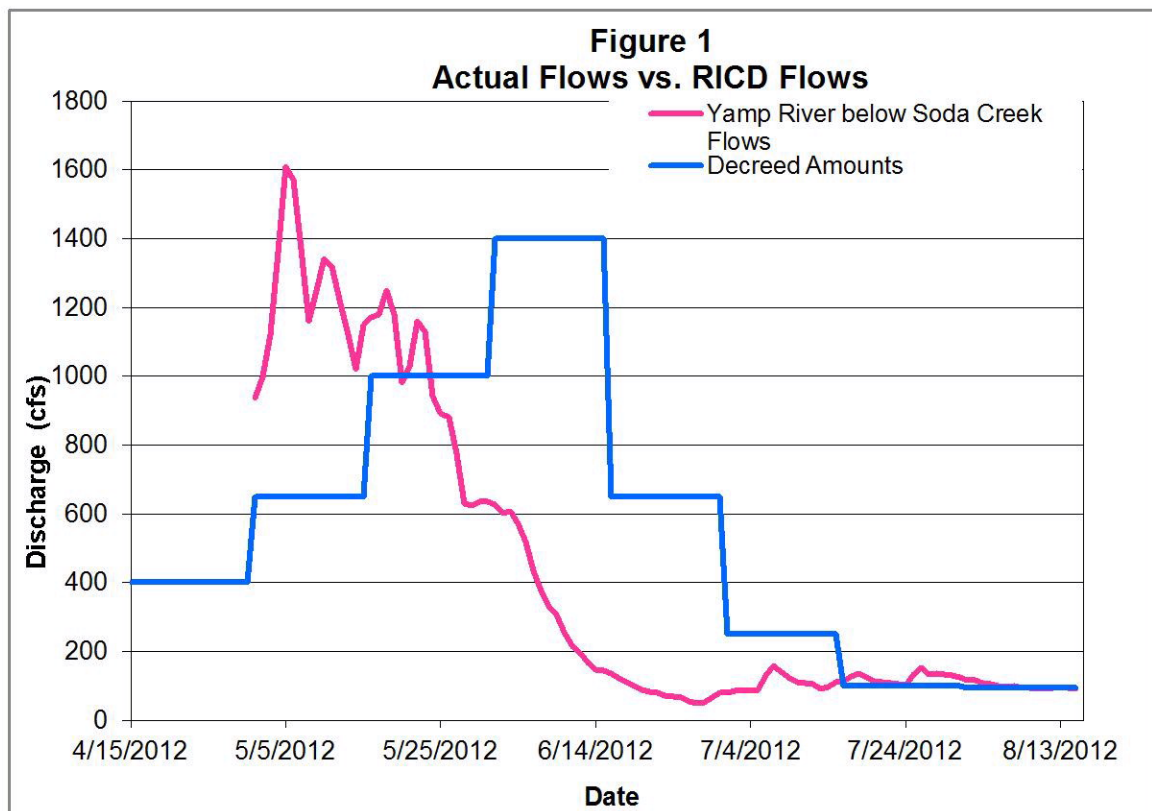
Due to this call many structures and water rights were curtailed within the entire Elk River basin; some of which were curtailed due to the fact that they were not equipped



with adequate water control or measurement structures and some of which because their water rights were simply junior to the instream flow water right. During this administration process it was determined that upwards of 150 structures were not equipped with adequate headgates or measurement devices, including staff gages on ponds. Efforts are currently being made to assure that the owners of these structures come into compliance with statutes that require the owner of a ditch or any other structure used to divert water from a stream to erect and maintain in good repair suitable and proper measurement devices.

Although the Yampa River has never been subject to administration as a result of a call for water by the City of Steamboat Springs for their Recreational In-Channel Diversion (RICD) water right, the office tracks the flows through the diversion in the event of a call. The decreed amounts for the RICD are: 400 c.f.s. from April 15 to April 30, 650 c.f.s. from May 1 to May 15, 1,000 c.f.s. from May 16 to May 31, 1,400 c.f.s. from June 1 to June 15, 650 c.f.s. from June 16 to June 30, 250 c.f.s. from July 1 to July 15, 100 c.f.s. from July 16 to July 31 and 95 c.f.s. from August 1 to August 15. Figure 1 below shows the average daily flows at the Yampa River below Soda Creek gauge station in comparison to the decreed flows. Reservoir releases from Stagecoach Reservoir, which are further described below, began on June 28 and ran through September 11 at a rate of approximately 26 c.f.s. with the exception of a short time period in August (August 17 through 23) when a larger amount of water was released from the reservoir for use by Tri-State Generation and Transmission (Tri-State). The flows in the Yampa River dropped below the RICD water right amount on May 20 and remained below the decreed

amount until July 16. Absent the reservoir water introduced into the stream system, the flows in the River would have been at or below the RICD water right beyond July 16.



In addition to administrative calls, releases from several reservoirs had to be protected. Normal reservoir releases for irrigation purposes from Walden and Meadow Creek Reservoirs in the North Platte River basin and Stillwater, Yamcolo and Allen Basin Reservoirs that had to be administered and delivered. Additionally releases were made from Stagecoach Reservoir, Elkhead Creek Reservoir, Steamboat Lake and Lake Avery that had to be protected. Releases made from these reservoirs were all, for the most part, for the purpose of sustaining environmental flows and done in cooperation with the CWCB.



Ultimately a total of approximately 11,100 acre-feet of water was released for these environmental purposes in the Yampa River basin in 2012. By way of comparison, approximately 12,600 acre-feet was released for irrigation purposes in the Yampa River basin.

Lysimeter Project

In September of 2010, a grant through the Yampa/White Roundtable process was awarded to the DWR and Colorado Climate Center in the amount of approximately \$20,000 to install new lysimeter plots and a weather station. Division 6 discontinued the operation and maintenance of the CYCC lysimeter site prior to the spring of 2011 with the thought that the new lysimeter plots, located on the Carpenter Ranch near Hayden, Colorado, would be installed and operational by late spring. It was not until November 2011 however, before the DWR and the Colorado Climate Center were able to move forward with the installation of the weather station and construction of the lysimeter



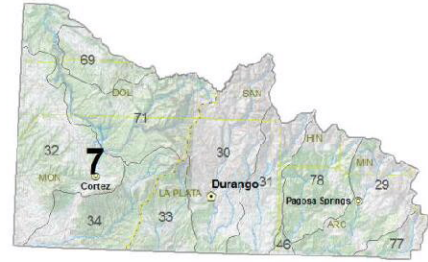
plots. In April 2012, the final touches of the installation of weather station were completed by the Colorado Climate Center and construction of lysimeter plots and buckets were completed by DWR.

Four plots were constructed at the lysimeter site; two of which were completed with sod from the surrounding grass meadow and the other two seeded with a hardy strain of orchard grass. Data collection and administration

of the site has started and the Division looks forward to the scientific information it will provide.

WATER DIVISION 7 (ANIMAS AND LA PLATA RIVER BASINS)

Water Supply



Snowpack in San Juan and Dolores River Basins during the winter of 2011-2012 followed the trend of the last several years with below average snowpack and earlier than normal runoff. Snowpack Division-wide peaked at only 75% of average. Snowfall in the early part of the season trended close to normal, but the lack of spring moisture and warmer than normal temperatures prevailed. Peak snowpack occurred in early April and runoff ended by late May. Both the peak snowpack and runoff occurred about one month earlier than normal.

Warm spring temperatures lead to early runoff across the Division. March temperatures ran 2° to 5° F above normal and runoff in the major river basins ran nearly twice as high as normal during the month. Higher than normal temperatures persisted throughout April and May, however the dwindling snowpack lead to only near normal river flows during those months. Melt-out occurred in most basins in the Division by the end of May and the area saw little new precipitation during the same period. Durango received less than one-tenth of an inch of precipitation in May and no precipitation in June leading to near record low seasonal flows throughout the Division in June. The Animas River ran 27% of average and the La Plata and Dolores Rivers ran 17% of average for the month. The area saw monsoonal moisture for a short period in July 2012, however, the weather pattern quickly reverted back to hot and dry conditions for the remainder of the summer and fall. River flows during August and September fell below 40% of average throughout the Division and the Animas River neared record lows in September and October. Of the 102 years of record, only September 1965 had a lower monthly total than September 2012 on the Animas River.

Surface Water Issues

Surface water administration during 2012 was somewhat challenging due to the early runoff and dry summer conditions. Basins with storage reservoirs were able to capture early spring runoff for later use while basins without storage were unable to take advantage of the early water. To start the water year, Vallecito Reservoir contained 59,450 acre-feet compared to its average end of water year content of 57,457 acre-feet (103% of average). McPhee Reservoir contained 300,063 acre-feet (114% of average), while Lemon Reservoir had 11,460 acre-feet (59% of average). Dry conditions through most of the summer months lead to a high demand for stored water, and by the end of the water year reservoirs were significantly depleted. Ending the 2012 water year and leading into the 2013 water year, Vallecito Reservoir contained 35,770 acre-feet (62% of average), McPhee Reservoir contained 199,943 acre-feet (72% of average), and Lemon Reservoir contained only 8,800 (46% of average).

Administrative calls were placed in many of the basins in the Division during 2012. Main stem calls were placed on the La Plata River, Mancos River, McElmo Creek and Pine River. Tributary stem calls in the Animas River drainage were placed on Elbert

Creek, Florida River, Junction Creek and Waterfall Creek; in the McElmo Creek drainage calls were made on Alkali Canyon, Hartman Draw and Simon Draw; in the Mancos River drainage call were made on the West Mancos River; in the Piedra River drainage calls were made on Devil Creek and Stollsteimer Creek; and in the San Juan River drainage calls were made on Coal Creek, Navajo River and Four Mile Creek.

Ground Water Administration

There were 243 well permits issued in Division 7 during the 2012 water year. Of these, 139 were exempt well permits were processed in the Durango office. There were also 91 non-exempt well permits, 10 monitoring well permits, two geothermal well permits and one dewatering well permit processed in the Denver office.

There are currently over 3,900 coal bed methane (CBM) wells in Division 7, 90% of which lie within the Southern Ute Indian Reservation boundary. Produced water from CBM produced water first became an issue and introduced into the Division 7 Water Court in 2005 in Case No. 05CW63, *Vance, et al., v. Simpson*. The Division 7 Water Court ruled that the Colorado State Engineer's Office has the authority to regulate produced water, that CBM produced water is a beneficial use, and that CBM produced water shall be considered to be tributary unless proven otherwise. In 2009 the Colorado Supreme Court tried Case No. 07SA293 and upheld the lower court's findings, and in 2010 the State Engineer promulgated rules to administer the water. The rules were challenged but were upheld by the court, except that a question remains of the State Engineer's authority to administer non-tributary groundwater within the Ute Reservation boundary. Today, tributary wells are administered under Substitute Water Supply Plans until a final ruling is made.

La Plata River Administration

Spring came earlier and cooler than normal. The junior ditches started to open up with insufficient flows in the river. By design and agreement, the river was held off call to share the water, thus allowing junior water rights a chance to divert.

Lake Durango Water Company also wanted water in a junior or off call situation. By taking the diurnal and delivering the high daily flows into the Pine Ridge Ditch (at night mostly), water was delivered to Lake Durango without impact to senior rights because only peak daily flows were diverted. This was only available a total of 4 days before the river was placed on call by the State of New Mexico.

Red Mesa Reservoir was also diverting during this time as well as the Big Stick, junior rights in the H&H, Treanor, and several others in tributaries to the La Plata River. More senior ditches like the Slade, H&H (41 & 51), Sooner Valley and Enterprise were also on. Hay Gulch Ditch was still taking winter flows of about 4 c.f.s.

A call was placed by New Mexico on April 6th at 10:00 AM, with priorities falling out very quickly. The La Plata & Cherry Creek Ditch was off by June 6th. The decision to

use the La Plata Cherry Creek ditch to deliver compact water was made the morning of June 13th and no flows going past the ditch heading were observed by June 15. All the water was bypassed to the compact by June 19th and continued until August 16, when a dry section appeared in Cherry Creek. A short time later the river dried up above the ditch heading. This scenario continued through October 31.

Construction on Long Hollow Reservoir started with a ground breaking ceremony on July 10, 2012. A Substitute Supply Plan for construction water was put into place and water started to be delivered to the Red Mesa Reservoir on June 7. Water was delivered to the construction site by ditch and pipeline, then, diverted to a pond in Government Draw for use. Later a larger pond was constructed on Long Hollow. Water was then exchanged and careful attention was paid to timing problems. Construction progress was impressive throughout the year with foundation excavation and embankment material preparation.

Hydrography

For many years hydrographers have metered San Juan-Chama diversions from the Blanco, Navajo and Little Navajo Rivers for delivery to New Mexico. In 2011, the Division began making discharge measurements at the Azotea Tunnel outlet near Chama, New Mexico. This effort was initiated to determine why there has been a significant difference in the sum flow total of the three diversions and the Azotea Tunnel. The three diversion points are located below ground and cannot be measured directly. The Azotea tunnel daylights into an open channel where it can be easily measured and the measurements made by CWDR hydrographers indicate the 10foot concrete Parshall flume at the outlet does not follow a standard rating. A new rating was developed from the field measurements and implemented in 2012. The US Geological Survey published record for the Tunnel outlet from 1970 through 2008, and the Division took over publication of the record in 2012.

As part of the Animas-La Plata Project, water will be released from Lake Nighthorse (aka Ridges Basin Reservoir) for use in Colorado and New Mexico. During July and August of 2012 DWR made discharge measurements of releases from Lake Nighthorse into Basin Creek. Measurements were used to determine the accuracy of flow meter on the reservoir outlet and to assess a transit loss associated with the delivery of reservoir water.

The Division requested the Montezuma Valley Irrigation District (MVIC) provide an updated bathymetric survey of Groundhog Reservoir. The results by the US Geological Survey, dated April 2012, indicate the reservoir capacity at the design spillway elevation to be approximately 2,700 acre-feet more than the storage water right. It was also discovered that the spillway elevation is 3.0 feet higher than originally designed. As a result, MVIC has applied for an addition storage water right under a junior priority, and the DWR Dam Safety Branch has ordered the spillway to be cut down to the design elevation.

Animas-La Plata Project

The Animas-La Plata Project (A-LP Project) is a federally owned and congressionally-authorized water project. The project facilities consist of an off channel reservoir, pumping plant and pipeline which diverts water from the Animas River south of Durango. Authorized purposes include providing water to the Colorado Ute Tribes as part of a congressionally authorized settlement, as well as serving Project Participants by delivering municipal and industrial water for use in Colorado and New Mexico. In 2010 a process commenced to develop an operating "Protocol" for water rights administration of the project. The purpose of this Protocol is to identify guidelines and provide a reference document for use by State and Division Engineers in the State of Colorado when administering the water rights in the Colorado related to the A-LP" Project. The Bureau of Reclamation (Reclamation) holds title to the A-LP facilities and has currently contracted with the Animas-La Plata Operation, Maintenance and Replacement Association (A-LP OM&R) to operate the project. The Southwestern Water Conservation District (SWCD) currently holds the projects appropriated water rights.

Many meetings were held and significant progress has been made toward development of the Protocol during the 2012 water year. Development of the Protocol has been a joint effort between DWR, SWCD and A-LP OM&R. Among other things, the Protocol describes how the Engineers will account for uses of Project water under the A-LP Decrees to maximize beneficial use and protect the vested water rights of others. It also identifies other relevant documents that define the Project.