STATE OF WYOMING

2011

ANNUAL REPORT

OF THE

STATE ENGINEER

STATE BOARD OF CONTROL

BOARD OF REGISTRATION FOR
PROFESSIONAL ENGINEERS AND
PROFESSIONAL LAND SURVEYORS

STATE BOARD OF EXAMINING WATER WELL DRILLING
CONTRACTORS AND WATER WELL PUMP
INSTALLATION CONTRACTORS

October 1, 2010 through September 30, 2011

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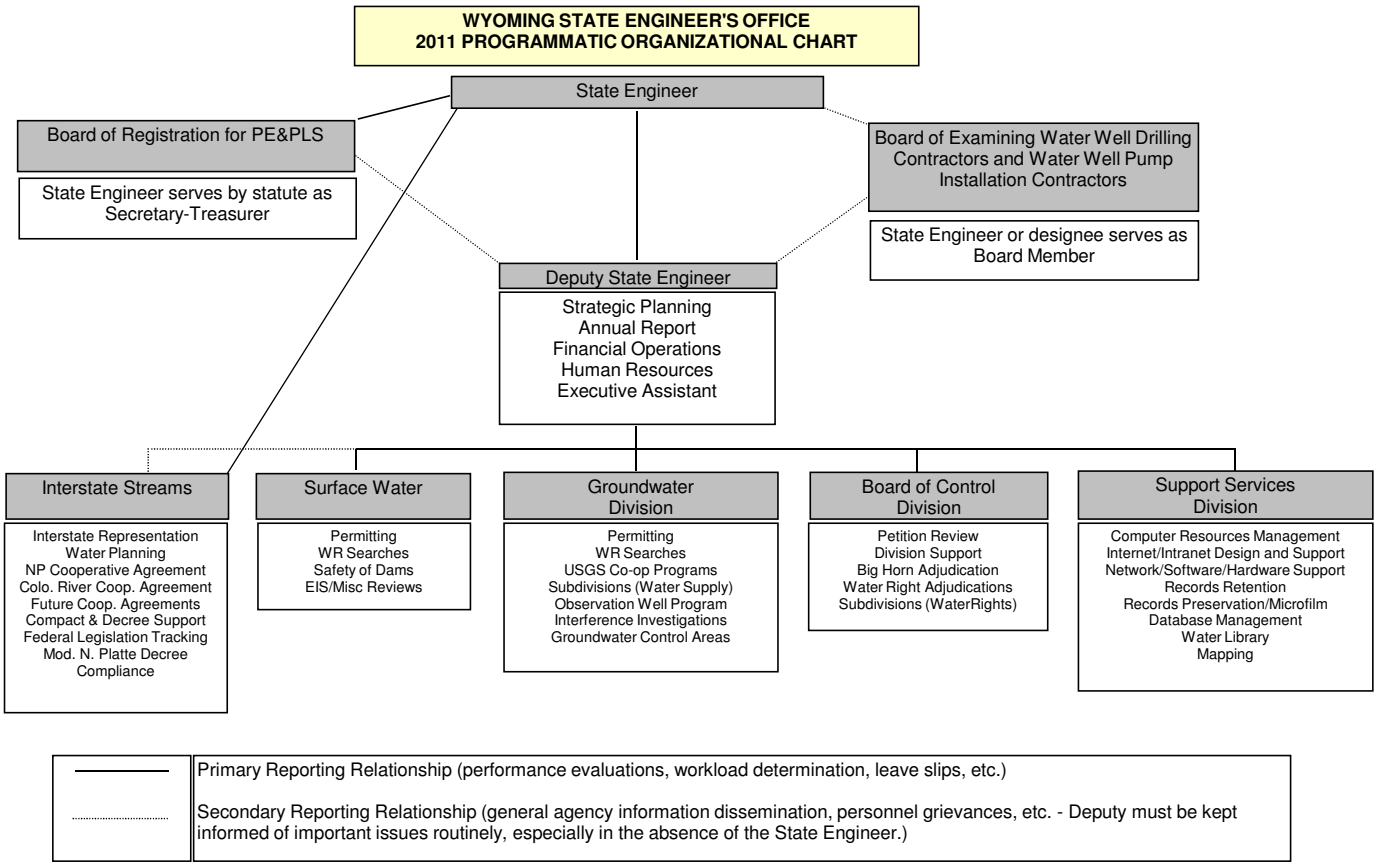
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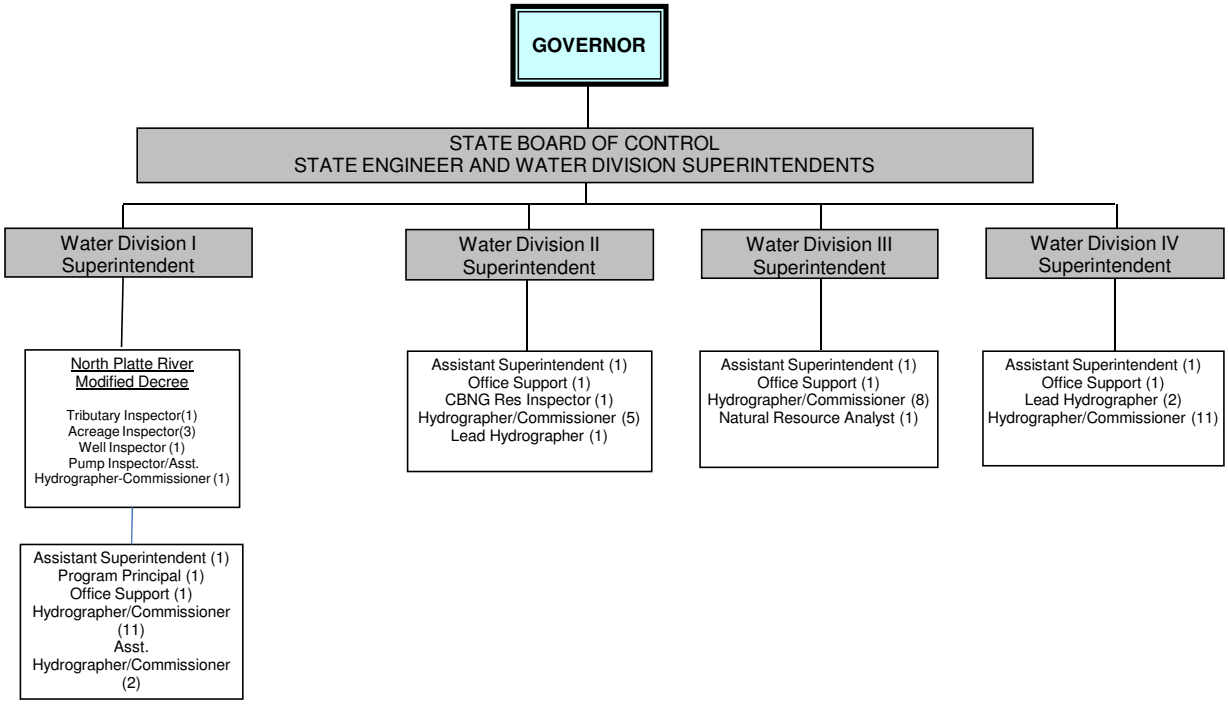
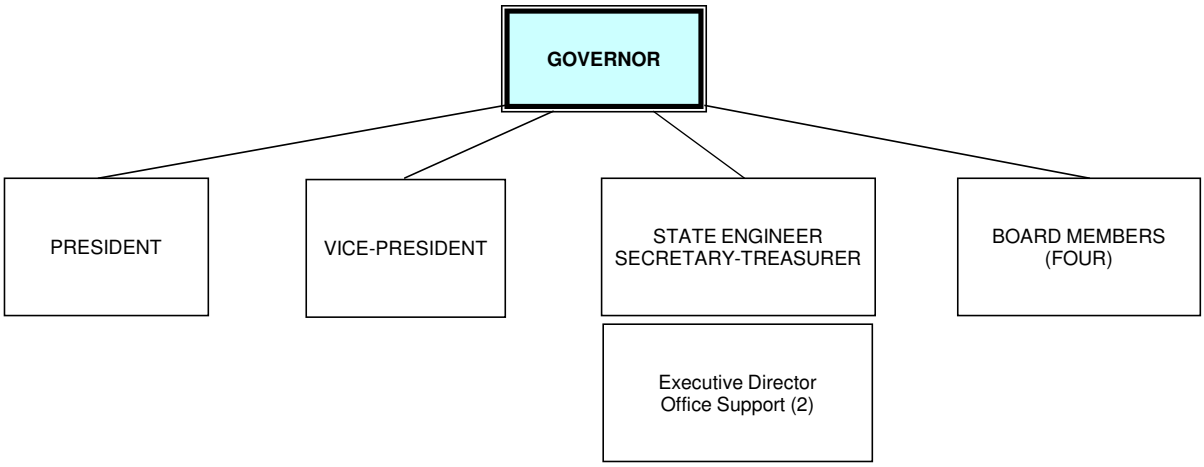
Primary Reporting Relationship (performance evaluations, workload determination, leave slips, etc.)
Secondary Reporting Relationship (general agency information dissemination, personnel grievances, etc. - Deputy must be kept informed of important issues routinely, especially in the absence of the State Engineer.)

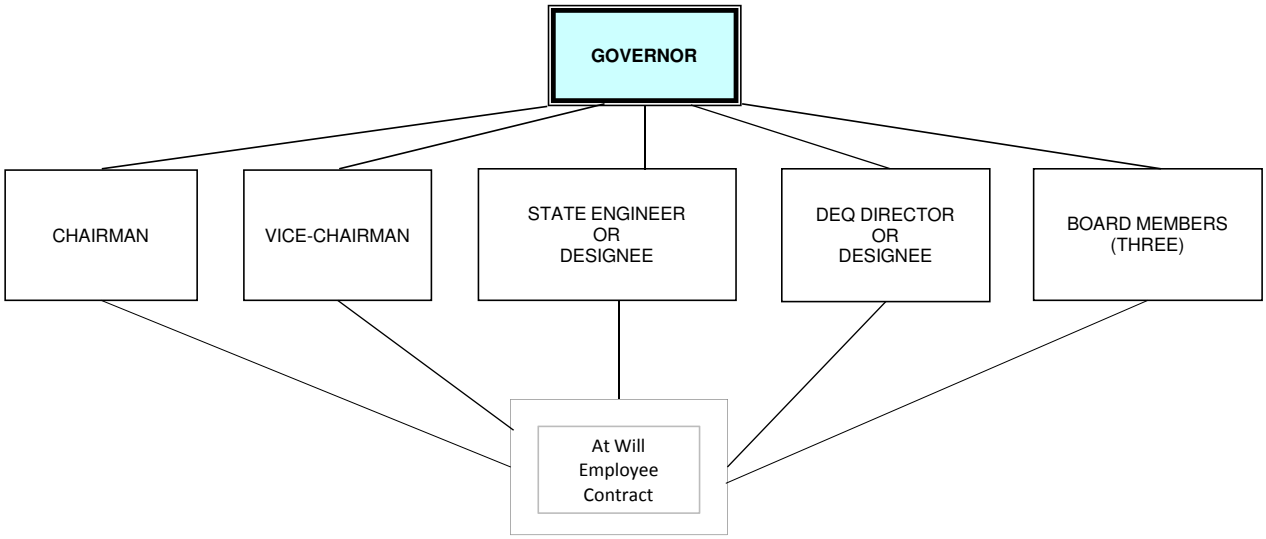
BOARD OF CONTROL
2011 ORGANIZATIONAL CHART



STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND PROFESSIONAL LAND SURVEYORS 2011 ORGANIZATIONAL CHART



STATE BOARD OF EXAMINING
WATER WELL DRILLING CONTRACTORS AND
WATER WELL PUMP INSTALLATION CONTRACTORS
2011 ORGANIZATIONAL CHART



Report of the State Engineer

Patrick T. Tyrrell, P.E.

In reviewing my 2010 report, the following was included at the end of the introductory section: *"Elsewhere around the state, normal to above normal runoff was seen in most of our rivers. While I opined last year that water year 2009 was the best year for water supply, statewide, since I took office, 2010 was even better. This is a trend that, as far as I am concerned, can continue."* In water year 2011, it certainly did.

Late snows and rains in the Wyoming brought prodigious water to streams and rivers almost statewide in 2011. We saw rains swell the Belle Fourche River below Keyhole Reservoir to around 5,000 cfs. Flooding brought Wyoming National Guard troops to Star Valley and the Saratoga area, as well as Fremont County. Staff from this office was asked to assist in flood emergency response efforts related to berm integrity and dam safety, in addition to providing general flow data in areas where no other entities had gaging information. We participated in statewide coordinating conference calls that, at one point, were held daily (including weekends). The North Platte River alone had its own series of planning calls that varied from weekly to several times per week during the peak of runoff.

Specific to the North Platte River, the inflow to Seminoe Reservoir totaled roughly 2 million acre feet. Because of relatively full reservoirs following the 2010 season, and because of significant tributary inflow below Seminoe, there was, just like in 2010, no draw on storage for irrigation in 2011. Therefore, we also sent roughly 2 million acre-feet of water down the river to Nebraska. In short, there was simply no place to put it.

From a water supply standpoint, 2011 was a stellar year.

The 2011 Economy

The national and regional economic downturn observed from 2008-2010 continued in 2011, although Wyoming seems to be holding its own relative to employment numbers and revenue. As this is being written, forecasts show Wyoming's fiscal situation to be stable if not robust, but concerns linger in the Governor's Office and the legislature about the sustainability of the cost of state government in the current revenue environment. The budget we prepared for the 2012 is therefore notably austere, and including the reprogramming of dollars to areas where we need additional resources. So, while Wyoming is in the black, there is a strong fiscally conservative sentiment in our governing offices.

Traditional Oil and Gas – Southeast Wyoming

Following a very busy year in 2010 working to keep up with demands for water for drilling and fracking oil wells in southeast Wyoming, 2011 was somewhat subdued. While the drilling and its demand for water continued, it did not occur at the pace we saw in 2010. Some temporary Water Use Agreements (TWUAs) issued in 2010 were cancelled, and only about a tenth of all the water embraced in those agreements was actually reported as sold. We did receive resources in the 2011 supplemental budget to hire one AWEC employee and engage a contractor in assisting our personnel in monitoring the water produced and used under TWUAs in the field.

The 2011 General session

A number of water bills surfaced in the 2011 session. First and foremost, two bills relating to water law were hotly debated but eventually defeated. One involved changing how the SEO, or really the BOC, issued certificates for stock use on state and public lands. Stemming from earlier decisions of this office not to add the names of grazing permittees to final certificates of adjudication, some legislators wanted to change the process so that either the fed's name was not on the certificate, or at least that the grazing entity's was. I testified against this bill as counter to our long-held process of attaching rights to the land by putting them in the name of the landowner, including when that owner was the federal government. We do not want to issue certificates to temporary tenants of the land. Once the bill was defeated, however, we were asked to continue working with constituents on the issue. So we did. That work resulted in a replacement concept whereby the land management agencies would be required to seek the consent of any affected grazing tenants before changing, abandoning, or moving a water right. That language, although still largely unnecessary, passed the joint agriculture committee in September of 2011. In the meantime, we are working on MOUs with the land management agencies that include the same language, and if those are successful our hope is the need for legislation will go away.

The second significant bill dealt with the desires of some to do away with the historic use test when seeking to move water rights long unused (but still on the books). Basically, this bill also sought to change a major tenet of our water law, which is the expectation of continued use to keep a certificate valid. Long story short, we were asked, again, to work with this group in 2011 to see if some compromise could be reached. What resulted was a bill that would allow such a change of a long unused right, but only if such a right is within an irrigation district and only if a public hearing was held and overt evidence showed no injury from the change. The concern is that resurrecting old unused rights would work an injury against newer junior rights if allowed to occur unchecked. Because of the number of "paper" adjudicated rights in Wyoming, this is a huge exposure, and an unfair one to others on any source of supply. While I did work on the language in this bill, albeit reluctantly, I am not enamored by it and see no need for it in statute.

Other water bills were introduced, and all failed. One sought to put the determination of beneficial use in the legislature, and another sought to invoke a mechanism for trading ground water and surface water uses in a creative application of the conjunctive use concept. Both failed.

Interstate Streams Issues

A number of issues arose, or continued, in 2011 in the interstate/regional arena. Many of these will be described in detail in that section of this report, but I will highlight a few.

In the Colorado River Basin, Minute 318 to the Mexican Treaty was signed, which allowed for the handling of "earthquake" water in U.S. reservoirs, thereby helping our neighbor to the south recover from the earthquake damage of 2010. Following that effort, work proceeded on a larger minute under which Mexico would share in shortages, and surpluses, on the river, and pave the way for creation and use of Intentionally Created Mexican Allotment (ICMA) as well as conservation projects and possibly environmental flows. It is hoped this minute will be finalized in early 2012.

In 2011 work was completed on an MOA wherein the Colorado River Basin states, CREDA, WAPA, and Reclamation all agree to a reallocation of funds allowed under the CRSPA. Under the MOA, funds to repay future "aid to irrigation" costs will be shared among the states. Because the projects envisioned by CRSPA are not materializing, the apportioned dollars will only be half of what otherwise would be collected, while reduction in power rates benefit CRSPA power users since half of the money need not be collected. However, the reduced dollars that are collected will be available for a much broader array of purposes than just "aid to irrigation." This agreement is a good deal for Wyoming, and was signed by Governor Mead on January 24, 2011. It is anticipated, based on the first year of operation, that there will be a need in the future for rules or criteria by which qualifying projects under the MOA are prioritized and recommended to the Bureau of Reclamation for expenditure.

In the Snake River Basin, Wyoming continued work on leasing part of its contracted storage in Palisades reservoir. The lessees would be in Idaho, and look to pools of water such as our account in Palisades to acquire, even temporarily, as a hedge against summer regulation in that state. Previous analyses, and discussions with WWDC and WGF, indicated Wyoming favorably viewed such a lease if the terms were right and our needs for the water are protected. During 2011, this lease agreement was executed.

Litigation

During the year, MT v WY continued, with oral argument on MTs exception to one finding in the Special Master's First Interim Report. That exception was one where MT disagreed with the Special Master's finding that improved irrigation efficiency (e.g. sprinklers) on original permitted acres was not a compact violation. We, of course, knew that the Master was perfectly

correct in his report, and that such operational changes are allowed. That oral argument was held in Washington D.C. on January 11, 2011. In early May, 2011, Wyoming won the point with a 7-1 Supreme Court decision. Later in 2011, two additional points were set for argument in front of the Special Master. The first was whether MT could expand the case to include Article V(B) claims as well as V(A), and whether Montana needed to make an overt "call" on Wyoming when the former state's pre-compact rights were being shorted. Those arguments were slated for late September, 2011.

In 2010, we lodged a complaint in District Court against Twenty Mile Land Company for, in essence, denial of access to do our work. This issue has been around for some time with this particular landowner effectively denying SEO access to inspect coal-bed natural gas-related reservoirs, while saying we could enter their property only if several conditions were met. Not wanting to saddle this agency with the precedent of only being able to enter lands (to do our authorized work) when allowed and only under conditions specified by the landowner, we were compelled to complain. This case was settled in 2011, with the resulting settlement specifying certain procedures for notice before the SEO could enter Twenty Mile lands for inspections.

Agency Notes

Water year 2011 was an eventful year for the agency. Dealing with flooding during the summer, deep snows in spring, and the usual calendar of regional and local water issues, kept this usually busy workplace humming. It was a busy year from a legislative perspective. Also, we saw changes in staff in the agency. While wishing Becky Mathisen well in her retirement, we saw new hires in the personages of Lee Arrington (ground water), Courtney Skinner (Division IV), Josh Voorhees and Ryan Bjerke (Division III), and Trista Nichols (BOC – Cheyenne).

Final Note

Water Year 2011 stood out for one additional reason. In January of 2011, I was reappointed as State Engineer and was confirmed by the state senate during the 2011 session. It is a pleasure, and an honor, to continue to serve the State of Wyoming in this capacity, and I appreciate Governor Mead's reappointment.

ADMINISTRATION DIVISION

by
Harry C. LaBonde, P.E.
Deputy Agency Director

General

The Administration Division is responsible for three separate functions in support of this agency. They include fiscal operations, human resources/personnel management, and support staff for the State Engineer. This group is also responsible for special agency projects such as the Biennium Budget, Annual Report, Strategic Planning, IT Initiative and the Agency's Health and Safety Program.

Fiscal Operations

This section is supervised by Mr. Steve Winders and is responsible for processing all fiscal transactions of the agency. In 2011 the agency developed its FY 2013-2014 biennium budget proposal which was submitted to Governor Mead in August 2011. The agency requested a total of $30,745,165 for the biennium. A breakdown of the budget proposal is as follows:

2013-2014 Budget Request

• Administration Division	$ 2,342,443
• Ground Water Division	3,878,069
• Surface Water Division	3,195,615
• Board of Control Division	13,054,822
• Support Services Division	3,577,102
• Board of Registration for Professional Engineers & Land Surveyors	868,804
• Interstate Streams Division	2,306,264
• Special Projects	12,730
• North Platte Settlement	1,333,765
• Water Well Drillers and Pump Installers Licensing Board	175,551
	$30,745,165

The majority of this request, $23,796,139 (77%) represents salaries and benefits for agency personnel. In 2011 the agency's employee count was authorized at 147 employees of which eight (8) positions were vacant and frozen under the previous administration of Governor Freudenthal. In the 2013-2014 budget proposal seven (7) of the frozen positions were eliminated from the authorized position total. As such the agency's budget request included the following positions:

- Standard Budget
  - Full Time 128
  - Part Time 11
  - At-Will Employee Contract (AWEC) 1
  - 140

- Exception Request
  - Full Time 4
  - Part Time (eliminate one position) -1
  - 3

- Total Position Request 143

Besides the four (4) position requests, three other exception requests were made, two of which are worth noting:

- $526,054 to replace Information Technology (IT) equipment including servers, personal computers, printers and plotters.
- $156,799 for software upgrades to e-Permit which will supplement $350,000 in the standard budget for system enhancements.

Human Resources/Personnel Management

Ms. Loretta Branigan is the agency's sole HR representative and she is responsible for all employee transactions. This includes payroll, personnel issues, employee benefits such as health insurance, and job recruitment.

In 2011 The State began the development of a new employee performance evaluation system. The effort is called Performance Management Initiative (PMI). A number of committees were formed by A & I to develop specific aspects of the system. Three SEO employees, Loretta Branigan, Steve Winders, and Jed Rockweiler, participated on these committees. As of September 30, 2011 the system is nearing completion and rollout is expected during the Fall of 2011.

GROUND WATER DIVISION

This Water Year 2011 (WY-11) report covers the time period from October 1, 2010 to September 30, 2011 and comprises two sections; the 1) Ground Water Section, and 2) Cooperative Programs. The Ground Water Section provides an update on the day-to-day activities of the Ground Water Division (GW); the Cooperative Programs section reports on the three programs administered by GW, including 1) Snow Survey, 2) Stream-flow Forecast, and 3) Subdivision Review Program.

GROUND WATER SECTION

By

Lisa Lindemann, P.G., Administrator,
John Harju, Assistant Administrator,
and the
Ground Water Division Staff

Objectives

The objectives of GW are:

1. To issue, record, maintain, and prepare permits for adjudication which grant the right to appropriate groundwater within the State of Wyoming and maintain a database of approved permits.
2. To resolve conflicts between groundwater users.
3. To conduct Control Area Advisory Board meetings.
4. To coordinate groundwater investigations involving the State Engineer's Office (SEO) and other agencies.
5. To investigate water well construction and enforce the "Water Well Minimum Construction Standards".
6. To protect the State's groundwater resources.
7. To investigate the occurrence of groundwater resources.
8. To monitor groundwater levels across the state.

Accomplishments

Application Processing and Recording

During WY-11, GW received 3,503 *Applications for Permit to Appropriate Ground Water,* an increase of 1,514 applications from WY-10. During WY-11, 2,546 applications were approved to permit status, 800 more than in WY-10. Fifty three (53) applications were rejected in WY-11, a decrease of 37 rejections over WY-10. In addition to applications for new appropriations of groundwater, 80 *Applications to Relocate &/or Deepen an Existing Domestic &/or Stock Well* were received and processed. Of those 80 applications, 45 requests to deepen and/or relocate

were approved, 5 deepen only requests were approved, and 30 relocate only requests were approved.

GW began internal implementation of e-Permit in September 2008. Since that date, GW has processed more than 8,000 permit applications in e-Permit. During WY-11, GW continued to struggle with e-Permit and meet the production goals established in the agency's Strategic Plan for processing applications. The inability to sort through thousands of applications in staff mailboxes was identified early on in the development of e-Permit but has yet to be fixed. Currently, the only way GW staff can identify a permit application that has been received and needs to be processed is to have a paper application to process so the electronic version can be identified and retrieved through the temporary filing number associated with the application - thus doubling the time it takes staff to process each application. While no time savings has yet been realized by utilization of e-Permit, the benefit of the system will be realized on the "back end". When all documents are finally entered into this system, the public will not only be able to apply for an application electronically, but they will be able to access all water-right related documents from the convenience of their own personal computer.

Permit Cancellation Program

During WY-11, eight hundred and fourteen (814) *Application(s) for Permits to Appropriate Groundwater* were cancelled because the permittee either failed to submit the required notices (i.e., the *Statement of Completion and Description of Well or Spring* and *Proof of Appropriation and Beneficial Use of Ground Water* forms) within the statutory time limits, no beneficial use of the state's groundwater had been made for an extended period of time (i.e., 7 to 10 years), or the permittee requested cancellation of the permit. This is an increase of 207 permits from WY-10. Abandoned wells for which the attendant water rights were cancelled totaled 1,055, an increase of 361 from WY-10. The figure for abandoned/cancelled permits is separate from the count for cancelled permits where the required notices were not filed. In the case of abandoned/cancelled permits, the wells were in use at some point in time and were subsequently abandoned, generally for physical failure.

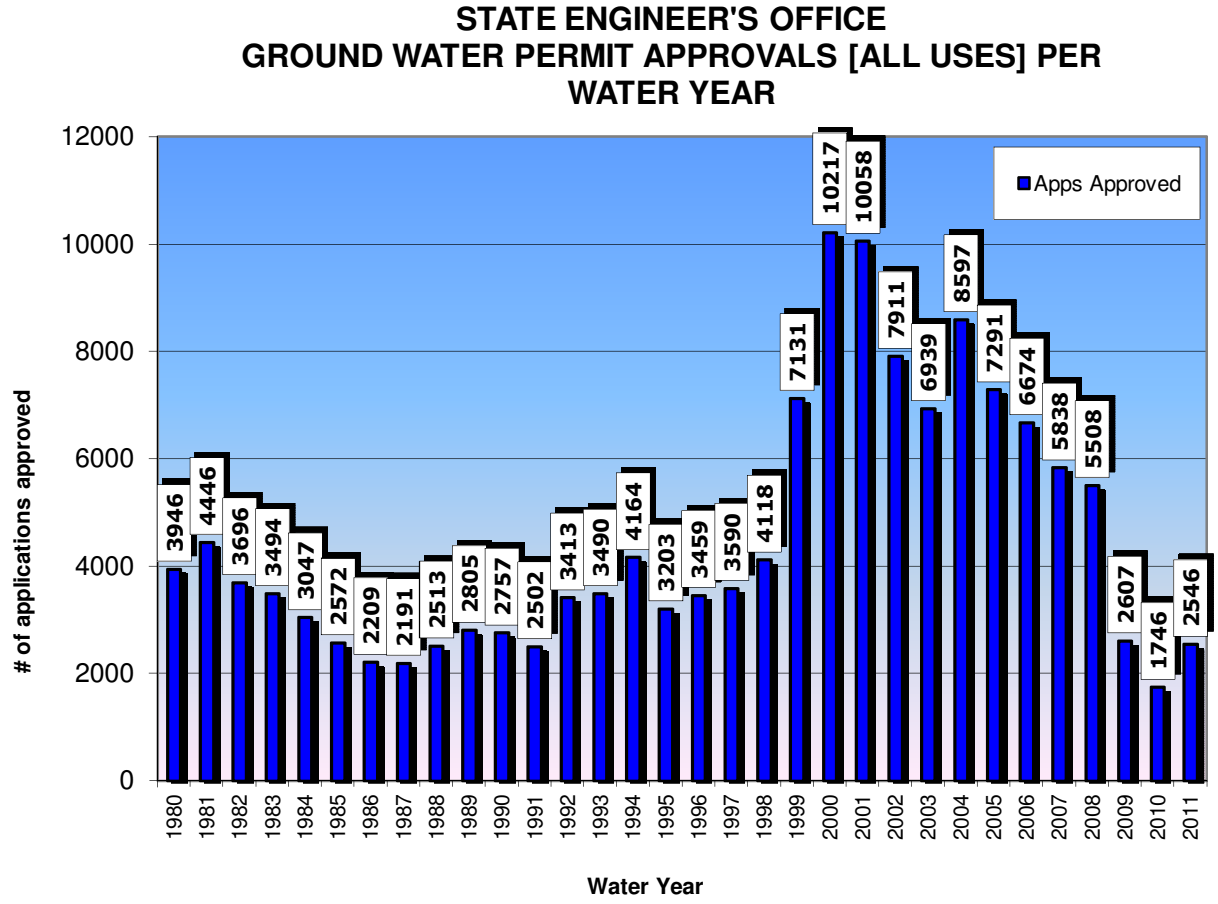
Two thousand eight hundred and five (2,805) expiration letters were prepared and mailed by GW, notifying applicants that their well permits were about to expire because the *Statement of Completion and Description of Well or Spring* or *Beneficial Use of Ground Water* forms had not been properly submitted. One thousand five hundred and eighty eight (1,588) fewer letters were sent in WY-11 than WY-10.

Three hundred and eight one (381) Coalbed Methane (CBM) Use permits were suspended due to the long-term production of water and the failure to produce gas from the well, and 36 permits were "unsuspended" or reverted back to "good standing" per the request of the company.

Permit Maintenance Program

The ownership of 393 groundwater rights were reassigned during WY-11, an increase of 291 assignments from WY-10. Requests for 1,803 extensions of time to provide a *Statement of*

Completion and Description of Well or Spring or *Proof of Appropriation and Beneficial Use of Ground Water* forms were received, processed, and approved, a decrease of 550 requests from WY-10. Sixteen (16) requests for additional points of use were received, processed and approved, an increase of 12 from WY-10. Two thousand nine hundred forty six (2,946) permits were updated with *Statement of Completion and Description of Well or Spring* or *Proof of Appropriation and Beneficial Use of Ground Water* forms.



Water Right Search Requests

Forty (40) major (i.e., more than a dozen) groundwater-rights searches were conducted for realtors, water resource consultants, and other interested parties during WY-11. The availability of the SEO's water well data through internet access has decreased the amount of search requests GW receives throughout the year. Numerous smaller water right searches are requested daily, either by telephone request or in person, but these are not reflected in the number referenced above. It is estimated the smaller requests range from 10,000 to 15,000 per year – primarily by real estate agents.

Two Year Review Letters

Conditions and limitations placed on observation and monitor well permits require a two-year review to determine if the well still exists or if it has been "mined out", plugged and abandoned, etc. However, due to other demands on staff time this task was not attempted during WY-10.

Adjudication of Water Rights

During WY-11, 216 water rights were inspected by GW staff and adjudicated by the Board of Control (BOC), including 120 water rights at the November 2010 meeting, and 96 at the May 2011 meeting. Additionally, 10 proofs were carried over at the November 2010 meeting and 8 proofs were carried over at the May 2011 meeting. In accordance with a Board decision during the November 2007 meeting, GW no longer presents new carryovers at Board meetings.

One hundred and sixty three 163) *Maps to Accompany Proof of Appropriation and Beneficial Use of Ground Water* were received in WY-11, representing 275 water rights to be inspected by GW staff (maps may depict more than one well or an enlargement of a permit).

Approximately 53.4% of the maps (87 of 163) were original submittals and 46.6% of the maps (76 of 163) were resubmittals of revised maps.

Existing Backlog

It is important to note that while the number of CBM permit applications received by GW has decreased from a high of 6,093 (2001) to a current volume of 654 (2011), a tremendous backlog of work accumulated from approximately 1999 through 2008 while GW devoted the majority of their limited resources to processing CBM applications in as timely a manner as possible. While current permit data is input into e-Permit as it is received, the backlog of data that need to be input is enormous. Additionally, GW is still feeling the effects of deferred permit management activities and is trying to address those activities with existing administrative support and technical staff. GW made two requests in the 2013-2014 Biennium Budget Request; 1) one additional ENNR09 position, and 2) one BAAS06 position to assist in reducing the backlog. The request for the ENNR09 position was included in the final Agency Budget Request.

<u>Data Entry (approximately 9,000 permit documents)</u>
These permit documents comprise cancellations, abandonments, statements of completion, assignments, beneficial use forms, amendments, etc. This information needs to be input into e-Permit and has been accumulating since approximately 2005. This task has historically been relegated to low priority but is critical to the proper maintenance of an active water right. A rough estimate indicates GW is at least two to three years behind in updating the electronic database after an action with a water right occurs. This is a source of frustration both to the GW staff and to the public who is gradually becoming reliant upon the electronic database (i.e., e-Permit) as a source of accurate water right information.

2-year Reviews (approximately 3,600 permits)
These are reviews of groundwater-monitoring well permits, conducted every two years per the Additional Conditions and Limitations attached to the permits. Two-year reviews have not been conducted for several years as it was deemed more important to dedicate GW staff time to entering historic data into e-Permit.

Statements of Completion and Beneficial Use Forms (approximately 6,000 documents)
When a Statement of Completion or Beneficial Use form is received, the administrative support staff must review the data submitted, and return the form to the appropriator or agent if a signature, global positioning system (gps) data, or pump information is not provided. Staff also writes letters for additional information concerning the completion of the well (e.g., static water levels, gallons per minute produced, perforated interval, depth of pump, etc.). Approximately 60% of forms received are missing data that staff need to obtain from the appropriator. The backlog from this process comprises approximately 5,200 forms.

As of February 2010, the in-house process was revised to two of the technical staff review the Statement of Completion and Beneficial Use forms for completeness. If additional information is needed, the technical staff contacts the appropriator or agent for additional information instead of the support staff, freeing their time to address other issues. Once the Statement of Completion and Beneficial Use form is complete, the form is returned to the support staff to endorse the permit and update the status in e-Permit. The support staff then checks for errors and if none are found, the permit is returned to the permit book. The backlog from this process comprises approximately 800 forms.

Assignments (approximately 3,000 documents)
Current assignments are primarily for CBM permits and oil and gas production wells. This is a backlog that was originally generated subsequent to the 2001 CBM industry ramping up and exacerbated by recent economic events which is forcing the smaller production companies to sell their assets to larger producers, and coincidentally, "assigning" the water rights to the new owners. The current backlog is primarily from 2009 and 2010 requests for assignments.

Cancellations and Abandonments (approximately 500 water rights)
These include all types of water rights that have expired and need to be pulled and cancelled, including requests for cancellation and abandonment. This is an ongoing activity.

Map Notification/Adjudication Required (approximately 6,050 maps)
These are water rights that need to be adjudicated but a proper Beneficial Use map has not yet been submitted by the appropriator. By statute, the appropriator has 2 years to adjudicate his water right. Since this process is appropriator-driven, compliance is low. It then falls on GW to generate the correspondence required to get the appropriator to submit the required information. This is an ongoing process – the 6,500 maps are a subset of approximately 194,000 permits (less Domestic and Stock Watering Use water rights). A proactive campaign by GW (via letter writing and phone communication) has successfully reduced this number in the past several years.

Problem Permits (SC/BU) (approximately 800 permits)

These include permits, statements of completion, and beneficial use forms that have been submitted by the applicant but cannot be accepted by GW due to missing data, failure on the applicant's part to provide data in a timely fashion, etc. This is an ongoing issue.

Permit Compliance and Reporting (approximately 3,500 water rights)
This is a task made possible by the actions of the 2006 Legislature who approved a "compliance coordinator" position for the GW Division. To date, the Compliance Coordinator has concentrated on reviewing the water rights of appropriators who have applied for a new permit or requested a change to an existing permit. GW estimates an additional 3,500 municipal, industrial and miscellaneous use appropriators still require compliance reviews. Currently, appropriators are brought into compliance with their existing water rights when they request a new permit or a change to an existing permit, thus opening up review of their existing water rights.

Field Inspections (approximately 350 inspections)

These are field inspections that need to be conducted by GW staff in order to adjudicate a water right.

Control Areas

Laramie County Control Area

Three (3) Laramie County Control Area Advisory Board meeting were held on November 10, 2010, February 3, 2011, and on April 13, 2011 in WY-11.
The Laramie Control Area Advisory Board elections were held on July 6, 2011. David Cummings and David Romsa were elected to serve terms ending in 2015.
Thirteen (13) *Applications for Permit to Appropriate Ground Water* were public noticed and reviewed by the board during WY-11. The Board then provided recommendations to the State Engineer as to whether the applications should be approved, rejected or denied.

Four (4) *Applications for Permit to Appropriate Ground Water* were advertised and approved during WY-11:

- Donald N. Wills, U.W. 194939, Enl. Grove #1; this application was for enlargement for additional use, points of use and volumetric quantity of water used per calendar year.

- SM Energy, U.W. 196444, Herrington Sec. 20 WSW; this application is for a new 200-gpm well. The well will provide water for oil and gas well drilling and completion operations conducted by SM Energy in 65 square miles located within portions of T. 13N., R.64.W., T.14N., R.64 and 65 W., and T.15N., R.65W. Upon completion of use for oil and gas well drilling purposes the well will be turned over to the landowner as a stock watering use well. There will be a total volumetric quantity of water used per

calendar year of 14 acre feet. The application proposes to produce water from the Lance/Fox Hills group of geologic Formations, an aquifer that is relatively lightly used by the residents of this general area.

- 307, Inc., U.W. 196043, 307 #1; this application was for a new 300-gpm well to irrigate a total of 160 acres. The well would also provide water for a tree windbreak and 4 stock tank. The well will also supply water for oil and gas well drilling and completion activities in all of Goshen and Laramie Counties in Wyoming as well as Weld County in Colorado. The well would also supply water to be used in a shop building and to supply a reservoir. There will be a total volumetric quantity of water produced of 200 acre feet per year. The application proposes to produce water from the Lance/Fox Hills group of geologic Formations, an aquifer that was relatively lightly used by the residents of this general area.

- 307, Inc., U.W. 195567, 307 #2; this application was for a new 25-gpm well to supply water to an office building for potable and sanitary supply. There would be a total volumetric quantity of water produced of 1 acre foot per year.

Four (4) *Applications for Permit to Appropriate Ground Water* were received during WY-10 and approved during WY-11:

- Champ, LLC and Bella Farms: U.W. 195060, Enl. 2nd Enlargement Marvin Anderson No. 2 Well is an enlargement for additional use and points of use only. The Marvin Anderson No. 2 Well, Permit No. U.W. 6845, located in the NE¼SW¼ of Sec. 34, T17N, R60W is adjudicated for 1050 gpm to irrigate a total of 122 acres located within the SW¼ of Section 34. Water under this Enlargement will be used for backup supply for all hog related uses and aquaculture uses served by primary supply under the 3M Trout No. 1 Well, Permit Number U.W. 139366, at the hog facilities located in the SE¼SE¼ of Section 33, Lot 4 of Section 26 and Lots 1 and 2 of Section 35, and the aquaculture facilities located in Lot 1 of Section 35, all in Township 17 North, Range 60 West, 6th P.M., Laramie County Wyoming, and in Lot 2, Sec. 31, T.17N., R.58W., adjacent in Nebraska. Water from the Marvin Anderson No. 2 Well under this Enlargement is to be a redundant supply and will be used for these purposes only if the 3M Trout No. 1 Well fails, is out of service for any reason, or to augment supply if the 3M Trout No. 1Well diminishes in yield below its permitted appropriation and the tow wells are not intended to be used for the same purpose at the same time. Effluent generated from water appropriated under this Enlargement will be stored in the same reservoirs and applied to the same lands as described in Permit No. U.W. 139366 for the 3M Trout No. 1 Well. There will be no increase in the amount of water produced (gpm) or total volumetric quantity of water (gallons or acre-feet) used per year supplied from this well.

- David A Duello: U.W. 194170, Duello 2010. This application is for a new 50-gpm well to be located in the NW¼SE¼ of Sec. 33, T15N, R60W to supply water to eleven [11] stock tanks in a feed lot located in the NW¼SE¼ of Sec. 33 and to four [4] existing stock tanks located in a permanent pasture within the following areas of use, SW¼SW¼,

SE¼SW¼, NW¼SE¼ and SW¼SE¼ of Sec. 33 and supply water to a tree windbreak via a drip system located in the NE¼SW¼ and the NW¼SE¼ of Section 33.

- Mark and Julia Ruppert. U.W. 194979; Ruppert Irrigation Well #1; This application is for a new 750-gpm well to be located in the NW¼NW¼ of Sec. 23, T16N, R66W to irrigate a total of 120 acres to be located in the NW¼ of Section 23 and to supply water for oil and gas well drilling in all of Goshen, Laramie and Platte Counties. There will be a total volumetric quantity of water produced of 185.668 acre feet per year. This permit was subsequently appealed by the applicant because oil and gas usage was removed from the permit.

  Mark and Julia Ruppert's application, T.F. No. 42-3-168, requested Irrigation Use and Miscellaneous Use from the proposed Ruppert Irrigation Well #1. Water from the well was to be used for mineral/oil exploration drilling, then converted into an irrigation well. Water was to be used in Laramie, Platte and Goshen Counties, Wyoming.

  The Laramie County Control Area Advisory Board reviewed the application on February 3, 2011 and recommended Approval of this Application. The State Engineer approved the Irrigation Use portion of the permit but denied the Miscellaneous Use for mineral/oil exploration drilling.

  On April 25, 2011, Mark and Julia Ruppert filed an *Appeal from the Endorsement of the State Engineer upon the Application for Permit to Appropriate Ground Water, Permit No. U.W. 194979.* A hearing was scheduled for September 21, 2011. At the request of the applicants, the appeal was vacated by the BOC on August 17, 2011. On September 16, 2011, the Rupperts filed an *Application for Preliminary Injunction and Request for Immediate Hearing* in District Court, contemporaneously with a *Complaint for Declaratory Judgement.* The issue was not resolved in WY11.

- 4 Quarters Land and Livestock, LLC. U.W. 195230; Enl. Torrie #1; this enlargement application is for additional use, area of use and total volumetric quantity of water used per calendar year. The Torrie #1 well is located in the NW¼SE¼ of Sec. 2, T15N, R67W and is used for fire protection and reservoir Supply and is permitted for 625 gpm. This enlargement is to provide water for oil and gas well completion, fire protection, road construction and other construction related purposes for all of Laramie and Albany Counties. There will be an increase in the total volumetric quantity of water (100,000,000 gallons) used per calendar year for a total of 105,000,000 gallons. This permit was subsequently appealed by the applicant because oil and gas usage was removed from the permit and the volumetric quantity was reduced to 1,518,465 gallons on the permit

  The 4 Quarters Land & Livestock, LLC enlargement application requested Miscellaneous Use (Enlargement of Permit No. U.W. 173371 for additional use, points of use and volumetric quantity). Water from the Torrie #1 well was to be used for "oil and gas well

production and completion, road construction, construction, fire protection for Laramie and Albany County".

The Laramie County Control Area Advisory Board reviewed this application on February 3, 2011 and recommended that the application be denied. The State Engineer approved the road construction, construction, fire protection uses in Laramie County (but not Albany County), and denied the oil and gas well production and completion use for Laramie and Albany County.

4 Quarters Land & Livestock filed an *Appeal from the Endorsement of the State Engineer Upon the Application for Permit to Appropriate Ground Water, Permit No. U.W. 195230*. At the request of the applicant, the appeal was vacated by the BOC on August 17, 2011. The issue was not resolved in WY-11.

Five (5) *Applications for Permit to Appropriate Ground Water* were rejected during WY 11:

- Brandon G. Phillips, T.F. No. U.W. 42-3-154; Phillips #2; This application is for a new 600-gpm well to be located in the NW¼NW¼ of Sec. 28, T13N, R64W to irrigate a total of 40 acres and to supply water for oil and gas well drilling of all of Goshen, Laramie and Platte Counties. There will be a total volumetric quantity of water produced 200 acre feet per year.

- Rex Energy Rockies, LLC and State Board of Land Commissioners, T.F. No. U.W. 42-2-157; Enl of State 22 WSW #1; This enlargement application is for additional use, points of use, yield, and volumetric quantity of water used per calendar year. The State 22 WSW #1 well is located in the NE¼NE¼ of Sec. 22, T15N, R64W and is for stock watering use with an appropriation of 25 gpm. This enlargement will provide water to drill two oil and gas wells one located in the NE¼NE¼ of Sec. 22, T15N, R64W and the other located in the SW¼SW¼ of Sec. 12, T15N, R64W. There will be an increase in the total volumetric quantity of water (8,040,000 gallons) used per calendar year for a total of 8,460,000 gallons, and an increase in the instantaneous rate of production of water (200 gallons per minute) for a total of 225 gallons per minute.

- SM ENERGY, Rodney Sharpe & Janet Goertz-Sharpe, T.F. No. U.W. 42-7-220; Sharpe 24 WSW; SW¼SW¼ of Sec. 24, T15N, R65W; This application is for a new 50-gpm well. The well will provide water to drill one oil and gas well and upon completion of use for oil and gas well drilling purposes, would be used to supply 1 stock tank located within the SW¼SW¼ of Sec. 24 at a rate not to exceed 25 gpm. There will be a total volumetric quantity of water used per calendar year of 4.5 acre feet.

- Warren Livestock, LLC. T.F. No. U.W. 42-6-289; Enl. Permit # P2372W Divide Ranch #1; this enlargement application is for additional use, points of use and total volumetric quantity of water used per calendar year. The Divide Ranch #1 well is located in the SW¼NE¼ of Sec. 32, T16N, R65W and is adjudicated for 1200 gpm to irrigate 182.4 acres located within Section 32. This enlargement is to provide water for oil and gas well

completion and road construction for all of Laramie County. There will be a total volumetric quantity of water used per calendar year of 1900 acre feet.

- Warren Livestock, LLC. T.F. No. U.W. 42-7-289; Enl. Permit # P11595W Divide Ranch #3; this enlargement application is for additional use, points of use and total volumetric quantity of water used per calendar year. The Divide Ranch #3 well is located in the SW¼NW¼ of Sec. 32, T16N, R65W and is adjudicated for 825 gpm to irrigate 156.6 acres located within Section 32. This enlargement is to provide water for oil and gas well completion and road construction for all of Laramie County. There will be a total volumetric quantity of water used per calendar year of 1000 acre feet.

Platte County Control Area

One (1) Platte County Control Area Advisory Board meetings was held in WY-11 on May 24, 2011.

The Platte County Control Area Advisory Board elections were held on July 7, 2011. Jennifer Burr and Brooke Berke were elected to serve on the Advisory Board until 2015.

Twelve (12) *Applications for Permit to Appropriate Ground Water* were received in the Platte County Control Area during WY-11.

The following thirteen (13) applications were approved during WY-11:

- Permit No. U.W. 196118, 2nd Enl. Riley No. 1, Keith Ockinga
- Permit No. U.W. 196057, Enl. Beach #1, Wyoming State Parks
- Permit No. U.W. 195732, Energy Park No. 1, Basin Electric Power Cooperative
- Permit No. U.W. 195733, Lauck Lot #1.
- Permit No. U.W. 195734, Lauck Lot #2.
- Permit No. U.W. 195735, Cimarron Heights Well #1.
- Permit No. U.W. 195838, Y-O 5 Well, Y-O Investments, Inc.
- Permit No. U.W. 195839, Y-O #4 Well, Y-O Investments, Inc.
- Permit No. U.W. 195840, Enl. Jirdon No. 1, Y-O Investments, Inc.
- Permit No. U.W. 195841, 2nd Enl. Jirdon No. 1, Y-O Investments, Inc.
- Permit No. U.W. 195842, Enl. Y-O Tracts #2, Y-O Investments, Inc.
- Permit No. U.W. 195843, 2nd Enl. Y-O Tracts #2, Y-O Investments, Inc.
- Permit No. U.W. 195844, Y-O Tracts #1 Well, Y-O Investments, Inc.

Notes on Y-O Ranch Estates:

  - Y-O Ranch Estates is a large residential subdivision located approximately one mile southeast of Wheatland that has existed since the early 1980's and contains 148 primarily residential lots. All of the referenced applications are for wells located within the boundaries of the subdivision in the SW ¼ and W ½ SE ¼ of Section 19 and the NE ¼ NW ¼ of Section 30, all in T. 24 N. R. 67 W.

- The subdivision is supplied water from the Jirdon No. 1 well, a 1,500 gallon per minute well, and the Y-O Tracts #2 well, a 300 gallon per minute well. The original permits for these wells authorize water to be supplied to 133 lots within the subdivision. Enl. Jirdon No. 1 and Enl. Y-O Tracts #2, if approved, would allow water from the wells to supply 15 additional lots that have been developed and occupied since the original permits for these wells were approved.

- There are plans for the future expansion of this subdivision, and the 2nd Enl. Jirdon No. 1 and 2nd Enl. Y-O Tracts #2, if approved, would allow water from the wells to supply 70 additional subdivision lots that have yet to be developed or occupied. One of the 70 lots would contain a 48-space RV Park.

- The Y-O 5 Well, Y-O #4 Well, and Y-O Tracts #1 Well are existing 250 gallon per minute wells that were drilled in the early 1980's and were designed to serve the subdivision, but are not currently serving the subdivision. The original permits for these wells have been cancelled due to non-use. These applications, if approved, would authorize water from the wells to supply the developed and proposed subdivision lots, but are primarily intended to be back-up water supplies for the subdivision, if needed.

- The total amount of water that would be authorized to be produced from these five water supply wells, in combination, would be limited to the amount of water necessary to supply the water needs of the subdivision at full build out, which is estimated to be 180 Acre-Feet per calendar year.

Prairie Center Control Area

The Prairie Center Control Area Advisory Board elections were held on July 13, 2011. Dennis Isakson and Elden Baldwin were elected to serve on the Advisory Board until 2015.

No Prairie Center Control Area Advisory Board meetings were held during WY-11.

Current Control Area Issues

As discussed in previous Annual Reports, the Laramie County Control Area Advisory Board is reluctant to make a recommendation to the State Engineer on any new irrigation well or high capacity well due to the impact it may cause to the aquifer. The Advisory Board has continually expressed concerns over the large number of domestic wells being drilled in the county. They are concerned that these types of wells are part of the cause of the dropping water levels in the area and would like to see these wells limited or stricter spacing regulations applied.

During WY-11, GW received several letters of concern over the filing of new well applications for Miscellaneous Use (i.e., hauling water for oil/gas well drilling from wells located within the Laramie County Control Area). Public concern led to a hearing regarding a new Irrigation Use well, proposed by Cody and Coralee Smith.

Hearing: Cody and Coralee Smith, TF. No. U.W. 42-1-310, Versatile Age No. 1 Well

After publication of notice of the Cody and Coralee Smith well application, T.F. No. U.W. 42-1-310, Versatile Ag No. 1 Well, Gary W. Smith and Helen Boyd objected to the issuance of the permit. A prehearing was held on June 9, 2011 to address the standing of the objectors. It was agreed upon by the parties involved to defer the prehearing until further information could be obtained, identifying the formation in which the well was completed. The applicants then filed a Supplemental Objection to the Contestants' Standing. In that filing, the applicants questioned the standing of Gary W. Smith and Helen Boyd to object to their application for a permit to appropriate groundwater. On July 19, 2011, the SEO directed that the objectors, Gary W. Smith and Helen Boyd, provide written responses to the applicants' question of standing. The continuance of the prehearing was scheduled November 3, 2011.

Recommendations from the Laramie County Control Area Advisory Board and subsequent actions resulting in endorsements of those permits led to two applicants appealing the State Engineer's endorsement of those permits:

Outreach

GW's time and resources were also spent attending public meetings, inviting speakers to address GW on timely issues, making presentations, coordinating with other regulatory agencies, reviewing water management and usage proposals, investigating groundwater supply problems, installing and maintaining monitoring wells, and fulfilling information requests related to CBM development.

GW staff presented at, or attended the following venues in WY-11:

- Use and Permitting of Water for Oil and Gas Drilling Activities, Cheyenne, WY (October 12, 2010);
- Use and Permitting of Water for Oil and Gas Drilling Activities, Pine Bluffs, WY (October 12, 2010);
- Use and Permitting of Water for Oil and Gas Drilling Activities, Torrington, WY (October 13, 2010);
- High Plains Economic Development District, SE Wyoming Oil Exploration Seminar Series: Part II, Cheyenne, WY (November 3, 2010);
- High Plains Economic Development District, SE Wyoming Oil Exploration Seminar Series: Part II, Wheatland, WY (November 4, 2010);
- High Plains Economic Development District, SE Wyoming Oil Exploration Seminar Series: Part II, Torrington, WY (November 4, 2010);
- All Operators Meeting, Cheyenne, WY (November 4, 2010);
- Community Meeting re Groundwater Wells, Tensleep, WY (November 17, 2010);
- Oil and Gas Development in Laramie County, Burns, WY (December 9, 2010);
- Wyoming Focus: Obtaining Temporary Water Supplies for Drilling Activities in Groundwater-Challenged Areas, Denver, CO (February 1, 2011);
- Obtaining Water for Oil and Gas-Related Activities in Southeast Wyoming, Albin, WY (March 22, 2011); and
- Hydraulic Fracturing, a Wyoming Energy Forum, Laramie, WY (September 26, 2011).

Modified North Platte Decree

Previous Annual Reports outline the chronology of events that led to the creation of the Modified North Platte Decree. The implementation of the Modified North Platte Decree continues to result in additional duties for the GW staff.

Reporting

During WY-11, GW continued to report to the NPDC, on a monthly basis, applications received, and permits approved, for Irrigation use permits within Wheatland Irrigation District, and for Industrial and Municipal use permits within the remainder of the Basin that is subject to these provisions of the Modified North Platte Decree were reported, including:

- three (3) applications for municipal use permits; and
- eight (8) applications for industrial use permits.

One (1) irrigation use permit within Wheatland Irrigation District, five (5) permits for municipal use, and six (6) permits for industrial use were subsequently reported as approved permits.

GW also reported the annual pumpage of ground water under 52 irrigation use permits within the Wheatland Irrigation District to the NPDC during WY-11.

Coal Bed Methane

The volume of Coal Bed Methane (CBM) exploration and production permit applications has continued to remain low during WY-11. GW received 654 CBM applications during WY-11. The following table provides a comparison of CBM permits approved by GW per water year.

Annual Report Year	Total Applications	Number of Companies
2011	654	*
2010	747	*
2009	706	*
2008	2157	30
2007	3405	34
2006	3632	56
2005	4784	52
2004	4758	39
2003	3938	48
2002	5663	58
2001	6093	55
2000	5811	86
1999	2532	51

*This search is no longer available.

In WY-11, lower natural gas prices, continued to impact the number of traditional CBM applications that GW received. It appears that the region's CBM operators are waiting for gas prices to rebound before investing in drilling new wells. During WY-11, CBM companies continued to focus on correcting past permitting errors or expanding existing permits by filing miscellaneous and/or stock enlargement applications for their existing CBM wells to add additional uses for stock tanks, reservoir supply and/or irrigation. These enlargement applications are not part of the CBM application totals reported.

Although staff time needed to process CBM applications has decreased proportionately to the amount of applications received, GW continued activities in WY-11 to identify CBM wells which, according to Wyoming Oil and Gas Conservation Commission (WOGCC), have at least a five-year history of water production with no attendant gas production. In WY-11 GW also reviewed CBM wells that were three-years old and had to meet a water/gas ratio of 10 bbl/mcf to maintain compliance with their permits. The most recent review of CBM wells in the Powder River Basin identified 507 wells and 24 operators who were required to "show cause". As a result of this effort, 26 wells were plugged and abandoned or are pending plugging and abandoning activities, 191 permits were suspended, 44 were cancelled, and 248 permits were kept active after providing additional technical information. The current "show cause" letters provide the opportunity for operators to provide additional information to justify why their well permits should remain in good standing.

On January 4, 2011 the Additional Conditions and Limitations attached to CBM permits were revised to include correct and updated review dates.
The Powder River Basin continues to be the largest area being developed for CBM and thus represents the largest proportion of permit applications received. Produced CBM water management continues to be a concern of CBM-development area residents.

Concerns related to produced CBM water management are outlined in previous annual reports and mainly center on the chemical nature of produced water and the construction of CBM produced water holding reservoirs which may hamper the ability of water right holders to exercise their appropriations. Concerns about water rights and water quality continue to initiate changes in the GW permitting process and in water management plans formulated by the CBM industry. Various water treatment and water use scenarios continue to be explored, including but not limited to, surface discharge, treatment and surface discharge, stock, domestic, reservoir supply, industrial water use, dust abatement, drilling of additional wells, fisheries, irrigation, and injection for aquifer storage and retrieval.

Observation Wells/Monitor Wells

Previous Annual Reports outline the development and spatial distribution of the observation well network maintained by the SEO. GW maintains a network of approximately 260 active observation wells throughout the state and a number of inactive observation wells pending rehabilitation or abandonment. Four (4) GW staff members are responsible for the observation well network. Field operations continue to be being handled by three staff in WY-11. Data reduction and data transfer for USGS cooperative programs was handled by one staff member in WY-11, GW plans to train additional staff in WY-12 to assist with the Cooperative Ground Water Data program.

During WY-11, GW staff continued to improve the observation well network and data collection efforts, including continued development of quality control and quality assurance program for ground water level data program, in-house programming of software for data warehousing and analysis to replace legacy software, acquisition and installation of new recording equipment, and continued compliance with the health and safety plan of the agency. These efforts began in WY-09 and continued thru WY-11 to facilitate the transition from legacy software to the AQUARIUS 3.0 Standard Edition Time series data reduction software package being used for Surface water record processing and data warehousing. GW anticipates this effort to continue into WY-12.

WY-11 has seen continued change, use, and dissemination of data from the SEO and Cooperative observation well networks. The following sections will expand on the activities of the observation well program.

Thermopolis Observation Wells

One observation well remains in service in the Thermopolis area. Observation Well GTW-3 continues to support projects in the area related to flow of the Hot Spring and impacts that ground water development may have on that geologic feature. Site maintenance and data collection activities are conducted by the SEO, while data review and publication are performed by U.S. Geological Survey (USGS) personnel. Observation Well GTW-1 continues to have down-hole mechanical problems. Based on a video log ran by SEO GW personnel During WY-10 recommendation on rehabilitation or abandonment has been made Resources to implement that recommendation were unavailable in WY-11.

Albany County Casper Formation Observation Wells

One Cooperative Program well and one SEO well are installed in the Laramie, WY area. These wells are completed in and used to track water levels in the Casper Formation. Data from these wells continue to be used as support for ground water development projects in the vicinity.

Laramie, Platte, and Goshen County Observation Wells

Data from these wells are utilized for decision support on issues before the Laramie County, Platte County, and Prairie Center Control Areas as well as tracking general trends in ground water levels in the respective areas.

Two wells, the Laramie County #15 well and the CC Meier well, (Lagrange, WY area of Goshen County) remain in an un-usable state and need rehabilitation, abandonment, and/or replacement. Funding has not been available to support those efforts to date.
Data from the Laramie County Observation well program were used extensively for Control area Advisory Board Recommendations and State Engineer actions. These data sites will continue to be valuable in support of processing and review of applications submitted for all uses within and subject to the Laramie County Control Area.

Data from Monitor wells in the LaGrange area of Goshen County Wyoming were used in a study related to surface water and ground water resource use issues in WY-11 (i.e., the Horse Creek Investigation).

Prairie Center Control Area and Madison Observation Wells

The Prairie Center Control Area and Madison observation well network is comprised of thirty two (32) observation wells. Twenty (20) of the observation wells are equipped with float driven digital water-level recorders. Four of the deeper observation wells have been equipped with pressure-sensing transducers and electronic data recorders. Water levels in six (6) wells are measured by hand using steel drop tape, airline systems or pressure gages. The final two (2) observation wells are in need of rehabilitation, however funding was not available during WY-11.

Gillette Area Observation and Subdivision Wells

These wells continue to be a source of information related to ground water developments in Campbell County and City of Gillette. One well, G-Mon-7, remains inactive and in need of rehabilitation, abandonment, and/or relocation.

Data from observation wells and active subdivision production wells in this area were used in WY-11 to address the feasibility of permitting additional appropriations for new subdivision and municipal use and to support actions of the State Engineer on new and existing permits. These wells are also being used for verification of reported water level declines in the Fort Union Formation, the details will be mentioned in the interference investigation section of this report.

Coal Bed Methane Observation Wells

Although CBNG development and production has slowed it remains a large segment of the mineral extraction industry in the Powder River Basin and other areas of the state.

Data from this series of wells continued to be provided to Gillette Area Ground Water Monitoring Organization (GAGMO) for modeling efforts related to the surface coal mining activities in the Powder River Basin.

U.S. Geological Survey (USGS) Cooperative Data Program

The Cooperative data program between the SEO and USGS continued in WY-11. Work on a guidance document on the use of different types of calibration measurement and recording equipment continues.

Internet access to cooperative monitor well data products is available at http://waterdata.usgs.gov/nwis/gw

Continuing Monitoring Efforts

As referenced in prior annual reports and previous sections in this report, the observation well network has several wells that are in need of rehabilitation. These wells have been temporarily taken out of service until funding is available for rehabilitation or abandonment. A down-hole video camera to evaluate the suitability for rehabilitation or abandonment of well bores was acquired in WY 2008 for evaluation of sites experiencing issues, work will continue as staff and financial resources allow.

Continued changes and additions to this program are aimed at better serving requests from governmental and public entities and to support the needs of the agency in providing permitting and management of the ground water resource of the State of Wyoming.

Interference Investigations

WY-06 - U.S. Fish and Wildlife Service – Saratoga Fish Hatchery

A formal interference complaint was filed by the U.S. Fish and Wildlife Service on July 17, 2006, which requested the SEO investigate interference to Lake Creek Lake from junior irrigation pumping by Kelly Land and Cattle Company. This second interference investigation for the U.S. Fish and Wildlife's Saratoga National Fish Hatchery will proceed in WY-12.

WY-11 – Mr. Gary Pettigrew – City of Gillette Fort Union Pumping

On August 24, 2010, Mr. Pettigrew contacted GW and claimed that the Pettigrew #1 Well (Permit No. U.W. 11026) was experiencing problems subsequent to the drilling, completion, and test pumping of three of the City's Municipal Use wells which were recently relocated and

deepened. On September 14, 2010, GW received a letter (dated September 10, 2010) which described the three wells Mr. Pettigrew felt were contributing to the decline of the Pettigrew #1 Well.

GW decided, based on the nature of the complaint, to investigate whether a formal Interference Investigation was necessary. The informal investigation noted:

1. Valid water rights appear to exist for all involved wells,
2. The Pettigrew #1 as completed is the shallowest of the involved wells,
3. It appears that the pump in the Pettigrew #1 could be lowered,
4. Gillette did change the screened zone during re-drilling activities,
5. It is not unreasonable to assume that development and aquifer testing of the new wells may have affected local water levels,
6. Hydrograph data indicate recent abnormal declines in Fort Union Aquifer water levels,
7. Increased pumping of Gillette's Fort Union Aquifer wells most probably is creating a greater impact on area wells that previously experienced, and
8. Drawdown-curve estimates indicate that production from Gillette's Fort Union Aquifer wells could impact the static water level in and around the Pettigrew #1 well.

These observations were presented in a December 29, 2010 letter. Also in that letter, GW recommended that Mr. Pettigrew not submit a formal interference investigation request. The letter further explained that any investigation would likely recommend that the pump be set lower in the Pettigrew #1 or that the City of Gillette provide temporary water until the severe pumping stops.

A formal interference complaint was filed by Mr. Gary Pettigrew on February 18, 2011, which requested the SEO investigate interference to his domestic use well by the City of Gillette. As of August 2011, Gillette had exceeded their annual Fort Union Aquifer production cap for the second year in a row. GW expects to collect monitoring well data during early WY-12. GW expects to use this data to conclude the interference investigation during WY-12.

Current Groundwater Issues

Horse Creek Investigation

An interference complaint was submitted, and accompanied by a $100 filing fee, to GW on April 1, 2009. The complaint, signed by 33 local irrigators, expressed concerns relative to changes that have occurred regarding irrigation practices for some areas adjacent to Horse Creek. According to the complaint, there have been a large number of shallow alluvial irrigation wells drilled adjacent to Horse Creek and these additional wells and changes to off-season irrigation practices have resulted in a significant reduction in stream flow available to fill Hawk Springs Reservoir and Springer Reservoir.

Based on the request that "all wells in the area to be regulated in priority to allow Hawk Springs Reservoir to fill", the SEO-GW determined that the request was not for an interference investigation, but rather a call for regulation (which should be appropriately directed to the local

Hydrographer). W.S. §41-3-603 provides the Hydrographer with the authority to "divide, regulate and control the use of the water of all streams, springs, lakes or other sources of water within his district as will prevent the waste of water or its use in excess of the volume to which the appropriator is lawfully entitled".

The SEO-GW agrees that the shallow wells in the Horse Creek area of investigation are most likely completed in the alluvial aquifer and are in connection with Horse Creek and its tributaries. As such, the wells could be subject to regulation and correlation with surface water rights, if groundwater and surface water are determined to be interconnected

In response to the April 1, 2009 request, the SEO-GW agreed to conduct a review of existing hydrogeologic data and literature for the area and determine if wells in the vicinity of Horse Creek, Bear Creek, and other tributaries are, in fact, so interconnected with surface water as to constitute one source of supply.

To regulate groundwater rights in conjunction with surface water rights, the State Engineer must have defensible data supporting the determination that "*underground waters and the waters of surface streams are so interconnected as to constitute in fact one source of supply"* in order for the field Hydrographer to correlate the priorities of rights to the use of all such interconnected waters and establish a single schedule of priorities which relate to the whole common water supply.

The purpose of this hydrogeologic study is to provide those data through development of a numerical model that will identify optimal conjunctive-use strategies. The model should address the effect of pumping wells on streambed infiltration and in-stream flows. The water management model will then be used by GW to analyze various water management plans and their impact on the stream-aquifer system and the delivery of irrigation water to groundwater and surface water appropriators.

GW released a Request for Proposal in May 2009. During June 2010, the Division secured Hinckley Consulting to conduct the Horse Creek Hydrogeologic Study. The draft report was received in July 2011 and the final report is due in October 2011.

Groundwater Use Related to Oil and Gas Activities in Southeast Wyoming

New techniques have made previously inaccessible oil from the Niobrara Shale beneath eastern Wyoming (Laramie, Platte and Goshen Counties), northern Colorado and western Nebraska economic to develop. The SEO received reports of approximately 1,200 wells being proposed from the Colorado/Wyoming border, north to Douglas. The new oil development relies on hydraulic fracturing, a technique that pumps large amounts of water, sand, and chemicals underground to fracture and open fissures in the target formation thereby improving the flow of oil and gas. Development of each well, combined with fracing, reportedly requires a minimum of 14 acre feet of water per well. To be economical, the water has to be obtained proximal to the well location, minimizing transportation costs.

Unfortunately, the state's three groundwater control areas (i.e., the Laramie County Ground Water Control Area, the Platte County Ground Water Control Area, and the Prairie Center Ground Water Control Area), or special groundwater management districts, are also located in southeast Wyoming. The establishment of groundwater control areas was largely based on diminishing availability of the groundwater resource and potential impacts to existing appropriators.

Oil and gas-related activities in southeast Wyoming has created a large demand for water supplies – some of which occur within the Ground Water Control Areas. The Surface Water Division currently issues all Temporary Water Use Agreements (TWUAs) which allow a temporary change of use from to another, not to exceed two years, including not only surface water rights but also groundwater rights. GW continues to request the State Engineer allow GW to issue groundwater-related TWUAs. Responsibility for developing the TWUAs will allow the Division to better manage the groundwater resource.

Education Efforts

GW staff launched an aggressive education campaign in WY-11, reaching out to private citizens, representatives from the oil and gas industry, local, state and federal entities, and SEO-contract personnel. GW's educational efforts included:

- Visiting forty six (46) oil and gas drilling rigs in Laramie, Platte, Goshen, Converse and Niobrara Counties in an attempt to educate industry representatives on how to legally obtain water for use in drilling and fracing activities.
- Meeting with all existing service companies operating in Laramie County who deliver fresh water to the oil and gas industry.
- Working with the Laramie County District Attorney and Laramie County Sheriff's Department on over size and overweight vehicles in Laramie County relating to oil and gas-related activities.
- Working with the Wyoming Highway Patrol - Port of Entry and M.E.E.T. (Mobile Education Enforcement Team) personnel to educate fresh water haulers about the SEO's TWUA requirements.
- Fielding over 1,500 phone calls from private citizens, local, state and federal entities, and SEO contract personnel and answering questions on SEO practices and policies relative to the oil and gas industry.
- Fielding approximately 300 phone calls from the oil and gas industry about the SEO's policies relative to industry use of groundwater and permitting requirements for new and existing groundwater sources.
- Training nine (9) contract staff from H2X LLC relative to performing compliance inspections for oil and gas-related activities involving the use of groundwater.

Compliance Activities

SEO

Conditions attached to TWUAs allow SEO staff to access the well and collect meter readings to verify reported water production from the well. A second condition requires not only metering and reporting of production from the well, but also quantification of the volume of water that is transported out of the state for oil and gas-related activities. This requirement is in compliance with W.S. 41-3-115 which limits the transference or use of water outside the state to 1,000 acre-feet of water per year without legislative approval.

Numerous reports of water hauling companies obtaining water illegally have been (and continue to be) received. To facilitate enforcement of existing water rights and promote legal use of water, GW staff routinely conduct field inspections of both permitted and unpermitted points of diversion

Continuing into WY-11, GW staff was tasked with enforcement of Temporary Water Use Agreements (TWUAs), as well as investigating points of withdrawal which did not have authorized TWUAs for oil and gas-related activities. In WY-11, GW investigated the following reports:

- Two wells in the Laramie County Control Area being used to haul water for oil and gas activities. GW found one well from which water was being hauled without an approved TWUA and brought the appropriator into compliance. GW was unable to locate the other well based on information provided.
- In excess of fifty (50) fresh water trucks hauling water without approved TWUAs. GW brought each of the water haulers into compliance.
- Eight (8) compliance issues associated with existing TWUAs (e.g., back flow prevention devices missing, no or faulty flow meters installed, no reporting, etc.). GW brought each of the appropriators into compliance.
- A municipality selling water for oil and gas-related activities outside their service district and without a TWUA.

Subsequent to investigating each report, GW staff was able to bring either the appropriator and/or the water hauler into compliance with SEO rules, regulations and/or policies. The State Engineer issued only one Cease and Desist Order in WY-11. .

No additional staff resources were provided to GW to address recent issues related to oil and gas activities in southeast Wyoming. However, the 2011 Legislature did allocate $310,000 to the agency for contract services associated with oil & gas impacts in southeast Wyoming.

H2X, LLC

H2X LLC was one of two consulting firms who submitted proposals to provide professional services for "Water Right and Usage Compliance Associated with Oil and Gas Related Activities" to the Department of Administration and Information Procurement Section. H2X LLC's proposal was selected and a contract was approved and signed by the State Engineer, Patrick T. Tyrrell. The contract provides for H2X LLC to provide professional services from June 13, 2011 through June 30, 2012 for an amount not to exceed $160,000. Contract and project management are provided by Phil Pucell and Peter Allee, H2X LLC. H2X LLC currently provides 5 field inspectors who are authorized to act on behalf of the State Engineer's Office to access wells and related facilities associated with oil and gas development in Converse, Goshen, Platte and Laramie Counties. H2X LLC is authorized to act on behalf of the State Engineer for purposes of verifying that wells and other facilities subject to review by the State Engineer are duly permitted and are being operated in accordance with permit conditions and limitations. H2X LLC is authorized to inspect, photograph, and verify locations of wells and associated facilities and to inspect Temporary Water Use Agreements upon request.

H2X LLC inspectors provide the following contract services:

- Insuring oil and gas-related water hauling activities are conducted in accordance with applicable State Engineer's Office-issued permits. During June-July 2011, H2X LLC inspectors reported one appropriator who was selling water under the wrong Temporary Water Use Agreement.
- Insuring water haulers have a copy of the current valid State Engineer's Order authorizing the temporary use of water for oil and gas-related activities in each vehicle used to haul water. During June-July 2011, H2X LLC inspectors reported one water hauler who was hauling water from four individual wells without an approved Temporary Water Use Agreement.
- Insuring appropriators who are providing water through Temporary Water Use Agreements (TWUAs) installed back flow prevention devices on the diversion from which they are producing water. During June-July 2011, H2X LLC inspectors reported two appropriators who did not have back flow prevention devices installed.
- Insuring appropriators who are providing water through Temporary Water Use Agreements (TWUAs) have installed a meter on the diversion from which they are producing water. During June-July 2011, H2X LLC inspectors identified one appropriator who did not have an approved meter installed.
- Insuring appropriators who are providing water through Temporary Water Use Agreements (TWUAs) are reporting the quantity of water produced under the TWUA on a weekly basis, including separate reporting of any water which was produced for use outside the State of Wyoming.
- Assisting field staff in insuring the acreage identified in a Temporary Water Use Agreement is not being irrigated in exchange for providing water for oil and gas-related activities.
- Investigating and documenting suspected misappropriations of groundwater and surface water.

- Reading meters and verifying production values reported to the State Engineer's Office are true and accurate.
- Identifying current and proposed drilling locations and assessing future water needs and potential water sources.
- Developing and maintaining field contacts with personnel in the oil and gas industry.
- Developing a working knowledge of the water requirements of the oil and gas industry, as well as timing of potential hydraulic fracturing activities.
- Tracking information relative to local rig counts and water demands.
- Conducting routine field inspections of both permitted and unpermitted points of diversion.

During WY-11. H2X LLC field inspectors focused their efforts in Laramie County. As contract work progresses, H2X LLC inspectors will expand first into Goshen and Platte County, as well as Converse County. H2X LLC inspectors will also work on developing an interagency network with state and local entities, and coordinating inspection activities with the Wyoming Highway Patrol, County Sherriff's Offices, Department of Agriculture, and Department of Environmental Quality.

Hot Springs Area of Concern

The Hot Springs County Commission is concerned about potential impacts to the Big Spring and would like the SEO to establish a control area that would be protective of the Big Spring. During the last several years, GW, the State Engineer, and the Water Division No. 3 Water Superintendent have spent a considerable amount of time trying to impress upon the Commission what a Control Area is designed to accomplish per statute and why a Control Area is not a viable option to rely upon to protect the Big Spring. Staff has also educated the Commission on the responsibility of the appropriator to insure their water right is in order and their responsibility to collect water level measurement data to effectively document the actual flows of the Big Spring. The application review process established several years ago is still in place. This process allows the Hot Springs County Commissioner to review all Ground Water applications that are received to drill a well within the area of concern and allows the county commissioners to make a recommendation to the SEO concerning the approval and or denial of an application. In WY-11 three (3) water well applications located within the Hot Springs Area of Concern were received. The applications (U.W. 195279, Jim 1, U.W. 195334, 2nd Red Farm No. 1, U.W. 195613, Smith No. 3,were approved to permit status.

Industrial Siting Projects

During WY-08, the Industrial Siting Administration began requiring project proponents to consult with the SEO to identify any concerns related to the potential water sources for projects which could result in significant delays in the issuance of SEO permits for the projects, regardless of whether the overall water use for the project met the threshold for the preparation of a Water Supply and Water Yield Analysis. No project proponents consulted with GW during WY-11.

Previous Annual Reports outline the role of the State Engineer in the required preparation of a "Water Supply and Water Yield Analysis" for projects under the jurisdiction of the Industrial Siting Administration which meet certain criteria. During WY-11, there were no projects initiated which required the State Engineer to prepare a Water Supply and Water Yield Analysis.

Cumulative Hydrologic Impact Assessments (CHIAs)

GW staff reviewed the following Cumulative Hydrologic Impact Assessments (CHIAs) in WY-11, at the request of the Wyoming Department of Environmental Quality – Land Quality Division:

- *Draft* Cumulative Hydrologic Impact Assessment (CHIA - #29) for the Haystack Mine (TFN 5 5/170);
- *Draft* Cumulative Hydrological Impact Assessment (CHIA-#28) for the Youngs Creek Mine Admendment (TFN 4 6/314) at the Ash Creek Mine, Permit 407;
- Cumulative Hydrological Impact Assessment (WDEQ-CHIA-27) of Coal Mining in the Middle Powder River Basin, Wyoming; and
- Draft Cumulative Hydrologic Impact Assessment (CHIA - #26) for the West Roundup Amendment Area (TFN 5 6/130) Black Thunder Mine, Permit #233.

Water Well Minimum Construction Standards

GW undertook a significant revision to the Water Well Minimum Construction Standards during WY-09. This resulted in final rules which were filed with the Secretary of State's Office during WY-10. During WY-11, the Division noticed two grammatical mistakes which required correction. GW was successful in correcting these mistakes and the corrected rules were filed with the Secretary of State's Office during June 2011.

Rules and Regulations

Concentrated efforts at revising the GW Division's Rules and Regulations (1974) commenced in WY-07. There have been many changes in the types of uses of water and in the manner in which water may be used for the production of other resources, necessitating the need for revised rules. There have also been many advances in the manner in which business is conducted through internet technology; surveys are performed through global positioning techniques; maps are created through computer aided drafting; money is transferred through internet transactions – all of these issues must be addressed in specific terms in the revision of the Rules and Regulations. Throughout this process, the intent of the laws that protect the priority system must be maintained. The "first in time, first in right" concept must be defined when the possibility exists that applications may be submitted in different formats; either through e-mail or hard copies through the U.S. Postal Service.

The extent of work required to update the rules was fully realized when GW staff had to prepare a typed version of the original rules from which to make changes, since an original electronic

copy did not exist. Draft rules and regulations should be complete and available for public review in WY-12.

Groundwater Management Strategy

As noted in the "Objectives" portion of this report, GW's responsibilities include protecting the State's groundwater resources. On October 27, 2005, the State Engineer gave a PowerPoint® presentation to the Joint Agriculture, Public Lands and Water Resources Interim Committee in Powell, Wyoming, entitled, "Challenges Ahead: Effectively Managing Wyoming's Ground Water Resources". The ensuing discussion centered around current groundwater management issues facing the SEO, the need for the SEO to take a proactive stance relative to groundwater management, and the need to develop the management tools necessary to effectively manage Wyoming's groundwater resources.

On December 31, 2009, GW requested the State Engineer obtain an opinion on the agency's legal ability to proceed with the development of a management plan under existing statutes. A meeting with the Agency's attorney general, the State Engineer, Deputy Engineer, and GW staff was held July 7, 2010 to review the ensuing opinion. During that meeting, it was determined that rules, not policies should be developed as needed to implement the plan, as policies do not enjoy the benefit of public input. The State Engineer also requested GW to provide their first deliverable in the form of a recommendation, i.e., what strategy or combination of strategies do we recommend be implemented in the state, as well as alternatives, together with an analysis of how the proposed strategy or strategies will affect both current appropriators and those who wish to appropriate groundwater in the future. The only limitation provided by the State Engineer was that he would not support a "no mining policy."

Receiving approval and support from the JAC, GW proceeded with the first of three defined tasks relative to the "implementation of a plan to develop a groundwater management strategy for the state". Those tasks, together with target completion dates (if available) established by the State Engineer, are provided below:

1. Develop and analyze alternatives (December 1, 2011);
2. Public outreach; and
3. Develop statutory revisions if needed.

The first task, "Develop and Analyze Alternatives," entailed learning what other states and/or governmental entities have done relative to groundwater management. This included:

a) Collecting information on ground water management in other jurisdictions.
b) Comparing and compiling the data.
c) Evaluating the different approaches to management and determining what may work in Wyoming.
d) Developing a list of the key components in a management plan.
e) Developing a list of practical management goals.

This first task was completed during June by submitting a brief synopsis of the alternatives that may be viable groundwater-management goals. The division expects that many of these alternatives (in conjunction) may be necessary in order to manage the multitude of hydrologic conditions and situations present across the state. GW is currently awaiting direction from the State Engineer on how to proceed with implementation of a statewide groundwater-management strategy.

Ground Water Advisory Committees

W.S. 41-3-908 requires one division advisory committee on underground water for each water division of the state. Each committee consists of three persons, appointed by the Governor, who represent the landowners and water users of the division, geographical areas of the division, and public interest. Committee members are appointed for 6-year terms.

Duties of the Ground Water Advisory Committees include:

- Call/supervise election of control area advisory board members;
- Assist/advise State Engineer and the BOC on policies affecting groundwater – assistance/advice should consider both the interests of groundwater users and the general public;
- Assist/advise state engineer and superintendents in solving groundwater problems as they arise within the Division;
- Assist/advise the Control Area Advisory Boards – particularly in the development of control measures which are recommended to the State Engineer for adoption; and
- Provide information to groundwater users within the Division relative to the State Engineer's and BOC's policies and procedures which affect the use of groundwater.

Several vacancies on the Ground Water Advisory Committees were created when members' terms expired. GW's recruiting campaign was marginally successful in generating interest from new members.

Due to the formation of the interagency *State Ground Water Committee,* the difficulty in finding volunteers to participate on the Ground Water Advisory Committees, and the redundancy of duties of both committees, the State Engineer considered presenting legislation repealing the following section from Title 41, Chapter 3, Section 908:

In response, Governor Mead's staff recommended the vacancies be filled with Water Development Commission members and the advisory committee meetings could be held in conjunction with Water Development Commission meetings. The Governor then appointed seven new advisory committee members from the membership of the Water Development Commission

One joint meeting of the Ground Water Advisory Committees was held in WY-11. The meeting was scheduled to coincide with the regularly scheduled Water Development Commission meeting in August 2011.

A public notice, announcing the new committee members, as well as their statutory mandate, was printed in October 2011.

Staff Changes

Unfilled Positions

Due to the Governor's Executive Order 2009-3, signed April 7, 2009, GW has not been able to fill a position vacancy left by the promotion of one of the technical staff.

Arrivals

Terry Carpenter began working as an Office Support Specialist I with GW on February 14, 2011. Terry was previously employed by the BOC as an Administrative Clerk. Prior to being employed by the SEO, Terry was the Customer Service Manager for Bank of the West in Cheyenne. Terry is a most welcomed addition to GW – she has been quick to learn GW's procedures, became instantly proficient in e-Permit, demonstrates an excellent work ethic, and keeps us laughing with her wicked sense of humor.

Lee Arrington began working with GW on July 5, 2011 as an ENNR10. Lee has a bachelor's degree in Wildlife and Fisheries from Texas A & M and 8 years of experience managing the Midvale Irrigation District, one year as the manager of the Llano Estacado Underground Water Conservation District, and 7 years as manager of the South Plains Underground Water Conservation District.

Departures

Roxanne Trujillo, Office Support Specialist II, resigned from GW on September 16, 2010 to accept a position with the Board of Control. Roxanne was a GW employee since November 2005. Roxanne was the recipient of the Floreine E. Clark Memorial Scholarship in WY-10 and is currently working on her Associate's degree in Business Administration. GW misses Roxanne but congratulates her on her promotion and wishes her well!

Reclassifications

GW was successful in reclassifying three positions in WY-11;

1. George Moser was reclassified from a ENNR09 (Natural Resources Analyst) to an ENNR10 (Natural Resources Program Principal), effective April 1, 2011 with the ultimate goal of reclassifying the ENNR10 position to an ENGE11 (Senior Project Geologist) position subsequent to George passing Wyoming's Professional Geologist examination (expected in WY-12). Reclassification of the ENNR09 position to an ENGE11 position accurately reflects the primary functions required by this position and allows GW to provide needed, in-house, hydrogeologic expertise to insure the agency's responsibilities mandated by statutes and rules are handled professionally and in a legally

defensible manner. Without the ability to provide this level of expertise, GW must contract with outside consultants – an activity largely limited by budget constraints. Providing a high level of technical hydrogeologic expertise on staff allows the Division to provide scientific services expeditiously and be responsible to appropriators. Creation of this position fulfills a longstanding GW goal in providing invaluable, in-house hydrogeologic and geotechnical expertise that is unique to not only GW, but to the SEO.

2. Jeremy Manley was reclassified from an ENNR09 (Natural Resources Analyst) to an ENNR10 (Natural Resources Program Principal) position, effective July 1, 2011. Jeremy has been employed by the SEO since April 1999, starting as a Water Management Specialist 2, and promoted to a Water Management Specialist 1 in October 1999. Jeremy has a Bachelors degree in Range Management, and a Masters degree in Soil Science – both from the University of Wyoming. Reclassification of the ENNR09 positions to ENNR10 positions allowed a reorganization of GW's technical staff to provide mid-level leadership positions and allow for succession planning as senior staff retire or move to other positions.

3. Lee Arrington was reclassified from an ENNR09 (Natural Resources Analyst) to an ENNR10 (Natural Resources Program Principal) position, effective July 1, 2011. Lee has a bachelor's degree in Wildlife and Fisheries from Texas A & M and 8 years of experience managing the Midvale Irrigation District, one year as the manager of the Llano Estacado Underground Water Conservation District, and 7 years as manager of the South Plains Underground Water Conservation District. Reclassification of the ENNR09 positions to ENNR10 positions allowed a reorganization of GW's technical staff to provide mid-level leadership positions and allow for succession planning.

COOPERATIVE PROGRAMS SECTION

By
Mike Ebsen, Cooperative Programs Coordinator

The Cooperative Programs Section coordinates two ongoing programs and provides technical support in other areas as assigned. The primary objectives of each program are as follows:

1. The objective of the Snow Survey and Stream Flow Forecast Program is to provide current information for the State Engineer and all water users, managers, and planners on seasonal mountain snowpack accumulations as the season progresses, and the resulting projected snowmelt stream flow prior to runoff. This information, in turn, helps water users to realize the most efficient benefit from this limited and transient resource.

2. The objective of the Subdivision Review Program is to identify and comment on water right issues associated with county subdivision permit applications that have been submitted by the Department of Environmental Quality for State Engineer review.

Snow Survey and Stream Flow Forecast Program

Accomplishments

Snow surveys are conducted by Natural Resources Conservation Service (NRCS) personnel, State Engineers Office (SEO) personnel, and others. Surveys are conducted during the last week of each month and the results are presented four times each year, beginning February 1st and continuing until May 1st, for the 63 manually measured snow courses, and daily at the 87 automated snowpack telemetry (SNOTEL) sites throughout Wyoming. Snow survey personnel manually measure snow depth and density, as well as provide winter maintenance on SNOTEL sites throughout Wyoming on an as-needed basis. These activities regularly require snow survey personnel to travel to remote locations under potentially adverse conditions. For these reasons, participants are required to complete special training in snow survey and snow survival techniques, maintain current first aid and CPR certifications, and undergo annual physical exams.

SNOTEL sites are automated, radio-telemetered, snow pack data-collection sites and are generally located in remote, yet hydrologically significant, areas throughout Wyoming. These sites provide equivalent water depth of the snow pack (SWE), as well as precipitation, air temperature, and in some cases soil moisture and temperature. SNOTEL sites electronically relay data, at regular intervals, to a central collection point in Portland, Oregon. Data can be collected at almost any interval, but is generally collected at four to six hour intervals. Data collected once each day is normally adequate for water supply forecasting, but avalanche forecasting and other recreational users may need the data on a more frequent basis. Each SNOTEL site has the capability of handling up to 64 sensors. As more sites are added, and the confidence level of data collected with SNOTEL sites improves, labor intensive manual snow measurements will be reduced.

Stream flow forecasts are the end result of these snow data collection efforts, and have proven a valuable tool for those involved in water management and planning. Stream flow forecasts are currently available at 54 locations in Wyoming. Flows at these sites are forecast six (6) times per year beginning on the 1st of January and ending on June 1st. Virtually all of these stream flow prediction sites have been selected as the direct result of input from local water users. These sites require the presence of an active stream gage at or near the forecast site to calibrate and refine the prediction models. Complex planning issues involving all areas of the public and private sectors including the administration of interstate compacts and court decrees, flood forecasting, reservoir carryover storage, in stream flow, and power generation require information in advance of the runoff season to be proficiently addressed. Decisions in areas including agriculture, industry, and municipal water supply are simplified through the availability of these forecasts. The State Engineer again contributed $2,000 to this program, in addition to personnel and equipment, to aid in the collection of snow survey data. This snowpack and stream-flow prediction data are available to users via the Internet at: http://www.wrds.uwyo.edu/wrds/nrcs/nrcs.html

The NRCS and the State Climatologist, with input from the State Engineers Office and others, have cooperated to upgrade and instrument several sites throughout the state with SNOTEL capabilities. Four upgraded, and two new sites have been instrumented with SNOTEL equipment, and are now up and running. Instrumentation costs have run from $25-30,000 per site. These sites are:

Blackhall Mountain,	9820'	new	Upper North Platte	Division I
Little Goose,	8870'	new	Powder-Tongue	Division II
Soldier Park,	8720'	upgrade	Powder-Tongue	Division II
Castle Creek,	8400'	upgrade	Wind River	Division III
Larson Creek,	9000'	upgrade	Upper Green	Division IV
Pocket Creek,	9360'	upgrade	Upper Green	Division IV

Problem Areas and Recommendations

Certain instrumentation components continue to exhibit some degree of unreliability and may require additional site visits to verify that these sites are operating optimally. Therefore, annual snow survey coordination meetings are held every fall in an attempt to recognize, identify, and plan how these and other concerns are to be dealt with, prior to the onset of the snow season.

Because of innate fluctuations in snow pack measurements, and the effects of weather patterns prior to and during the measurement and runoff periods, snow surveying and stream-flow forecasting remain an inherently inexact science. Even so, network and equipment refinements continue to evolve. Replacing manual snow courses with SNOTEL stations and adding additional equipment such as snow depth, soil moisture and evaporation loss sensors would provide improved and almost continuous forecasting capabilities. As funds become available, snow depth sensors are being added to the system by the NRCS.

Personnel reassignments and retirements periodically impact snow survey activities. Typically a nearby trained snow surveyor will 'stand by' and assist in areas where they normally may have no involvement, while a new snow surveyor obtains the required training and certifications. This year Division IV supported additional intensive employee training, through the West-Wide Snow Survey Training School, for Bodean Barney. The 2011 West-Wide training was held January 9-14 in MaCall, Idaho.

Ken VonBuettner was recently hired as the NRCS's Snow Survey Coordinator. Ken works out of the Casper office and provided In-State refresher training in January for the more experienced snow survey staff. Ken expects to offer this training every other year.

Subdivision Review Program

Accomplishments involving Proposed Water Supplies

GW statutory involvement, concerning a subdivision's water supply and waste water adequacy, first became effective in July of 1997. Past reports discuss how this original legislation has been amended. Current State Engineer responsibilities in this new area are outlined under Wyoming

Statute 18-5-306 (c) (i). These review responsibilities remain with GW's Cooperative Programs Section. A database correlating, past and present agency subdivision activity, is available at: http://intranet/wrdb/SubdivisionStatus.aspx

Basically, the State of Wyoming's Department of Environmental Quality (DEQ) may request assistance from the State Engineer, and the SEO is to fully cooperate to the extent possible and is to furnish the information or recommendations requested within the time period specified by DEQ. Typically DEQ does request that SEO determine if water right issues have been addressed, and provided 12 such requests during this report year (compared with 20 last report year).

To determine what water right issues may be associated with the development of a proposed subdivision, a preliminary search of the State Engineer's records on lands in the area of the proposed subdivision is conducted and potential existing water right concerns, as well as concerns associated with the new subdivision's proposed water supply and waste water adequacy, are identified.

Based on the issues as identified in the DEQ submittal, and in the SEO search results, appropriate water right actions are proposed. This may involve coordinating appropriate Surface Water Division, GW, and/or BOC input, as well as conveying this input to the County, the Subdivider, DEQ, appropriate SEO field and main office staff, and others.

Since the original enactment of this legislation in 1997, the State Engineer has provided DEQ with review comments and follow-up reviews as requested. This obligation also requires staff time to be committed to participating in meetings, City/County outreach efforts, conferences, and associated activities. This program currently accepts review requests directly from, and directs SEO review comments to, the responsible DEQ District Office.

Problem Areas and Recommendations

With the implementation of the subdivision water supply and waste water adequacy legislation (now the primary GW involvement) compliance with county subdivision statutes appears to be improving. However, subdivisions continue to be approved by county officials before water right issues have been reviewed and resolved. Contributing to this problem is the practice on the part of DEQ to favorably comment to County Planning entities prior to State Engineer review and resolution of existing and/or proposed water right concerns.

Surface Water and Engineering Division

The Surface Water and Engineering Division report includes surface water permit activities, weather modification permits, and dam safety activities. The numbers provided and the comments are for the period from October 1, 2010 through September 30, 2011, which is referred to as Water Year (WY) 2011.

Surface Water Rights Section

by

John Barnes, P. E.
Administrator, Surface Water and Engineering Division

Objectives

The objectives of the Surface Water Rights Section are mandated by the requirements of State water law and the State Engineer's Rules and Regulations as well as the goal to be of service to the public. The Section objectives are:

1. To promptly review and process surface water applications and petitions and submit them to the State Engineer for his review and consideration.

2. To maintain and update the status of all unadjudicated water rights records to accurately reflect the current statuses of these permits. The updated records are entered into the water rights database and scanned to keep all records current.

3. To provide a service to the public by promptly filling requests for data on the status of water rights and for copies of records by direct public contact or by providing assistance in the public's use of the electronic retrieval of records

4. To provide technical advice and instruction to engineers, surveyors, and the public on the proper procedures for filing applications for permits, petitions and water use agreements and for permit status updating.

5. To provide technical assistance to the State Engineer, office staff, and water administration field personnel in matters requiring interpretation of surface water rights.

Accomplishments

The 2010-2011 winter showed a much above-normal snow pack over the state. Releases from reservoirs on the North Platte River began in March in anticipation of the runoff. May and June were colder than normal which held the snow pack in the mountains resulting in a later-than-normal runoff period. With the early reservoir releases, the help of Mother Nature, and early preparedness by the Office of Homeland Security, the runoff came with only minor

flooding damages. There continues to be a large number of inquiries regarding water rights, water law, and related matters to assist in preparing for future flooding.

Drilling in the Niobrara Formation is southeast Wyoming and in the Parkman Formation is northern Converse County and southern Campbell County increased the demand for water. Temporary water use agreements were processed to change the use of water from irrigation to oil and gas drilling. Two abundant water years on the North Platte allowed for the rare issuance of several temporary permits for diversion of water for drilling purposes. The 2011 Legislature authorized an AWEC position to process and monitor water use under the temporary water use agreements. Mr. Tynan LeMaitre was hired on June 22, 2011 for this position. This position is set to terminate on June 30, 2012.

Categorized work submitted to the Surface Water Division during the period included: a) applications for permits - 432; b) petitions - 15; c) Temporary Water Agreements - 123; d) water rights information searches - 186. In addition, the Dam Safety Section conducted field safety inspections of dams, completed plan reviews and performed other activities as reported in a separate section of this Division report.

Application Reviewing and Processing

A total of 432 surface water applications were received in the period. The following table gives a comparison of applications and petitions filed with the State Engineer for the past years, beginning with WY 2005 and continuing through WY 2011. The end-of-period backlog is 652 applications as the number of CBM reservoir applications has dropped off.

WY	APPLICATIONS			PETITIONS		
	No. Recd	Approve/ Reject	EOY Backlog	No. Filed	Approve/ Dismiss	EOY Backlog
05	1650	2312	1768	23	17	108
06	1413	1610	1347	22	34	108
07	1003	1439	911	23	15	104
08	913	1042	812	22	25	101
09	798	953	585	62	25	144
10	657	502	740	25	10	159
11	432	520	652	15	7	167

Types of applications fall into several categories. The more complex categories include ditches/pipelines, enlargements, and reservoirs. The less complex applications and those that

can easily be reviewed and approved include applications for stock reservoirs and temporary water uses. Applications for permits for instream flows, the first of which was received in FY 1987, include a requirement by law that the State Engineer hold a hearing before granting or rejecting them. Only the state of Wyoming, through the Wyoming Water Development Commission, can file instream flow applications. No instream flow applications were received during the period and no hearings were held.

COMPARISONS OF TYPES OF APPLICATIONS RECEIVED				
Category	WY2008	WY2009	WY2010	WY2011
Ditches/Pipelines	109	125	100	70
Enlargements	55	38	40	26
Reservoirs	294	221	193	136
Stock Reservoirs	344	322	210	103
Temporary Use	98	192	114	97
Instream Flow	0	0	7	0
Totals	913	798	657	432

Petition Processing

The first table printed above included data on petitions submitted to the Surface Water Division of the State Engineer to correct or to amend permits. During the reporting period, the number of petitions either filed, granted or dismissed brought the backlog to 167 on hand. Many of these petitions are associated with cleaning up permits associated with correcting permits to reflect how reservoirs were constructed in Water Division No. 2.

Temporary Water Agreements

Where water is not available under a new permit for construction purposes and other temporary uses, the temporary water users can enter into agreements with holders of valid, senior-priority water rights to obtain water for their temporary needs. Water Agreements must be reviewed and approved by the State Engineer's Office and an Order entered to allow the temporary change in use. To meet the needs of the construction and drilling industries, Water Agreements are quickly reviewed and approval Orders are normally issued within a few days of receipt of the Agreement. In the reporting period, a total of 123 Water Agreements were received and approved. A comparison with previous years follows:

WY	Water Agreements
2006	121
2007	179
2008	120
2009	106
2010	114
2011	123

Again, much of the activity for temporary water use agreements involved water for oil and gas drilling in southeast Wyoming where there is a shortage of available surface water. For this reason, the majority of water agreements were filed to use ground water wells as a source of supply. The fact that eastern Laramie County in southeast Wyoming is within a ground water control area brought about the need for closer scrutiny of historical water use and the reduction of irrigation and exchange for a simultaneous trading of the sale of water for oil and gas well drilling.

Permit Endorsements

Once a permit is issued, it is recorded in the computer information system and a permanent scanned image is made. The records must be updated each time a notice for completion of construction or beneficial use is filed with the State Engineer for a given permit. If approved, requests for extensions of time must be endorsed on the permit and the update recorded in the computer system. Eliminations of points of use from a permit, reinstatements of permits, cancellations of permits, assignments, or any other changes by petition to the State Engineer require endorsements to permits and updates of the computer record including the creation of new scanned images of each amended record.

Information Searches

Landowners, surveyors, engineers, attorneys, realtors, and others routinely request copies of permits, certificates of appropriation, maps, and other information pertaining to water rights records. During WY 2011, a total of 186 requests were answered requiring records searches. The following table shows the history in the numbers of requests received.

WY	SEARCH REQUESTS
2005	120
2006	95
2007	72
2008	122
2009	324
2010	187
2011	186

Some of the information requests are related to the preparation of applications and maps by engineers and surveyors for permits or petitions. Again, in the reporting period, the bulk of the requests appeared to be from realtors and bankers who desired water rights information in real estate sales transactions or for use in real estate loans.

Field Activities

Site visits were made to areas where controversies were occurring. As part of our participation with the efforts of the Office of Homeland Security, site visits to Freedom and Saratoga to provide engineering guidance during the flooding that occurred during runoff. Solutions to the problems were determined and relayed to the proper authorities. Site visits were also made by the Safety of Dams staff to observe reservoir construction, to inspect reservoirs as part of the dam safety program, and to investigate alleged illegal activities.

Other Activities

The Surface Water and Engineering Division continues to participate in reviewing the activities of the U.S. Board of Geographic Names (USBGN). This review provides for coordination of names used on maps, particularly those of streams, since every year, many streams are given names by issuance of water rights permits.

The Surface Water and Engineering Division maintains a complete file and inventory of all USGS maps in Wyoming for use by the State Engineer's office and field personnel.

Problem Areas

Coal Bed Methane Reservoir Impacts

The number of new CBM reservoir applications has continued to fall due to the decline in the price of natural gas and the fact that regulatory changes make disposal of produced water in a reservoir a less attractive method of dealing with the produced water. Most of the reservoir applications are for the natural gas (CBNG) industry in the Powder River Basin. The Division continues to reduce the backlog of applications.

Records Rehabilitation

The past Annual Reports detailed the need to upgrade the condition of the permanent records in the Surface Water and Engineering Division. Damaged maps are now being scanned and are available electronically so the original map gets used less and may ultimately be permanently retired. Map records that need to be updated and maintained include the paper plats, USGS maps, county maps, and permit maps-all of which are used daily for supporting the water rights records and in providing information to the public. So they will be available to the public, all current permits and maps are being scanned and uploaded to the new e-permit system.

Upgraded Technology

The new e-permit system along with the new water rights data base have been in operation during this reporting period. As will happen with any new system, problems with the system are being encountered. Some of the problems are resolved quickly and some must await funding and approval of a contract for enhancements to upgrade the programming.

We continue to update our current computers with new, higher speed hardware to be able to use them with the geographic information systems. Documents within the office continue to be scanned. The public has more access to the scanned documents than ever before. We need to continue to update our computer capability as funds are available.

Division personnel have spent an inordinate amount of time verifying and inputting older permits into the e-permit system as well as answering calls from the public about e-permit and the new data base.

State Engineer’s Instructions and Regulations

Work has continued on the State Engineer's Office rules and regulations as time allows. Rule making authority was sought from the legislature but was not approved for all areas with the Surface Water Division

Sage Grouse Protection

In accordance with Executive Order 2011-5, the Surface Water Division has implemented a series of limitations and policies that ensure compliance with the Order. This compliance has relied heavily on the mapping efforts of our GIS section.

Weather Modification Permitting Activities

Objectives

The primary objective of the Weather Modification Program is to procure, compile and evaluate information resulting from weather modification experiments, research and related activities conducted in the state of Wyoming. Weather Modification Permits are issued by the State Engineer for each modification program, experiment or activity.

Accomplishments

Four permits were issued for weather modification (cloud-seeding) purposes during this reporting period. Permit Number 110 was issued to Eden Valley Irrigation and Drainage District in Farson, Wyoming, with the objective of their continuing weather modification program to increase the water supply in the Big Sandy River drainage. This is a wintertime program which operates during proper weather conditions from November 15th through April 15th. The mobile, ground-based, cloud-seeding generators are strategically placed along Highway 191 and are operated in accordance with daily weather conditions.

The Eden Valley District wintertime project is in its thirty-eighth year of cloud seeding activities in cooperation with the University of Wyoming, Department of Atmospheric Sciences.

Permit No. 107 was issued to North American Weather Consultants for weather modification in the Unita Range south of Lyman, WY. This project is intended to increase flows in the streams flowing into Wyoming on the north side of the Uinta Mountain Range.

Permit Nos. 108 & 109 were issued to Weather Modification, Inc. for cloud-seeding in the Medicine Bow and Sierra Madre Mountains west of Laramie and the Wind River Mountains from Pinedale to Lander. These projects are funded through the Wyoming Water Development Commission. This is the fifth year for these projects.

SAFETY OF DAMS SECTION

by
Michael Hand, PE and Larry Stockdale, PE
Safety of Dams Engineers, Surface Water and Engineering Division

Introduction

In 1977, the State Legislature, recognizing the potential hazards to public safety due to waters impounded by dams throughout the state, and the economic benefits of well maintained and safely operated dams, authorized the Wyoming Safety of Dams Program, with passage of the Safety of Dams Law (Wyoming Statutes 41-3-307 through 41-3-318). The law was amended in 1992 to clarify inspection requirements, duties of the State Engineer and lien procedures.

While a permit from the State Engineer is required for all dams, the Safety of Dams Law (SOD) pertains to dams which are greater than 20 feet high or impound 50 acre-feet or more, and diversion systems with a capacity of 50 cubic feet per second or greater. However, the State Engineer may enforce any sections of the law on any size facility, when necessary, to insure the public safety or the protection of property. Essentially, the SOD law requires SOD size facilities to be designed by a professional engineer and to be inspected every 10 years. Agency policy however, requires all SOD size dams to be inspected every five years.

Objectives

The objective of the Wyoming Safety of Dams (SOD) Program is to protect the public by reducing the potential for flooding and loss of life as a result of a dam failure or diversion system failure. This objective is accomplished in two ways, as stipulated by the SOD law:

1. By reviewing plans and specifications for proposed work, which then results in the issuance of a permit, and by reviewing inspection and progress reports outlining current construction activities. In so doing, it is assured that new facilities are constructed in accordance with current engineering principles and practices.

2. By conducting periodic safety inspections of existing facilities to identify problems and seek corrections before they result in a catastrophic failure.

Accomplishments

During WY 2011, 11 projects were referred to the Safety of Dams section for review. Of this number, four (4) applications were for new jurisdictional size reservoirs, two (2) were for repairs to existing SOD size dams, three (3) were for removal of existing dams, one (1) was for an enlargement of an existing dam and one (1) was for an SOD size diversion system. Of the four (4) applications for new facilities, two (2) applications were subsequently modified by the applicant to be smaller than SOD size, and one (1)

application was rejected. Thus, one (1) new SOD size dam was permitted in water year 2010-2011.

Repairs to five (5) projects were completed. Three (3) repair projects are ongoing. Approval was granted for the removal of two (2) SOD size reservoirs.

2011 marked the first year since 1993 that no new SOD size reservoirs were constructed.

In addition to the work involved with design review and/or construction monitoring activities, a considerable amount of time is spent on the other aspect of the Safety of Dams Program, the Periodic Inspection Program. Wyoming Statute 41-3-311 states: "Any dam, subject to the terms of this act shall be inspected at least once every ten years or as often as deemed necessary based on the hazards of the dam to insure the continued protection of public safety and property." Only very low hazard dams located in remote areas of the state are inspected less frequently than once every five years.

Currently, 1525 dams meet the criteria of the Safety of Dams. A total of 333 dams were inspected in WY 2011 and 326 are due for inspection in WY 2012.

The quality of the safety inspections is steadily improving. This is due to the increased experience and training level of the state water administration personnel in dam inspections and the greater opportunity for the two Safety of Dams Engineers in Cheyenne to conduct routine periodic inspections of larger, high and significant hazard facilities. In addition, inspections are coordinated with federal agencies such as the Natural Resources Conservation Service, Bureau of Land Management, Bureau of Reclamation, Federal Energy Regulatory Commission and Forest Service to draw on the resources and experience of those agencies.

The foregoing was accomplished with a reduced SOD staff. One engineer retired in June, reducing the SOD staff from three to two.

Problem Areas

A problem area has been the construction or modification of new reservoirs without proper review by SOD staff. The discovery of a new dam that has been constructed without regard to downstream hazards or material science can pose a threat to persons or property downstream. Public education efforts have been made to ameliorate this problem however, when such facilities are discovered significant time and energy is expended bringing these facilities into compliance with the SOD law.

Other Activities

Work is ongoing updating the Wyoming portion of the National Inventory of Dams (NID). Periodically, all information regarding the 1416 Wyoming Dams included in the NID is submitted to the U. S. Army Corps of Engineers (USACE). The criteria for

inclusion in the NID differs slightly from the State of Wyoming criteria. This accounts for the difference in the number of dams included.

Data from state dam safety organizations is compiled by the USACE and published in CD-ROM format periodically. This information is also available on the USACE web site.

Considerable assistance to the dam safety program has been provided by Federal Emergency Management Agency (FEMA) grant funds.

Grant funds were used to provide training to SEO staff. Three dam safety engineers attended the 2011 Association of State Dam Safety Officials annual conference. Three field personnel attended Safety Evaluation of Existing Dams training presented by the U. S. Bureau of Reclamation in Denver. One hydrographer attended training in the U.S. Corps of Engineers' River Analysis System (HEC-RAS) computer program.

During 2011, grant funds were also utilized to partner with Carbon County to prepare Emergency Action Plans for six high hazard dams. States West Water Resources of Cheyenne completed the inundation mapping for these dams. Due to an exceptional series of events, this project was not completed during the water year, but will be complete in early 2012. Through this process, the Safety of Dams Engineers will meet with the dam owners and local emergency responders to review the new Emergency Action Plans. Future grants will be used to continue this project for other dams.

During 2011, record runoff was experienced. This provided a test to virtually all dams in the state. While no dams failed catastrophically, four (4) dams did experience minor incidents.

Three dam owner workshops were held around the state in 2011. These events were held in Riverton, Gillette, and Cheyenne. The workshops were designed to give dam owners insight into common dam safety issues and solutions to these issues. The response was overwhelmingly favorable.

BOARD OF CONTROL DIVISION

The Board of Control is comprised of two (2) sections: the Board of Control Section and the Water Division No. III - General Adjudication Section. The two (2) sections under this Division are incorporated within this Board of Control Division Report.

Board of Control Section

by

Allan Cunningham, Administrator
Cheryl Verplancke, Assistant Administrator
Board of Control Division

Objectives

1. To promptly process petitions to amend adjudicated water rights and to present these petitions for review and consideration by the Board of Control.
2. To promptly review within 30 days water distribution plans and/or authorizations for detachment of water for consideration by the State Engineer or the Board of Control.
3. To promptly process proofs of appropriation for new adjudications and to present these proofs for review and consideration by the Board of Control.
4. To maintain and update the status of all adjudicated water right records to accurately reflect their current status.
5. To continuously evaluate the productivity of staff efforts in addressing the current workload.
6. To respond to inquiries by the public, as well as State and Federal agencies, regarding the current status of adjudicated water rights, and to give instructions and assist appropriators on the methods, procedures and format for filing petitions, plans and authorizations for detachment with the Board of Control.
7. To provide technical and administrative support to the Board of Control members in matters concerning the evaluation of both surface and ground water rights and water administration.
8. To prepare and forward proofs of appropriation for surface and ground water uses to the Division Superintendents for field processing and recommendation.
9. To comply with statutory requirements and publish a tabulation of adjudicated water rights for the four (4) Water Divisions.

Major Accomplishments

During this reporting period (October 1, 2010 to September 30, 2011), the Board of Control Division received 195 petitions, a decrease of 9 petitions or 4% from the previous reporting period throughout the State in addition to those already on the agenda. These new petitions are listed by division as follows:

	SURFACE	GROUND	TOTAL
DIVISION NO. 1	37	28	65
DIVISION NO. 2	29	7	36
DIVISION NO. 3	26	17	43
DIVISION NO. 4	43	8	51
TOTAL	135	60	195

Final action was taken on 172 petitions, which were either granted, denied, dismissed or withdrawn. Some of the petitions were carried over from the previous reporting period to allow for the resolution of technical, engineering and legal problems, and in some cases for public hearings. The petitions dealt with by the Board of Control ranged from those with simple issues such as a change of point of diversion to those of a more complex nature such as change of use and declaration of abandonment.

Five hundred and sixty (560) proofs of appropriation were approved by the Board of Control during this reporting period. Two hundred sixteen (216) or 39% of these proofs were for ground water rights (wells), and three hundred forty four (344) or 61% were for surface water rights. In addition to these 560 proofs, 198 stock reservoirs were inspected and found to be constructed within the terms of the permit. Under existing Board of Control policy, these stock reservoir permits will be finalized, and a notation made in the water rights tabulation books, but no certificate of construction issued.

During this reporting period, the number of final actions concerning petitions decreased by 46 petitions or 21%. During this reporting period, the number of proofs of appropriations approved increased by 55 proofs or an increase of 11%. The number of stock reservoirs inspected and found to be constructed within the terms of the permit increased by 60 facilities or an increase of 43%.

Thirty eight (38) water distribution plans and/or authorizations for detachment of water rights were received during this reporting period, an increase of 3 plans and/or authorizations or a 9% increase from the previous reporting period.

Stock Reservoir Cooperative Project

This project began in early 2011 with intent to identify stock reservoirs that need to move through the proof process in e-Permit, either to be adjudicated or for the submittal of endorsement as a "stock reservoir not to be adjudicated." This project is an agency cooperative project because both the Board of Control staff and the Surface Water division staff must work toward the same goal. The Board staff identifies which stock reservoir permits are subject to this process. The Surface Water staff verifies the permit information in e-Permit and generates the proof in the system, which then forwards the proof for review by the Board field staff. Of the 122 stock reservoir books, 87 books have been reviewed by the Board staff. The Board portion of the project will be completed in early 2012. This project has three additional benefits: 1. Data in e-Permit is being corrected, gaps in data are

being filled and the scans of the permits are attached to the database. 2. The verification process helps ascertain if all previous "stock reservoirs not to be adjudicated" have the appropriate endorsement within e-Permit so that these permits will show up within the Tab books. 3. Statuses of permits are being updated and corrected. This project also dovetails nicely with the Board of Control's staff verification of the certificates in e-Permit.

Regulations and Instructions

The Board of Control began it rule-making process to amend its existing 2004 rules in the last reporting period. This review was prompted by the increase in activity of subdivision development in 2008-2009, and the filing of authorizations for detachment of water rights. In 2010, the Board held open for comment proposed amendments to the rules and held a public hearing in 2011. Several comments from the public were received at the hearing. During this reporting period, the Board of Control reviewed public comments, prepared an agency response and submitted the amended rules as adopted by the Board of Control to the LSO and Governor for approval. The rules were approved November 1, 2011.

e-Permit Update

During the reporting period, the Board of Control Division continued to docket all new petitions received in e-Permit; all documents received with the petitions are being scanned and uploaded into e-Permit for viewing. Field staff now use these images to print petition packets rather than staff mailing hard copies to them. Surface Water proofs of appropriations continue to be entered and tracked in e-Permit.

During WY11, the following enhancements to improve the functionality of e-Permit for the Board of Control Division (BOC) were provided to Weston Solutions, Inc. Testing of these enhancements was mostly finalized during this reporting period; however, these enhancements were not loaded on the production server during the reporting period:

- Township and Ranges were added for adjoining states so that Wyoming water rights which fall outside of the Wyoming state boundary can be added to e-permit.
- Changes were made to reservoir Certificates of Construction (Certificates) to allow the appropriation amounts to function like the Surface Water permit.
- Validation rules were changed on the Point of Use screen to eliminate an error message that was being generated on Reservoir Certificates.
- Tab Book enhancements which include:
    - Update proof numbers for BOC records
    - Amended Ground Water certificates to display Ground Water Districts on the Point of Diversion screen so that Ground Water certificates would print in the proper order.
    - Added the ability to make Territorials "inactive" (thus not print in the tab book) when the Territorial has been entirely replaced by a Certificate; this is to avoid duplicate entries for the same water right(s).
    - Ability to delete Certificates and Order Records created in error using "historic" data entry procedures.
    - Changed the procedures for tab book reports being saved on the Document Management System (DMS). There will on be two (2) tab book reports on

the DMS at a time. One report titled "Official Published Version" and one report titled "Latest Unpublished Version." The "Official Published Version" will be the latest version that was printed and distributed to the public and staff. The "Latest Unpublished Version" will be a BOC working copy with updates since the last published version.

- Expanded the "source" field for stream sequences to allow for more than 50 characters.
- For facility names, enlargement naming nomenclature for BOC certificates was changed to allow for the different naming procedures used by BOC vs. the Surface Water permit naming procedures. In addition, the facility name character limit was expanded to allow for up to 100 characters.
- Displaying the beneficial use(s) on the Summary Screen; beneficial use(s) is not displayed currently on the Summary Screen.
- An additional report for "Unadjudicated Stock Reservoirs" was created. This new report will follow all the rules for the existing Surface Water report except it will only contain unadjudicated stock reservoirs.
- A few small programming changes to aid in data entry were also made.

The Board of Control Division continues to note improvements, defects, enhancements, etc. that can be made to e-permit for improvements in functionality and consistency of records.

Problem Areas

Wyoming Statute 41-4-208, 1977, requires that the Board of Control compile and edit revised tabulations of adjudicated water rights for all four (4) divisions of the State. There is a constant demand for these tabulations from engineers, land surveyors, government agencies and the public. There is also a demand to have these tabulations in a digital format. These tabulations are also an important tool for regulation of the State's water. The Tabulations of Adjudicated Water Rights (Tab Book) will be printed using e-permit. Tab Books are high priority and staff is verifying data in e-permit, with a concentration on Division IV. During this reporting period BOC staff made a concerted effort to verify migrated date in e-permit against the existing Division IV Tab Book; this task was time consuming and tedious, but was mostly accomplished during this reporting period.

As previously stated in other reports, the amount of data we now capture in e-permit from each instrument has multiplied 10 fold from what was previously entered into the old Access database. In preparation of Tab Books, this means that all BOC records have to be verified; this entails entering missing information, researching errors and making sure the data is as accurate as it can be. In addition, all data that was not entered into the old Access database must now be entered into e-permit using the Historic data entry module; which has only been available since July 2010.

As part of the Tab Book effort, BOC staff has been working with the Surface Water Division to evaluate stock reservoirs permits. As mentioned above, as part of the Tab Book enhancements, a new report will be generated for Unadjudicated Stock Reservoirs. As no Certificate will be issued for these reservoirs, the BOC must rely on the Surface Water staff

to verify and add a "special" endorsement in e-permit to those stock reservoir permits that will remain in an unadjudicated status. Without this endorsement, the permits will not be selected to print in the Tab Book. This can cause difficulty in that this division then generates additional work for another division and, in that, the BOC has no control over that data that we require to print an accurate tab book where Unadjudicated stock reservoirs are concerned.

Once the above listed enhancements are made available to BOC staff on the production server, this should help the BOC in working towards meeting their goal of releasing an "Official Published Version" of the Tab Book during the next reporting period; however, there are still some problematic issues with entering the large amount of missing and back-logged data into e-permit with a limited BOC staff and making sure other divisions, who have their own priorities, can assist in the work that we require to print an accurate Tab Book.

As it appears that Wyoming is well on its way to recovering from a multi-year drought; focus of the Board of Control has now shifted from water administration to adjudication. During the drought years, water administration was priority and, as a result, there is a rather large backlog of proofs needing field inspections.

Recommendations

For the proof backlog: As the field staff works through their back log of pending proofs; the number of proofs submitted to the Board of Control for review and advertising will increase. The Board of Control needs to develop a unified plan to deal with the backlog of proofs that we will receive. The plan should:

- Determine the actual number of pending proofs in each division;
- Create all pending proofs in e-permit for easier tracking, this would include developing an effective work plan with the Surface Water Division as they have the ability to create proofs and BOC staff does not;
- Set priorities to complete the oldest proofs first; especially, those with funds already paid to the Agency;
- Establish a maintenance plan to keep proofs current; no more than six (6) months old;
- Train additional BOC staff to assist in the processing of newly received proofs and utilize them when needed;
- Need several new enhancements to e-permit for the ability to change the status on proofs and create Order Records and Certificate Records, as well as, work flow modifications in e-permit to accommodate the numbering of Order Records and Certificate Records; this would eliminate the Clipper Program which is outdated, hard to use and maintain;
- Completion the Stock Reservoir Project.

For Tab Books: The latest set of Tab Book enhancements need to be uploaded to the production server for BOC use; without them, data cannot be corrected accurately. Also,

the Board of Control needs to establish a plan for data correction of all Board of Control data. The plan should include:

- An all division effort to go through all Certificate Record books and compare the e-permit data with the hard copy records; make appropriate corrections, amendments, changes, etc., to e-permit; e-permit only days should be designated;
- Concentrated effort of staff to compare data in the existing Tab Books to e-permit; make appropriation corrections, amendments, changes, etc., to e-permit;
- Concentrated effort of staff to compare the stream cards to the existing tab books and determine if there is missing information; if missing information found, make sure it is added to e-permit;
- Concentrated effort of staff to make sure all petition changes are being entered into e-permit.
- Once data clean-up is completed and draft copies of the report are reviewed, other issues may arise.

It is anticipated with this all-out effort of the Board of Control Staff that, over time, with established e-Permit rules, guidelines and enhancements in place, data integrity will increase; a more accurate and complete database will be created. Once this effort has been completed, the production of Tab Books could occur at any interval, as all data would be up-to-date.

Further refinements and enhancements to e-Permit to continue to improve the Tab Book could include, but not be limited to:

- The ability to add hydrologicially connected Ground Water permits into the Surface Water portion on the Tab Book;
- Modify Instream Flow certificates to more align with Instream Flow permits to facilitate proper data entry;
- Improve the Stream Sequence tables to be easier to use and add new or modify existing stream sequences.

Big Horn River General Adjudication

By
Nancy D. McCann
Water Manager

W.S. 1-37-106, General Adjudication Statute, gave authorization to initiate the process through a judicial determination of the rights to use water of all persons on any river system. Subsequently in 1977, the State filed suit for the determination of water rights in the Big Horn River system and all other sources. This lawsuit is known as the Big Horn River General Adjudication and continues to be under the jurisdiction of the Fifth Judicial District in Worland.

The staff serves as the technical arm to the District Court on all phases of the case. Some of the staff's tasks are ordered by the Court while others are necessary functions to maintain proper records at the State Engineers Office (e.g., incorporating decreed rights). The staff provides on-going support to the agency, public and parties on any water rights adjudicated through the Big Horn General Adjudication.

The judicial decisions will continue to necessitate, an extraordinary amount of administrative and technical activities that the Court relies on state coordination.

During this reporting period, the staff coordinated the recordation of key decisions and decrees in each of the county's within Water Division 3 as directed by court order. Phase III is coming to a close with three files pending before the Special Master's Office and District Court. We anticipate the remaining Phase III issues will move through litigation process in 2012. The staff remains hopeful that Phase III of the Big Horn Case may also come to a close with a final order from the District Court.

Phase I Decrees

- Tribal Reserved Rights
- Consent Decree/Appurtenancy of the Tribal Reserved Rights
- Walton Rights
- Tribal Ground Water Quantification

The staff spent this reporting period working out the process of recording each of the above decrees in the counties. While the recording process is generally standard, each county has different internal requirements. In addition, each decree has its unique features that does not fit the typical records being recorded. Insofar as the final integration of these decrees into the SEO records, Walton Rights were entered into e-Permit, but additional testing will be necessary into the next biennium to see the output in the Division 3 Tab book. Subsequently, other decrees will need to be integrated into the agency records as well as E-Permit.

Phase II Decree - Federal (non-Indian) Reserved Water Rights

Phase II Interlocutory Decree was entered by the District Court on November 29, 2005. No further activity is anticipated except integration into the agency records along with entry into e-Permit during the next biennium.

Phase III – State Surface Water and Ground Water Rights

Over 4,000 surface water permits have gone through the Court process. Over 10,000 ground water permits have also been addressed through the Phase III Court process. The staff's focus continues on providing litigation support on the last three contested cases. In addition, the staff was required to serve as an expert witness providing foundation for the State's Report and expert testimony concerning water rights. Objections to the staff's recommendations are filed with the District Court. Resolving those objections on files previously submitted to the Court continue to demand a significant amount of staff time to provide technical water rights assistance to the legal team and the District Court.

Two Certificates of Appropriation for Surface Water permits issued from resultant from District Court Orders.

Last reporting period, the Big Horn adjudication staff transitioned to assisting the Board of Control with the responsibility of its statewide adjudication program. This includes the review and analysis of incoming proofs of appropriation and inspections from the four division field offices, advertising of proofs, preparation of the proof reports for the Board's quarterly meeting, drafting of adjudication orders and review of adjudication certificates. For the Board of Control's adjudication statistics, refer to the Boards portion of the annual report.

GIS (Geographic Information Systems) Projects

The use of GIS technology has been historically used to identify overlapping water rights or conflicts in water rights within the Big Horn Adjudication. Tribal Reserved rights, Consent Decree Rights, Walton Rights and those State rights coexistent with all these rights are contained within the mapping projects in this division. Several requests for water right maps and analysis of the water rights within the Wind River Indian Reservation were filled by the staff. The Big Horn map data and tabular data continue to be used to solve administration, litigation and jurisdictional issues for various state agencies.

Big Horn River Adjudication Website

The staff continues to coordinate the cooperative scanning project with the Wyoming Supreme Court with an expected completion in 2012. The Big Horn River Adjudication Website is hosted by the Wyoming Supreme Court. The purpose of this project is to provide the parties and the public with easy access to over 30 years of Court record, Court Decrees and water rights data that was decreed to water appropriators within the scope of the Big Horn River General Adjudication. Additional data and scans of the Court documents are currently being added with the expectation that the website will be available to the public in the next reporting period. The staff provided decree data, design input and technical expertise about the Big Horn case to the project in coordination with the Special Master's Office and the Supreme Court during this reporting period.

Big Horn Problem Areas

While all Phase III state permits have been reported to the District Court, the staff continues to support the District Court technically by providing clarification of ownership, updating ownership and landowner addresses and providing the foundation of the land descriptions for the Court's orders etc. This effort will continue until the District Court finalizes the last few permits by issuing Court Orders. In addition, the staff continues to provide technical support for the decrees for the Attorney General's Office. The remaining permits still within the Court process may continue with complex objections with multiple parties involved and then will demand a substantial amount of staff time preparing for Court hearings.

Big Horn Recommendations

While the Big Horn water case is full of complexities, the staff should continue to educate the agency and the public through cross-training. Efforts will need to continue to integrate the various decrees into the e-Permit and the agency records.

Interstate Streams Division

By

Sue Lowry
Division Administrator
and

John W. Shields	Matt Hoobler	Jodee Pring	Steve Wolff
Interstate Streams Engineer	North Platte Coordinator	Water Planning Coordinator	Colorado River Coordinator

The State Engineer is charged with administering and overseeing all matters involving Wyoming's interstate and intrastate streams and rivers. A primary objective of the agency is to safeguard the State's current and future water supplies by preserving Wyoming's ability to use and develop our water allocations under our interstate compacts and court decrees. The Interstate Streams Division provides technical and policy support for water allocation and administration issues associated with these governing compacts and decrees. The Water Planning activities of the agency are also coordinated in this Division.

Interstate Streams Activities

The following summarizes notable activities of the Interstate Stream Section by river basin or issue:

Missouri River Basin

Flooding dominated the activities of the Missouri River in summer, 2011. Large snowpack in both the mountains as well as the plains, coupled with a large rain event on the Wyoming-Montana border provided more runoff that even a 75 million acre feet reservoir system can hold. Prior high releases below Garrison and Oahe Dams had been 65,000 cfs. Releases in 2011 were above 150,000 cfs, and the high flows were sustained for much of the summer. As we end this water year, the Corps is working with local governments as well as FEMA and the NRCS to coordinate the flood recovery efforts. Governor Heineman from Nebraska hosted a meeting of the basin governors on August 19, 2011 to discuss the flood impacts and how the Corps had responded to the flood.

Missouri River Association of States and Tribes (MoRAST)

The MoRAST is made up of 7 of the Missouri River basin states (the state of Missouri declined to participate) and individual Indian tribes are eligible for membership. Each state is represented by the state water resources agency as well as the game and fish management agency, except Wyoming as our Game and Fish Department declined to participate at this time. MoRAST had invested considerable time and resources in getting the passage of funding for the Corps to carry out the Missouri River Authorized Purposes study (MRAPS). Taking a fresh look at the authorities for a basin as large as the Missouri was to be a precedent setting undertaking. Unfortunately, continued funding for the MRAPS was curtailed as the original funding had been

via an add by Sen. Dorgan and since the funding request had not been a part of a President's budget the continuing resolution did not allow funding to continue in federal FY11. MoRAST continues to strengthen its tribal participation. One Board of Directors meeting was held in Rapid City, SD in September, 2011. David Pope retired as the Executive Director of MoRAST in June, 2011. He will be greatly missed, but the organization feels fortunate to have Mike Hayden coming on board as the new Executive Director.

Missouri River Recovery Implementation Committee (MRRIC)

The 2003 Biological Opinion from the Fish and Wildlife Service which outlined the Reasonable and Prudent alternatives during the Master Manual update outlined the need for a public stakeholder group to be formed to serve in an advisory capacity to the Fish and Wildlife Service and to the Corps of Engineers as they moved forward with the Biological Opinion projects. The Water Resources Development Act of 2007 defined and authorized the MRRIC. The Committee continues to meet quarterly face-to-face and at least once/year via video conferencing. Several work groups have been formed and are actively meeting between the formal MRRIC meetings. An Independent Science Review Panel studied the spring rise recommendations in the Biological Opinion and felt that the science did not support several aspects. MRRIC met in Denver in February, 2011 and an excellent tour was held at Reclamation's Technical Center where a scale model of the Intake modifications on the Yellowstone River was viewed.

Missouri River Ecosystem Restoration Plan (MRERP)

A parallel process for prescribing the long-term restoration activities in the Missouri River basin (MRERP) was also authorized in the Water Resources Development Act (WRDA) of 2007. Wyoming has been a cooperating agency in the development of the Environmental Impact Statement and Ecosystem Plan for the Missouri River. Much work has been done to quantify and describe the Focal Natural Resources (FNR) that were in place in the basin prior to the construction of the reservoirs. The FNR's will describe the environmental component to the river corridor. Simultaneously, much work has also proceeded in describing and quantifying the human component and value of the basin through the social, economic and cultural work teams.

Platte River Basin

North Platte Settlement Agreement

The U.S. Supreme Court approved the Final Settlement Stipulation and entered the Modified North Platte Decree in *Nebraska v. Wyoming* on November 13, 2001. The goal of the settlement was protection of existing water rights while providing certainty about the extent of Wyoming's water use and future water development and management. In general, the settlement calls for an increase in monitoring, measurement, accounting, and reporting of water use, as well as future studies to be conducted by the North Platte Decree Committee (NPDC).

The NPDC consists of water officials from the Bureau of Reclamation, and the states of Wyoming, Nebraska and Colorado. The NPDC was created to reestablish trust and cooperation

on various issues and to assist the parties in resolving future disputes. The NPDC members will attempt to resolve any disputes through direct negotiations or, as a last resort, through alternative dispute resolution, before returning to Court. The NPDC meets in the fall and spring every year. Mr. Patrick Tyrrell, Wyoming State Engineer, assumed the role of Chairman in 2010, and will pass the Chairmanship to Nebraska at the end of 2011. The NPDC maintains several subcommittees to assist in fulfilling its duties under the Modified Decree: Ground Water Wells, Control Crest, Finance, Consumptive Use, Replacement Water, and State Line Gage.

Wyoming performs the following tasks to comply with the Modified North Platte Decree and Final Settlement Stipulation and as a cooperating member of the NPDC:

1. Wyoming serves on the NPDC Consumptive Use Subcommittee which conducts consumptive use research in the basin upstream of Guernsey Reservoir as required under the Modified North Platte Decree. The weather stations funded by the NPDC and installed by the High Plains Regional Climate Center near Lingle, Douglas, Elk Mountain and Encampment are operational and are collecting data since the original installation. During 2011, the Consumptive Use Subcommittee, under contract with the National Agricultural Statistics Service, conducted a survey of irrigation facilities and practices in the North Platte basin in Wyoming upstream of Guernsey Reservoir Dam.

2. Wyoming continues to track and report daily accounting for the Whalen Diversion Dam to the state line reach. A new radio telemetry system was installed in 2004 at mainstem diversions below Whalen to improve data collection and accuracy. In 2006 Wyoming added six tributary diversion locations to the existing mainstem telemetry system. As a recommendation from the State Line Gage Subcommittee, the NPDC approved the hiring of Water Resources Solutions (WRS) to develop a feasibility design study for placement of bendway weirs upstream of the Wyoming-Nebraska state line flow measurement site located on the North Platte River. In addition to the feasibility design study, WRS constructed a physical model of the state line gage to calibrate the 2D conceptual model based on existing flow and gage information. The physical model was reconfigured based on the concept design layout and re-run to determine if the concept layout provided satisfactory approach conditions to the weir and to determine if the proposed bendway weir's placement will be adequate to erode the existing sand bar in the channel.

3. Wyoming replaces the depletions of the river's natural flow during "Trigger Days" caused by active groundwater wells pumping for irrigation in the triangle area. Water Year 2011 was unique in that there was no administration on pump diversions and deliveries as adequate natural flow occurred for the entire season. As in water year 2010, water year 2011 required no replacement water to be released by Wyoming because there was never insufficient natural flow in the system, and release of replacement water was therefore not triggered. Without triggering the release of replacement water, the obligation for 2011 does not carry over into the next water year.

4. For the 2010 irrigation season, Wyoming reported in a February 25, 2011 letter to the NPDC, that the intentionally irrigated acreage for the North Platte River basin above Guernsey Reservoir, exclusive of the Kendrick Project, was 203,657 acres and in the Lower Laramie

River basin, exclusive of the Wheatland Irrigation District, was 30,191 acres. In accordance with the Settlement Agreement, the intentionally irrigated acreage caps for these basin areas are 226,000 acres and 39,000 acres, respectively. Under the 2001 Modified Decree and Final Settlement Stipulation in the North Platte River drainage above Guernsey Reservoir, the State of Wyoming is required, within 10 years of the settlement, to designate the division of the 226,000 irrigated acreage limitation. During 2011, the SEO hosted two public meetings to discuss the 10-year review and internal comprehensive assessment for determining the division of the 226,000 acreage cap. Following this process, the acreage cap was divided into 169,100 acres above Pathfinder Dam and 56,900 acres between Pathfinder Dam and Guernsey Reservoir.

5. For the 2010 irrigation season, Wyoming reported in a May 15, 2011 letter to the NPDC that the ten year calculated consumptive use of irrigation water in the North Platte basin upstream of Pathfinder Dam was 1,020,000 acre feet for 2001 through 2010. In addition, Wyoming reported the ten year calculated total was 760,000 acre feet for the North Platte basin between Guernsey Reservoir and Pathfinder Dam.

6. During the July 19, 2011 flash flood event on South Brush Creek that led to the washout of Hwy. 130 near Ryan Park, Wyoming, the revetment for the South Brush Creek gage house was destroyed. The loss of the revetment left the gage house vulnerable to future high flow events. SEO Division I staff considered many options for the rebuilding of this revetment, and ultimately decided to utilize Redi-Rock for the construction of the revetment wall. Redi-Rock had not been used for this application in Wyoming prior to this revetment construction. Redi-Rock is an inter-locking block system utilizing the weight of each block (over 1 ton each) and the "lego-like" connection system to support many uses such as foundations, retaining walls, and now revetments. The cost is considerably lower than other options for the armoring of a gage house. Additionally, it provides a landscape architecture approach to construction.

Seven (7) full-time field staff and two (2) Cheyenne staff within the State Engineer's office carry out the tracking and reporting requirements of the Settlement Agreement. Many existing staff positions continue to be faced with additional responsibilities to comply with the Settlement Agreement. By accurately tracking and reporting Wyoming's water use in the North Platte River Basin, the State of Wyoming is able to protect Wyoming's appropriation of this valuable water resource.

Platte River Recovery Implementation Program (PRRIP)

In 1997, the States of Colorado, Wyoming and Nebraska and the U.S. Department of the Interior (DOI) signed the Cooperative Agreement (Agreement) for Platte River Research and Other Efforts Relating to Endangered Species Habitat along the Platte River in Central Nebraska. The Agreement addressed recovery of four species: the whooping crane, piping plover, least tern, and pallid sturgeon. The DOI contracted with the National Academy of Sciences (NAS) to review and evaluate the science regarding the central Platte River habitat needs and flow recommendations. The NAS report was released on April 28, 2004. The final environmental

impact statement (EIS) and the biological opinion were distributed on May 18 and June 20 in 2006; respectively. Secretary Kempthorne of the DOI signed the Record of Decision on September 27, 2006.

The PRRIP agreement was signed by the Governors of Colorado, Nebraska, and Wyoming and the Secretary of Interior in late 2006. The PRRIP remains in effect for the first increment, 13 years, unless terminated earlier by one of the signatory parties. Mr. Mike Purcell, Director, Wyoming Water Development Commission, represents Wyoming on the Governance Committee (GC). The Deputy State Engineer serves as an alternate to Mr. Purcell on the Governance Committee. Meetings are currently held on a quarterly basis. The program establishes key standing advisory committees to assist the GC in implementing the program. Those committees include the Technical Advisory Committee, the Land Advisory Committee, the Water Advisory Committee, the Independent Science Advisory Committee and the Finance Committee.

In addition, an Adaptive Management Working Group has been formed to inform the GC on implementation of the program's adaptive management plan. Current issues for the GC include the reregulation and construction of reservoirs in order to supply water for critical flows, purchase of lands to support critical habitat, and evaluating the timing and intensity of flows through the critical habitat.

The PRRIP which began on January 1, 2007 is estimated to cost $317 million, with the federal share being $158 million (2005 dollars). Wyoming's 2006 Legislature approved $6 million in funding for the PRRIP and $8.5 million for an action alternative, the Pathfinder Modification Project (PMP), to recapture 54,000 acre-feet of space in Pathfinder Reservoir. The PMP provides a municipal water supply, a water supply to help meet obligations of Wyoming under the Modified North Platte Decree, and enhancement of regulatory certainty under ESA.

On November 17, 2008, the Bureau of Reclamation and the Wyoming Water Development Commission jointly submitted a document entitled "Application to Export Storage Water from the Pathfinder Modification Project (PMP)" to the State Engineer's Office for review. Pursuant to Wyo. Stat. Ann. § 41-3-115 , the state engineer reviewed the application, rendered a preliminary analysis of it, advertised and held a public hearing about it in Natrona County (where the proposed appropriation is located) and solicited public comment on the proposal. Upon consideration of the application, comments received at the hearing and during the comment period which followed, and all other information the state engineer deemed to be relevant, the state engineer prepared the final opinion and recommendation and submitted it to the Legislature in keeping with the requirements of Wyo. Stat. Ann. § 41-3-115(r) (i) – (x). Following deliberations and approval by both the House and the Senate of Wyoming's 60th Legislature, the Governor signed into law Wyo. Stat. Ann. § 41-2-1301, which authorizes the transfer (or export) of Wyoming's water to the PRRIP on behalf of the State of Wyoming for the purpose of providing regulatory certainty under the Endangered Species Act for the use in the Platte River basin. On-site construction of the PMP began in 2010 with completion expected at the end of 2011. Starting January 1, 2012 Pathfinder Reservoir can begin storing 1,070,000 AF of water, versus the 1,016,000 AF that was allowed before the PMP.

PRRIP addresses several Endangered Species Act (ESA) issues affecting water development in the Platte River Basin in Wyoming. In the absence of the PRRIP, each water project or activity in the Platte River Basin having a federal nexus will be required to address and comply with federal ESA regulations individually, a process that could be costly and inefficient and would severely impact the states and their water users.

Wyoming's Water Depletion Plan addresses Wyoming's responsibilities for existing and new water depletions in the Platte River Basin. Individual water users do not need to independently seek the federal clearances required under the ESA because the PRRIP serves as the reasonable and prudent alternative for existing water related activities and certain new water related activities implemented after July 1, 1997.

Wyoming's Coordinator of Wyoming's Depletions Plan within the State Engineer's Office is tasked with preparing annual reports to satisfy the requirements of the Depletions Plan and performing federal and state consultations on new water-related projects. The Depletions Plan requires Wyoming to extensively track and report municipal, industrial, rural domestic, agricultural water uses, and various new water uses implemented since July 1, 1997. The first report addressed the new water uses since 1997 and compares Water Year 2007 water uses to the 1997 baselines. The second, third and fourth reports for Water Years 2008, 2009 and 2010, respectively, included all new water-related activities determined to be depletive by individual water years. All water year reports submitted to date have been approved by the GC. Water year reports of any new water-related projects will be submitted to the GC by March 15, 2012.

More information regarding the status of the PRRIP is available at the following website: http://platteriverprogram.org/

Laramie River Basin

After initial meetings in 2006 between Wyoming and Colorado to review the provisions of the decree, Colorado has continued to provide us with year-end delivery numbers for the Laramie River. No meetings were held during this reporting period with Colorado.

Yellowstone River Basin

On January 31, 2007, Montana filed a Motion for Leave to File Bill of Complaint with the US Supreme Court making the claim that Wyoming has violated the Yellowstone Compact by expanding our water use in the Tongue and Powder River basins, by allowing groundwater pumping associated with coalbed methane development, and by constructing additional storage. Special Master Barton H. Thompson, Jr. submitted his first interim report to the full Supreme Court on February 10, 2010. Montana filed exceptions on two of the Special Master's recommendations and oral arguments were held before the Court on January 10, 2011. The Special Master held a hearing in Denver on September 30, 2011 on two issues: 1) Whether Montana could also bring proposed violations under Article V.B as well as V.A and 2) what constituted a "call" being made by Montana and in what years had such a call been made.

The Compact Commission met on December 8, 2010 at Red Lodge, MT, and this was the first meeting chaired by new Chair Mark Anderson. The Technical Committee met April 12, 2011 via conference call due to Montana travel restrictions. The Committee has completed the updated list of the reservoirs in the basin greater than 1,000 AF in capacity that should be included with Table 10 of the Commission's Annual Report.

Federal legislation to authorize and fund the negotiated Crow Compact settlement was passed and signed into law by President Obama on December 8, 2010. The Crow tribe ratified the compact in March, 2011.

BIA gages and Yellowtail/Bighorn Reservoir Long Range Planning Group are covered in the Division III Superintendent's chapter of this report.

Belle Fourche River Basin

The annual coordination meeting between Wyoming, South Dakota, Reclamation, US Geological Survey and the water users was held on January 6, 2011 in Sundance, WY. This once-a-year meeting provides a good forum for the irrigators and the state water administrators to discuss the previous year's deliveries and discuss operations for the following year. The Belle Fourche Irrigation District (BFID) in South Dakota has continued their canal lining project with funding received through the Water 2025 grant program. Water quality improvements have also been gained through these lining projects, and the BFID has received Clean Water Act Section 319 non-point source grants as well. No irrigation releases were made from Keyhole Reservoir in the summer of 2010, nor summer, 2011. Keyhole Reservoir gained storage elevation from significant rainfall events in May-June 2011, ending water year 2011 at 166,274 AF or 2.5 feet from full.

Niobrara River Basin

Nebraska and Wyoming have begun holding annual Niobrara compact meetings, this year on October 25, 2010 in Torrington. Nebraska was successful in applying for a basin study from Reclamation's WaterSMART. Wyoming has been included on their technical group overseeing the completion of the study. The states technical group met via conference call on April 27, 2011.

Colorado River Basin (Green River and Little Snake River Basins)

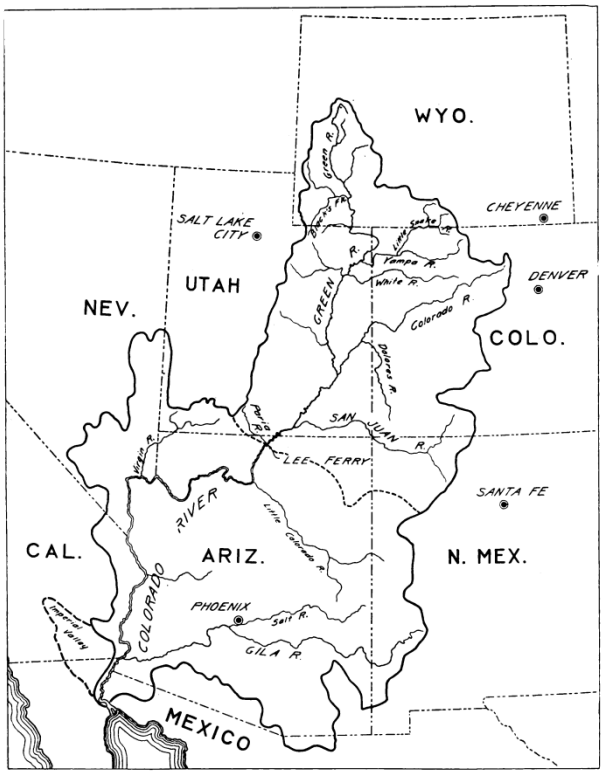
Above average stream flows were observed throughout much of the Colorado River Basin during water year 2011. Unregulated[1] inflow to Lake Powell in water year 2011 was 16.79 million acre-feet (maf), or 139 percent of the 30-year average[2] which is 12.04 maf. Unregulated inflow to

[1] Unregulated inflow adjusts for the effects of operations at upstream reservoirs. It is computed by adding the change in storage and the evaporation losses from upstream reservoirs to the observed inflow. Unregulated inflow is used because it provides an inflow time series that is not biased by upstream reservoir operations.

[2] Inflow statistics throughout this document will be compared to the 30-year average, 1971-2000, unless otherwise noted.

Flaming Gorge, Blue Mesa, and Navajo Reservoirs was 140, 117, and 66 percent of average, respectively.

Precipitation[3] in the Upper Colorado River Basin was well above average during the period of October through December 2010 but was below average in January 2011. During the months of February through April 2011, precipitation was again well above average and by May 1, 2011, the overall accumulated water year precipitation received within the Upper Colorado River Basin was 125 percent of average. On September 30, 2011, the cumulative precipitation for water year 2011 was 122 percent of average.



Map of Colorado River Basin (taken from the 1921-1922 *Sixteenth Biennial Report of the State Engineer to the Governor of Wyoming*)

The 2011 water year unregulated inflow into Lake Powell was the 6th wettest out of 48 years since the closure of Glen Canyon Dam (1963). Water year unregulated inflow volumes of the magnitude observed in water year 2011 (or greater) would statistically be expected to occur in about 12-14% of all years. Nonetheless, the annual Lake Powell inflow has been below average in nine of the past twelve water years (2000- 2011).

Provisional calculations of the natural flow for the Colorado River at Lees Ferry, Arizona, show that the average natural flow since water year 2000 (2000-2011, inclusive) is 12.82 maf. This is the *second lowest twelve-year average* in over 100 years of record keeping on the Colorado River. The following table summarizes Colorado River Basin conditions during the past twelve years:

3 Precipitation is an accumulated value representing both snow and rainfall measured at various mountain sites.

Upper Colorado River Basin Inflow and Powell and Mead Reservoir Storage For Water Years 2000 through 2011

Water Year	Unregulated Inflow into Lake Powell % of Average	End of Water Year Combined Lakes Powell and Mead Storage in maf	EOWY Lakes Powell & Mead Storage as % of Capacity
2000	62	43.38	86
2001	59	39.01	78
2002	25	31.56	63
2003	52	27.73	55
2004	49	23.11	46
2005	104	27.24	54
2006	72	25.80	51
2007	68	24.43	49
2008	107	27.04	54
2009	92	26.90	53
2010	73	25.46	51
2011	122	30.57	61

Over the past 12 years (2000 through 2011, inclusive), inflow to Lake Powell has been below the 30-year (1971-2000) average in all but three years (2005, 2008 and 2011).

The 2011 water year release volume from Glen Canyon Dam was 12.52 maf and this was the largest water year release volume made from Glen Canyon Dam since water year 1998. During water year 2011 the above average inflow volume combined with the large water year release from Glen Canyon Dam resulted in Lake Powell realizing a net gain in elevation (year over year) of 19.35 feet which translates to an increase in live storage in Lake Powell of 2.32 maf.

Hydrologic conditions in water year 2011 in the Upper Green River Basin were significantly wetter than average. The April through July inflow to Fontenelle Reservoir during water year 2011 was 1.22 maf, which was 142 percent of average. Snowpack conditions in the Upper Green River Basin were significantly above average with the peak snow water equivalent reaching 139 percent of seasonal average on May 3, 2011. The Upper Green River Basin has experienced a decade of drought conditions with below average inflows the past nine out of ten years. Inflows in water year 2011, however, were higher than have been experienced since 1997.

Inflow to Flaming Gorge Reservoir during water year 2011 was above average. Water year 2011 unregulated inflow to that reservoir was 2.42 maf (140 percent of average). Not surprisingly, Fontenelle Reservoir filled in water year 2011. Green River inflow to Fontenelle peaked at 13,500 cubic feet per second (cfs) on July 3, 2011, while reservoir storage peaked at an elevation of 6,502.44 feet on August 29th, (3.56 feet below the spillway crest). Reclamation operated the

outlet works to accomplish a peak release volume, through the powerplant and bypass tubes, of 8,800 cfs on July 15, 2011, and continued the releases at that level for four days.

Interim Shortage Guidelines and Coordinated Reservoir Operations

Calendar year 2011 was the fourth year of operations under the Colorado River Lower Basin Interim Shortage Guidelines and Coordinated Management Strategies for the Operations of Lake Powell and Lake Mead (Interim Guidelines). The coordinated reservoir operational guidelines tie releases from Lake Powell to ranges of reservoir storage elevation levels, or tiers, depending on the storage levels in both Lake Powell and Lake Mead. The Guidelines specify the elevations in Lake Mead which dictate when the Secretary will declare water use shortages in the Lower Basin and what the amount of those shortages will be during the interim period. The Guidelines also specify coordinated operational parameters for Lakes Powell and Mead, which have as their intent to operate the reservoirs to avoid the risk of water use curtailments in the Upper Basin and minimize shortages in the Lower Basin. The Interim Guidelines provide mechanisms to create and deliver conserved system and non-system water in Lake Mead (Intentionally Created Surplus [ICS]) to create additional water supply flexibility in the Lower Basin, to encourage water conservation in Lake Mead and moderate the severity of potential future shortages. In addition, the Guidelines modified and extended the existing Interim Surplus Guidelines, through 2026.

Section 6.B of the 2007 Interim Guidelines directed the Upper Elevation Balancing Tier to be the applicable operational tier for water year 2011 based on the projected January 1, 2011 Lake Powell elevation (projected as of August 2010). This resulted in a volume of 8.23 maf being initially scheduled for release from Glen Canyon Dam for water year 2011. Reclamation's April 2011 edition of the 24-Month Study projected Lake Powell (assuming an annual release volume of 8.23 maf) would end Water Year 2011 at elevation 3,662.6 feet and Lake Mead's water level would be at 1105.3 feet. Section 6.B.3 of the Interim Guidelines therefore directs, based on these mid-year projections of reservoir elevations, that Glen Canyon Dam operation be governed by the Equalization Tier for the remainder of water year 2011. The April 24-Month Study projected a Lake Powell annual release volume of 11.56 maf. The actual Lake Powell annual release volume ended up being 12.52 maf of water.

Upper Colorado River Basin Fund Memorandum of Agreement

After several years of collaboration and negotiations, a *Memorandum of Agreement Concerning the Colorado River Fund* (MOA) among the Upper Division States of Colorado, New Mexico, Utah and Wyoming, the Colorado River Energy Distributors Association (CREDA), the U.S. Bureau of Reclamation and the Western Area Power Administration went into effect after execution by all parties. Governor Matthew Mead signed the document on January 24, 2011. The MOA is an interim agreement that will end on September 30, 2025 unless extended by mutual agreement of the parties. During the interim period, the parties have agreed to alter the collection and distribution of hydroelectric power revenues, consistent with authority provided in the Colorado River Storage Project Act (CRSP Act) to do so, in order to 1) eliminate the collection of power revenues for repaying project construction purposes beyond those amounts needed to repay the costs of Colorado River Storage Project (CRSP) Act-authorized and

constructed projects and 2) create a funding stream of MOA Revenues for CRSP operation, maintenance and replacement projects to be identified and prioritized by the States and for which the MOA Revenues will be administered by the U. S. Bureau of Reclamation.

CREDA members (and other customers using CRSP-produced power) will benefit through some rate mitigation by Western Area Power Administration's reduced collection of power revenues associated with apportionment accounting. The MOA provides for complete repayment of the costs of participating projects that are already under construction and are beyond the ability of the irrigators to repay as required by the CRSP Act. No cost-sharing funds will be required from the Upper Division States and further, no participating projects that are currently authorized but not built will be deauthorized by the MOA. This innovative and significant agreement should reduce some of the demands for Wyoming Water Development Commission water project funding assistance by entities having contractual relationships with the U.S. Bureau of Reclamation and should ensure that federal water project infrastructure in Wyoming and the other Upper Colorado River Basin States is maintained in proper and effective working condition as it provides an additional stream of revenue, beyond the normal federal appropriations process, for accomplishing timely and appropriate operation, maintenance and replacement care.

Under the MOA, each Upper Division State will identify and prioritize projects within their state that are to be paid for with MOA Revenues. The Non-Federal Parties will annually make recommendations on projects and activities to be funded and Reclamation will expend the funding required to complete the project activities. Examples of MOA Revenue-funded project categories that are being considered include repair, rehabilitation, replacements, and extraordinary maintenance of the CRSP initial units and participating projects' facilities, reservoir system operations computer simulation modeling and snowpack data collection; flow gaging/water administration monitoring; and water administration costs.

In addition, activities that improve the efficiency and operation of CRSP initial units and participating projects will be considered; however these would need to be separated into Federal and Non-Federal facilities, since there is a Reclamation-wide ceiling for Non-Federal grants. We have suggested, and Reclamation concurs, that they could use MOA Revenues to complete the placement of riprap on the upstream face of Fontenelle Dam. Further, costs of environmental compliance for CRSP initial units, including biological opinions or programmatic biological opinions and associated improvements necessary to satisfy compliance for continuation of operation of facilities will be eligible. Funding for improvements to support environmental compliance could be applied to improvements on CRSP participating projects or other Reclamation projects, e.g., lining of canals, diversion structure improvements, efficiency improvements on pumping plants, or the construction of fish passage structures or temperature control structures. As one additional example, the biological opinion covering the Aspinall Unit will necessitate extensive funding to reduce selenium concentrations within the Gunnison River Basin. Costs associated with the ongoing endangered fish recovery programs would be eligible, along with quality of water studies and salinity control projects.

Negotiations with Mexico re: Delivery of Colorado River Water

As reported in last year's annual report, an earthquake centered in the Mexicali Valley in Mexico that occurred on Easter morning, 2010 caused major canal and ditch damage severely impacting Mexico's ability to deliver water to 148,000 acres of irrigated land. Unable to deliver a portion of its 1.5 million acre-foot annual allotment of Colorado River to its users, the Republic of Mexico, through the Mexican Section of the International and Boundary Water Commission, sought an interim international agreement with the United States that will adjust the delivery schedules for Mexico's allotted water for 2010 through 2013. Eventually, Minute No 318 to the Mexican Water Treaty was signed on December 17, 2010. Under its terms, up to 260,000 acre-feet of deferred delivery water may remain in Lake Mead through December 31, 2013, and can be delivered from Lake Mead into Mexico after their canal reconstruction occurs. Mexico's ability to store some of its apportionment in U.S. reservoirs may decrease the likelihood or duration of shortage in the next few years. This water stored in Lake Mead to benefit water management for Mexico will be charged a 3 percent per year evaporation charge

Pursuant to Minute No. 317 signed on June 17, 2010, discussions had already been underway, prior to the Easter 2010 Earthquake, between the United States and Mexican Sections of the International Boundary and Water Commission exploring opportunities to develop bi-national projects of mutual benefit to both countries, avoid and minimize the impacts of potential Colorado River shortage conditions, generate additional volumes of water using new water sources by investing in infrastructure such as desalination facilities and implementing efficiency, conservation and augmentation and shortage sharing projects. The State Department and the Department of the Interior invested significant effort into keeping representatives of the seven Colorado River Basin States apprised of the negotiations with Mexico and in encouraging the States to consider proposals specific to how Mexico would share in water shortage and surplus delivery conditions should such occur in the future.

Considerable time has been devoted by Reclamation and Basin States' personnel in evaluating proposals and developing conceptual proposals and written language that is acceptable to all parties in the Upper and Lower Colorado River Basin and in the nations of the United States of America and the Republic of Mexico. Mexico has insisted that the discussions be held at the nation-to-nation level, therefore Reclamation and the State Department have had to provide extensive debriefings and make post-meeting reports to the Basin States. Mexican officials believe that their nation's presidential elections in mid-2012 dictate that an agreement be reached, if one can be, during the first quarter of 2012. There remained several substantial conceptual differences about the terms of the proposed agreement and many specific details to be worked out at the end of this reporting period.

Upper Colorado River Commission Activities

The 1948 Upper Colorado River Basin Compact divided the water apportioned to the Upper Basin states on an annual flow percentage, giving Colorado: 51.75 percent, New Mexico: 11.25 percent, Utah: 23 percent and Wyoming: 14 percent. The Compact created the Upper Colorado

River Commission; an administrative agency addressing all matters affecting the operation and administration of the Colorado River system. The Commission met on June 8th in Boulder, Colorado and on December 14th in Las Vegas, Nevada. In addition, the Commissioners held three face-to-face work sessions and participated in numerous ad-hoc conference calls in 2012.

Article IV provides for determining the amount of water Wyoming and its sister states of the Upper Division have to provide in the event "curtailment of the use of water by the States of the Upper Division at any time … become[s] necessary in order that the flow at Lee Ferry shall not be depleted below that required by Article III of the Colorado River Compact." Specifically, the Upper Division States' would have to reduce their water consumption if the ten-year running average flow past the Compact point (Lee Ferry, AZ) was to fall below 75 million acre-feet of water. The Upper Colorado River Commission and the Members of its Engineering Committee continued working on developing common understandings, and reaching conceptual agreement on policy and technical procedures pertaining to quantification of annual water uses in the Upper Colorado River Basin and water use curtailment administration, should it be required in the future. While no curtailment has historically occurred, Wyoming and our sister states need to be ready, with all procedures worked out in advance, to annually and with defensible accuracy, estimate consumptive water use in the Upper Colorado River Basin. While much work remains to be done, failure to be ready to administer the Compact would not be in the best interests of Wyoming's water users. Accordingly, the State Engineer's Colorado River Compacts Administration Program (described below) is ongoing.

Colorado River Basin Salinity Control Program

Established by the Governors of the seven Colorado River Basin states in 1973, the Forum works jointly with federal agencies and the Congress to develop, fund and implement salinity reduction measures to meet national, international and state water quality objectives for the Colorado River system The Salinity Program is a unique cooperative watershed effort resulting from EPA's interpretation that 1972 amendments to the Clean Water Act required water quality standards, including beneficial use designations, numeric salinity criteria, and a plan of implementation for the Colorado River. Numeric criteria stations were subsequently established (below Hoover Dam, below Parker Dam and at Imperial Dam) by the Forum. To date, the Program has controlled more than a million tons of salt discharge annually and has reduced the salt concentration in the Lower Colorado River basin by approximately 130 milligrams per Liter.

The Interstate Streams Division of the State Engineer's Office continues to actively participate in the activities of the Colorado River Basin Salinity Control Forum, the Forum's Work Group and the Colorado River Basin Salinity Control Advisory Council (established as a Federal advisory committee by the 1974 Salinity Control Act). In addition, the Division continues its longstanding efforts associated with reducing salt loading into the Green River's tributaries at the Big Sandy Unit of the Colorado River Salinity Control Project (contiguous with the boundaries of the Eden Valley Irrigation and Drainage District, which includes the communities of Eden and Farson).

Upper Colorado River Endangered Fish Recovery Program

Considerable effort was expended during this reporting period to amend the annual base program funding legislative authorities of the Recovery Program and its sister program in the San Juan River Basin. Necessary capital program authorization extensions became Section 9107 of Public Law 111-11, the Omnibus Public Land Management Act of 2009 signed into law in March 2009. It is indeed unfortunate that the annual program authorization extension language was dropped from the 2008 bill, as the authority to use Upper Colorado River Basin Fund power revenues for the recovery program's annual base funding activities, with the exception of annual operation and maintenance and monitoring activities, expired on September 30, 2011. Reauthorization requires action by the Congress. Failure to obtain continued authority to use Upper Colorado River Basin Fund power revenues for all annual base funding purposes would result in a 40% reduction in annual funding and significant Endangered Species Act compliance and sufficient progress issues for both programs; thus legislation is needed to extend P.L. 106-392 authority to use Colorado River Storage Project power revenues for annual base funding purposes through the end of fiscal year 2023.

The annual briefing trip to inform the participating states' Congressional Delegation members' staff, authorizing and appropriation Congressional committee staff members and Department of the Interior and Interior agency officials about the current status and funding needs of the Upper Colorado and San Juan recovery programs was conducted in mid-March, 2011. The group representing the two recovery programs held 32 meetings during the trip. We once again demonstrated that we have exceedingly strong bipartisan support for our ongoing recovery program efforts and for the Bureau of Reclamation and the Fish and Wildlife Service funding required to conduct the recovery programs.

Glen Canyon Dam Adaptive Management Work Group

The Adaptive Management Work Group (AMWG) is a Federal Advisory Committee Act (FACA) federal advisory committee established pursuant to the 1996 Record of Decision on the Operation of Glen Canyon Dam Final Environmental Impact Statement. The AMWG is charged with making recommendations to the Secretary of the Interior on budgets, resources monitoring and other work to advance the purposes of the Grand Canyon Protection Act of 1992.

Colorado River Basin Water Supply and Demand Study

We are serving on three subcommittees and on the Project Study Team for Wyoming for the ongoing "Colorado River Basin Water Supply and Demand Study" being cost-shared equally by Reclamation and agencies in the Basin States. The Study, scheduled to be completed during a two-year period, has been extended by about six-months and will conclude at the end of July, 2012. The Study is defining current and future imbalances in water supply and demand in the Colorado River Basin (Basin) and the adjacent areas of the Basin States that receive Colorado River water for the next 50 years and developing adaptation and mitigation strategies to resolve those imbalances. The purpose and objectives for the Study can be expressed in two fundamental questions: first, what is the future reliability of the Colorado River system to meet the needs of

Basin resources through 2060? Secondly, what are the options and strategies to mitigate future risks to these resources? We are hopeful that this study will lead to **actions** in the Basin to improve the water supply and water management situation.

Green River Basin Advisory Group

The Interstate Streams Division continues to actively participate and provide update briefings on interstate water matters at each meeting of the Green River Basin Advisory Group (GRBAG). The Water Development Commission only convened a GRBAG meeting once during 2011; the Interstate Streams Division presented an update and situation analysis presentation on ongoing interstate activities and policy matters at that meeting. We view providing information and public outreach to the members of the GRBAG as an integral purpose of those meetings.

Colorado River Compacts Administration Program

The Colorado River Compacts Administration Program was initiated in 2006. The overall purpose of the program is two-fold; 1) to strengthen the State's abilities to perform administrative requirements within Wyoming as outlined in the Colorado River and Upper Colorado River Basin Compacts, and 2) to provide the State of Wyoming, State Engineer's Office with the capability to annually and accurately estimate the quantity of water that is being consumptively used in the Colorado River Basin of Wyoming. The initial objective for this program was to develop a plan and associated implementation budget to begin to acquire the tools and subsequent data necessary to meet the program goals. This plan, entitled the Consumptive Use Determination Plan (CU Plan), was completed by the Colorado River Coordinator and approved by the State Engineer in January 2008. Plan development and implementation, as well as overall program management is the responsibility of the Colorado River Coordinator (CRC).

The CU Plan was structured to address seven main components. These components include; 1) climate and hydrology, 2) diversion and consumptive use, 3) water rights attribution, 4) reservoir operation, 5) groundwater, 6) administration/decision support tools, and 7) outreach. Below is a brief description of activities undertaken during Water Year 2011 under the seven program components outlined in the CU Plan. Noted are completed efforts, status of ongoing tasks, any proposed changes in direction of the program, and/or newly proposed tasks or program requirements.

Climate and Hydrology: The four weather stations installed in 2010 were operated continuously thru out 2011. These stations are located in irrigated areas of the New Fork drainage, the Upper Green drainage, Bridger Valley and Farson-Eden. Data checks for each station are made each morning to ensure they are operating. Several site visits were made during the year to check enclosures and overall site status. Also, every station had a full inspection and calibration performed by High Plains Regional Climate Center personnel in September. Data can be accessed via the HPRCC website (http://www.hprcc.unl.edu/awdn/).

The two smaller Campbell Scientific ET-107 weather stations were pulled from the field at the end of the 2010 growing season and returned to Campbell Scientific for a full maintenance check and recalibration. These stations were reinstalled in June and operated thru the remainder of the 2011 growing season. The Ryegrass station was replaced at the same Cottonwood Creek site, while the Robertson station was moved to a location in the Henrys Fork drainage.

The hydrology model component discussed in the CU Plan has been wrapped into the Decision Support System (DSS) project which is discussed in the "Administration/Decision Support Tools" section below.

Diversion and Consumptive Use: Accurate and detailed information on water supply, diversion and consumption has been a long-standing critical need for river and water resources management in the Green River basin. Quantification of consumption is increasingly needed as water resources come under more and more stress by more and more users and interests and as water is transferred from agricultural needs to municipal, industrial and other uses. In the FY11-12 budget (which began on 1 July, 2010), funds for the majority of instrumentation efforts in the basin were shifted in to the Board of Control – Division IV budget, while funds for other identified tasks within the CU plan remained within this program. As such, the status of stream, diversion and reservoir instrumentation will no longer be reported here.

One of the largest efforts undertaken this past year was the initiation of a five year remote sensing program. This effort started with the development of a Request For Proposal (RFP) to solicit technical and cost proposals from third party consultants. The RFP was issued in May. We ultimately received three full proposals from consulting firms. After review of submitted technical and cost proposals, Riverside Technology (RTI) from Fort Collins, CO was selected as the prime contractor for this project. RTI's prime function will be to process satellite imagery and provide estimates of ET from the irrigated lands in the Green and Little Snake River basins. RTI's contract runs for a five year period.

Finally, the research project initiated jointly with the North Platte Coordinator through the Office of Water Programs at the University of Wyoming made nice progress. The project was funded in 2010 and has developed some very useful tools. The project will wrap up in early 2012. The abstract from the project proposal is below:

> *Accurate estimation of crop consumptive water use in the State of Wyoming is a key component for making decisions in irrigational policy and allocations of water and administration of water rights. State water resources managers utilize crop consumptive water use data to monitor and guide farmers and make a sustainable future plan and decision. The proposed project will utilize the best available local weather station data along with Parameter-elevation Regressions on Independent Slopes Model (PRISM) data to accurately represent spatial variation of weather pattern for the State of Wyoming. Several GIS-based tools (ArcInfo model, ArcGIS extension, and web-based analysis tool) would be developed, and it will help water resources managers as well as local water users to make operational decisions in an easier and faster fashion. The resulting products would be daily, monthly and seasonal state-wide reference ET, crop ET, and CIR at 800 m x 800 m resolution*

and user-friendly analysis tools for the calculation of mean ET and CIR for any area of interest within the State of Wyoming. The software would allow the state water resources managers to calculate the crop ET of a specific crop or all the crops in a given County of interest or irrigation project in any given River Basin within the State of Wyoming.

During the past year we have met with the Principal Investigator several times. Final work products should be received in early 2012.

Water Rights Attribution: No significant updates to the WyWRAG system were made this past year. The framework of the final WyWRAG product is well done. The current limitation to its use is the "quality" of much of the water rights data it contains. WyWRAG was constructed based on the SEO's old water rights database (only one available at the time). That database was incomplete and uniformity in data entry was not maintained. The result is that WyWRAG now has the same issues. WyWRAG has been designed to be able to link directly into our new "e-permit" database. Board of Control personnel are now working to QA/QC adjudicated water rights data in Division IV for the purpose of printing a new Tab Book. Once that work is completed, the geodatabases in WyWRAG should be able to be updated accordingly.

Reservoir Operation: The instrumentation of reservoirs in the Green River basin to obtain better documentation of reservoir operations is included in the overall instrumentation efforts in the basin. As previously stated, this effort has now shifted to Division IV personnel. Operational data from instrumented reservoirs will be important as we begun to develop hydrologic models as part of the Decision Support System.

Groundwater: As part of the Green River Basin Plan update being done by the WWDO, the Wyoming Geological Survey and the U.S. Geological Survey were contracted to complete an inventory and assessment of available groundwater information in the Green River and Little Snake River basins. This report is now complete and has been included as part of the Final 2011 Green River Basin Plan. This work product serves as the basis for any needed groundwater assessments as part of this program. When and if additional groundwater work is needed relative to this program, consultant services will be hired.

Administration/Decision Support Tools: The Colorado River Compact Administration Program was initiated to develop a process, set of tools and baseline data to address any issues or questions which may arise in the event a "curtailment" is called by the Upper Basin Commission. As discussed in the section above entitled "Upper Colorado River Commission Activities", the Commission and the members of its Engineering Committee continue to work on developing a policy and technical procedures pertaining to quantification of annual water uses in the Upper Colorado River Basin and how curtailment of water use would be administered. Finalization and acceptance of these procedures will be very helpful in determining how best to move forward in the development of specific "analysis tools".

The "Green River Decision Support System Feasibility Study," led by the Water Development Commission in cooperation with this office, was completed by Leonard Rice Engineers in March, 2011. The completion of the Feasibility Study and the final set of recommendations

provided are an important step in the overall water resource management and planning future for the state. In addition, the study is an important component in setting the focus and priorities of this program in the coming years. As such, the Executive Summary from that work is shown below.

The Green River Decision support System (DSS) Feasibility Study addresses many of the data collection, data management, and water use modeling issues discussed in the Statewide Framework Water Plan. It also provides recommendations that shift the planning paradigm from prescriptive to proactive - acknowledging that predicting the future is less reliable than building a system that can look at many possible futures and easily react to unanticipated realities.

There are base assumptions that drive most traditional water resource plans including that past hydrology can be used to represent the range of hydrology likely to be seen in the future; economic outlook models and population forecasts can be used to reasonably predict ranges of future water demands; and current policies and procedures can be expected to dictate how future demands are satisfied.

The planning reports that result from this static methodology address water issues identified at the time of the planning study – and may be out of date before the study is completed. A decision support system uses a more proactive method, as it is comprised of a series of data and analysis tools, which can be used to dynamically address both anticipated and unanticipated water issues.

What is a Decision Support System?

A decision support system is an information-driven system that manages data and provides tools to access and analyze these data to make informed decisions. Raw data, including tabular and GIS-based mapping information, is stored and managed so it can be easily updated and extracted. Analysis tools, including water demand and allocation models, are used to analyze current and potential water scenarios. The analysis tools change raw data into useful information that can be applied by decision makers to address anticipated planning issues, and to answer "what if" and "how much" water supply and demand questions that arise in the future.

Why a Decision Support System Now?

The timing is right to move towards the Green River Decision Support System. Many aspects of previous planning efforts undertaken by Wyoming can be used in the Green River DSS, specifically:

- *Wyoming can take full advantage of previous and current data collection efforts.*
- *The WWDC has provided web-based access to GIS layers and planning documents, and the SEO has initiated the development of data management systems.*
- *Wyoming is a leader in public education and has already garnered public acceptance and support for planning efforts.*
- *More stringent federal regulations require project proponents to develop detailed models to show purpose and needs and water availability.*

Green River Decision Support System Approach

The following general approach was taken during this Feasibility Study to identify and address the needs of the State.

- *Needs Assessment – Identify the types of questions the DSS needs to answer*
- *Data Assessment – Determine the information required to answer the questions, and how to store and manage that information*
- *DSS Components – Identify the tools required to answer the questions*
- *System Integration – Determine how information is accessed to answer the questions*
- *Staffing Requirements – Define the agency and personnel roles to assure long term continuity*
- *User Involvement – Identify education and training programs to assure continued support*
- *Cost/Schedule Estimates – Determine the most cost-effective implementation schedule*

NEED FOR A DECISION SUPPORT SYSTEM

To determine the need for the Green River DSS, the roles and responsibilities of the two State agencies primarily responsible for the protection and development of the State's water resources, the SEO and WWDC, were identified and documented. Needs of other entities with water interests, including water providers, were also considered and were determined to generally fall within the larger needs of the SEO and WWDC. The needs can be generally grouped into four categories:

- ***Data and Information Needs***
  This category generally involves the review of existing data and the collection of new data including additional streamflow measurements, diversion measurements, reservoir measurements, and physical basin information. Much of this information is needed prior to the development of any models and will also impact the enhancement of the data management systems.

- ***Data Management System Needs***
  There was no need identified for new database management systems; only the need for continued and increased efforts to enhance the existing e-Permit, Aquarius, Web Mapping Tool and WYWRAG systems.

- ***Database Integration Needs***
  The need to query, extract, and format information from the e-Permit, Aquarius, and WYWRAG databases was identified. In addition, there is a need to allow relationships to be developed between the three databases based on unique structure identifiers.

- ***DSS Modeling Components***
  Needs for modeling components were identified for compact reporting requirements and for determining project feasibility. The need for a standard method and tool to determine potential and actual consumptive use and the need for a standard surface water allocation tool was discussed. The need for a ground water model as the DSS expands into other basins was also discussed.

The development of standard procedures for data collection and modeling, and training on the DSS components, rounded out the Green River DSS needs.

RECOMMENDATIONS AND IMPLEMENTATION

The Green River DSS Feasibility Study provides recommendations on how to implement DSS procedures and components to address the needs identified by the WWDC, SEO and other water entities. The recommendations include specific tasks, a recommended implementation schedule, and address whether the task will include State staff responsibilities, consultant contract responsibilities, or capital purchases.

Staffing Recommendations

The Green River DSS Team is recommended to include existing and recommended future staff from the SEO, WWDC, and WRDS. Many of the Green River DSS Team members are existing positions and their specific expertise will allow them to serve as advisors during initial implementation and on-going use of the DSS, without adding significant responsibilities to their current workload. Four new positions are recommended to meet DSS needs that cannot be addressed without overloading current staff. The recommended Green River DSS Team staff members are as follows:

- ***DSS Project Manager**: A new position within the SEO, this position will be an advocate for the Green River DSS and be responsible for managing the SEO DSS Team, overseeing data collection and management activities, and maintaining a strong relationship with the WWDC team members.*

- ***DSS Field Liaison**: A new position within the SEO, this position will initially help ground-truth and finalize the irrigated acreage assessment and then continue to assist with installing new diversion measurement flumes and temporary stream measurement sites, and help with subsequent site visits to record diversions.*

- ***Data Entry Staff**: Two new positions within the SEO, these positions will work with Division 4 to identify and obtain existing electronic information, digitize historical surface and ground water diversions from paper records, and perform quality control of water permit data migrated to the e-Permit database from the previous database.*

Data Collection Recommendations

Once an assessment of available data and a summary of current on-going data collection efforts were performed, additional recommendations are made to either initiate new data collection efforts or follow defined procedures to help direct on-going efforts to continue to meet the identified Green River DSS needs. Data collection recommendations involve the following data types:

- *Irrigated Acreage and Water Rights*
- *Streamflow Measurements*
- *Diversion Measurements*
- *Reservoir Measurements*
- *Climate Data*
- *Physical Basin Information*

Data Storage and Management Recommendations

The current SEO database development efforts for the e-Permit, Aquarius, WRDS and WYWRAG database systems, as well as their hardcopy data system, were investigated to assess how the

systems currently meet the needs of the Green River DSS and to identify recommended improvements. Many of the Green River DSS recommendations involve standardizing data management procedures, providing customized access forms, developing relational links between the systems, creating additional tables for historical information, and expanding the systems to accommodate new types of data.

DSS Modeling Recommendations

The recommended model platform for basin crop consumptive use modeling is StateCU, and the recommended platform for surface water allocation modeling is StateMod. Both publically available models are used in Wyoming and Colorado, and meet the needs identified for the Green River DSS. A StateCU model was previously developed for the Green River basin that estimates the consumptive use on irrigated acreage identified in the initial WYWRAG efforts. Likewise, a StateMod model was developed as part of the recent Green River Basin Plan update that represents a portion of the upper basin tributaries and the main stem Green River. It is recommended that these models be enhanced and extended to include additional data collected, digitized, and stored as part of the Green River DSS. It is also recommended that specific data to model integration tools be developed to allow data to be extracted from the SEO databases, missing data to be filled using identified standard procedures, and the data to be formatted for model input files.

Standard Procedure Recommendations

Standard procedures will provide guidance to the DSS Team and consultants, assist with training, and help meet the Green River DSS goal of developing data and tools that are consistent, reproducible, and transparent. Standard procedures will be developed for common recurring tasks associated with sharing data between consultants, WWDC, SEO and WRDS. Likewise, standard modeling procedures will be developed. Recommendations also discuss the importance of developing initial standard procedures prior to initiating modeling efforts and revisiting these procedures as new data becomes available.

Interagency Coordination & Outreach: Coordination with other agencies, outreach to water users and others and professional interactions is a key component in moving this program forward. As work is undertaken as outlined in the CU Plan and/or discussions occur on the possible curtailment of water uses in the basin, there will be a keen awareness of this program by water users in the basin. It is imperative that all the activities of this program occur in a very open manner, with the public and others provided the opportunity to see the tasks and results as they progress. In addition, it is important to keep aware of new and innovative technologies that may be utilized to develop solutions to water management issues. With that in mind, we try and share data and general program information with whoever has a need or an interest as well as stay involved with pertinent professional organizations. Some examples of interagency coordination and other activities engaged in during the past year include:

- Attended the Western Governors' Association Drought & Climate meeting in Washington D.C.
- Attended the IAHS Remote Sensing & Hydrology Symposium in Jackson, WY
- Organized a special session for the 2011 Annual Meeting of the American Water Resources Association entitled "Assessing the Consumptive Use of Water via Remote Sensed Data"

- Coordinated with Colorado Basin River Forecast Center on data exchange and "needs assessment"
- Attended a training course at Campbell Scientific in Logan, UT
- Have participated on the Interstate Council for Water Policy's Water & Data Science Committee
- Worked with the Executive Director of the Upper Colorado Basin Commission on remote sensing activities
- On two occasions, lectured to University of Wyoming water resource class
- Participated in an Advisory Board meeting for the Western Water Assessment program at the University of Colorado
- Attended a Green River Basin Advisory Group meeting in Rock Springs
- Attended a "Communities of the Green River" meeting to discuss water speculation issues
- Participated in Interstate Stream "compact training" sessions for agency personnel

Bear River Basin

The Bear River Commission met November 10, 2010 and April 19, 2011. The April meeting was held at the new Visitors Center at the Bear Lake National Wildlife Refuge. With the large runoff in 2011, all upper reservoirs filled and Bear Lake went well above the compact defined elevation of 5911'. The Technical Advisory Committee (TAC) continues their work of estimating depletions that have occurred from 1990 to 2009. All three states' (Idaho, Utah and Wyoming) GIS staff all have access to NAIP photography flown in 2009. Many thanks are due Beth Hoobler for her work in digitizing the irrigated acres in the Bear River basin of Wyoming. The Commission's Management Committee met in September, 2011 to give guidance to the TAC on how the 1990 commission approved maps should be compared to the new depletion maps given the large leap in technology and the improvement in the accuracy of the mapping software.

Bob Hill is retiring after his long career at Utah State University, but he has completed his final recommendations for the Commission on whether new depletion amounts should be used once the irrigated lands numbers are finalized.

Snake River Basin

The Wyoming State Engineer's Office, the Wyoming Game and Fish Department and the Bureau of Reclamation have been meeting each fall and spring since Wyoming purchased 33,000 acre feet of storage in Palisades Reservoir in 1990. Since all of the contracted use out of both Jackson Lake and Palisades Reservoir is delivered to lands downstream of Palisades in Idaho, the Bureau of Reclamation and the State of Idaho—District 01 allows Wyoming through a paper transfer to use the Palisades water right storage out of Jackson Lake. Winter releases for 2010-11 were initially set at 375 cfs, but due to the high levels of precipitation were raised to 490 cfs by mid-January, 2011. Flood evacuation releases out of Palisades Reservoir were made in May and June. The fall agency meeting was held September 15, 2011 and the winter releases for 2011-12 will be between 500 and 600 cfs. Due to the large amounts of snow and rain received before and

during the irrigation season, the end of season storage in the Upper Snake system was at an all-time high in September, 2011. A lease agreement was negotiated with the Idaho Groundwater Appropriators, Inc. for an option to purchase water from Wyoming's Palisade's account.

Wild and Scenic: The Wild and Scenic Rivers Act states that management plans should be developed within 3 years after the designation of a river segment. The congressional action for the Snake occurred in March, 2009, but both the Bridger-Teton Forest and the Grand Teton National park personnel have stated that they believe it is unlikely the management plans will be complete in 3 years. A meeting was held March, 23, 2011 with staff from the national park service's water rights branch from Ft. Collins. A technical group of state and federal representatives has been assembled and the group held their first conference call on September 26, 2011.

Water Organizations and Policy Issues

Water Forum

The State Engineer serves as the Chairman of the Wyoming State Water Forum. The Water Forum meets monthly beginning in September and ending in May and provides state and federal agency personnel a regular opportunity to share information and insight on water activities that are ongoing in their respective agencies. Each month, a special program is presented providing a more in-depth view of a particular water related issue or topic. During this last season, topics for Water Forum ranged from a presentation on "How the Bark Beetle Epidemic is Influencing Forest Hydrology" given by Dr. Brent Ewers to information given to the Forum through a presentation by Tim Bartos of the U.S. Geological Survey on the High Plains Aquifer. The current schedule and past and current Water Forum minutes are kept on the State Engineer's Office website at: http://seo.state.wy.us/news.aspx. The Forum provides an important information exchange mechanism in an informal setting.

Governor's Planning Office and Army Corps of Engineers Notices

The Interstate Streams Division is responsible for reviewing and responding to all notices received from the Governor's Planning Office and the Army Corps of Engineers. The notices from the Governor's Planning Office include, but are not limited to, proposed actions, scoping statements, environmental impact statements (draft and final), environmental assessments and resource management plans as well as other National Environmental Policy Act (NEPA) documents. The notices from the Army Corps of Engineers are notices of applications for Section 404 permits. During this last reporting period, 29 notices were received from the Governor's Planning Office and 2 were received from the Army Corps of Engineers. The Interstate Streams Division is also responsible for attending any meetings that pertain to projects of special interest to the State Engineer's Office. These meetings often include tours of the affected area, open houses and public meetings. Meetings with other cooperators to help develop purpose and need statements and alternatives for projects are also attended by this division.

The Governor's Planning Office has initiated State and Federal Coordinating Committee (SFCC) meetings. These meetings convene on a monthly basis and provide an opportunity for state and federal agencies to discuss NEPA projects and other projects and activities occurring around the state.

Interstate Council on Water Policy

The ICWP is a nation-wide water policy organization with membership made up of state water resource agencies and interstate water management entities. The ICWP continues to spearhead a work group made up of representatives from ICWP, Western State Water Council, National Water Resources Association and the Association of Floodplain Managers to raise the awareness of the continuing funding erosion of the USGS's streamgaging programs, namely the Cooperative Program and the National Streamflow Information Program (NSIP). Members of this consortium met with Director McNutt on April 9, 2011 in conjunction with the ICWP annual Washington Roundtable.

Sue Lowry is ICWP's representative to the Advisory Committee on Water Information (ACWI) which is a Federal Advisory Committee Act-commissioned group to provide public input on water programs of the USGS, EPA, NOAA, and other federal agencies. ICWP led an effort to get the current work groups of ACWI better coordinated in their work on climate change issues.

Western States Water Council

WSWC is continuing implementation of the issues identified in a report completed for the Western Governors Association (WGA) entitled: "Water Needs and Strategies for a Sustainable Future". Two issues addressed in the report were focused upon by the Council: Infrastructure Funding and Water/Energy nexus. The WSWC hosted a 3 day seminar in San Antonio November 8-10, 2010 on the role of the states along with other partners have in ensuring functioning water infrastructure into the future. The WGA secured funding from the Dept. of Energy and has contracted with Sandia National Lab to better understand the relationship between water and energy, both use and development. Also, the first of three water transfers workshops was held in conjunction with the Council's regular meeting in Bend, OR on July 26, 2011.

Upper Missouri Water Association

The Annual Congressional Briefing to Upper Missouri states was held in Washington DC on April 5, 2011 in conjunction with the National Water Resources Association meeting. The 2010 Annual Meeting was held on November 2-4, 2010 in Billings, MT in conjunction with the Montana Water Association annual meeting. Sue Lowry completed four years as Chair at the Billings meeting.

Ogallala Aquifer Institute

Although not officially disbanded, no activity occurred with this group during the reporting period.

Other Coordination Meetings

During this reporting period, the Division also served on the NRCS's State Technical Committee and coordinated the inter-agency meetings with Water Development Commission, NRCS, DEQ and Game and Fish.

Water Planning

The 1996 Legislature directed the Wyoming Water Development Commission (WWDC) and the State Engineer's Office (SEO) to prepare recommendations for updating the 1973 Wyoming Framework Water Plan. Following this direction, the two agencies submitted a joint recommendation to the Governor, the Select Water Committee, and the WWDC on October 1, 1996. In 1997, the Legislature directed the WWDC to conduct a water-planning feasibility study with the assistance of the SEO and the University of Wyoming (UW). The Bear River Basin was chosen as the site for the feasibility study and a pilot analysis soon began. Throughout the pilot study, the WWDC maintained an intensive public outreach effort, completed a statewide water data inventory, and was advised by a multi-agency scoping group. With the help of an independent consulting firm, under contract to the WWDC, final recommendations for implementing future water plans were drafted for seven planning areas in Wyoming. The recommendations consisted of time lines, necessary agency staffing, estimated costs, process goals, and vision of the final products.

There are seven planning areas within Wyoming – the Bear, Green/Little Snake, Powder/Tongue, Northeast Wyoming (Little Missouri, Belle Fourche, Cheyenne, and Niobrara basins), Snake/Salt, Wind/Bighorn, and Platte basins. The products created for each plan consist of a series of technical memorandum describing each topic outlined in the contract with the WWDC. An executive summary and final report, spreadsheet models of the basin's water supply and uses, and various mapping products are also part of the final product. The Platte River basin includes a web based presentation tool. All of these products are on the Water Planning website (http://waterplan.state.wy.us/). This enables anyone who is interested access to the data, mapping and modeling.
From 2000 – 2005, the first round of planning was conducted. By the end of 2005, each of the seven water basin plans had a completed plan. With completion of these plans, discussions turned to reviewing the 1974 Framework Water Plan and bringing it up to date.

Framework Water Plan

In 2005, the Wyoming Water Development Commission (WWDC) was appropriated $500,000 by the Legislature to update the 1974 State Framework Water Plan. The updated Framework Water Plan summarizes the work that was completed over the last 6 years on all seven river basin plans and serves as a resource for current and future water planning.

WWC Engineering (WWC) of Laramie, WY was selected as the firm to complete the updated Framework Water Plan. This plan contains two volumes. Volume I presents a statewide perspective on water resources, compiled from the seven basin plans. The purpose of this document is to provide information so practical decisions can be made concerning water and related land resource development in Wyoming. Volume II provides planning and management direction that is a result of comments and ideas that came from members of the seven Basin Advisory Groups (BAGs), a three-tiered survey, observations of the WWC consulting team and the water planning team, and ideas and opinions of state agency staff. A copy of the 2007 Framework Water Plan can be found at:
http://waterplan.state.wy.us/frameworkplan.html

One of the tasks that WWC was asked to perform as part of the Framework Water Plan was to determine the order of the next round of updates of the individual basin plans. When water planning began in 2000, the intent was it would be an ever-evolving process. Now that individual plans have been completed in all seven of the basins and summarized in the 2007 Framework Water Plan, the process has started once again.

Water Plan Updates

The first basin chosen to begin the update process was the Green River Basin. WWC Engineering (WWC) of Laramie, WY, the consultant selected to develop the Green River Basin Plan II Study, completed all of the work on this plan and delivered a final draft December 2010.

Along with the surface water portion of the study, a groundwater portion was also completed. The Wyoming State Geological Survey (WSGS) was the lead, with the U.S. Geological Survey (USGS) and the Water Resources Data System (WRDS) providing technical support. The groundwater portion of the report was completed in September of 2009 and a copy can be found at: http://waterplan.state.wy.us/plan/green/green-plan.html

Throughout the water planning process, the Basin Advisory Group (BAG) has played an important role. The BAG is made up of stakeholders from throughout the basin. During this reporting period, the Green River BAG met May 9, 2011 in Rock Springs. At this meeting the BAG heard presentations from Glenn Tootle and Craig Thompson on the Wind River Glaciers. The BAG also received an update from John Shields, State Engineer's Office (SEO), on Colorado River Basin issues.

The update of the Wind/Bighorn plan started in October of 2008 with the work being performed by the consultant group MWH Americas, Inc. As with the Green River Basin Plan II update, a

surface water study as well as a groundwater study was conducted as part of the update. The surface water study was completed in May of 2010 and a copy of the update can be found at: http://waterplan.state.wy.us/plan/bighorn/bighorn-plan.html.

The groundwater project is being led by the WSGS with the USGS and WRDS providing technical support. The team focused on gathering all available data relative to groundwater. They identified aquifers present in the basin and their associated quality and quantity and attempted to determine recharge areas, recharge rates and safe yield. Any information in existing reports, models and other studies pertinent to this study was gathered into a bibliography. All of this information was then synthesized into a report that lists the team's findings along with data gaps and future needs that were also discovered. The final groundwater report is scheduled to be released in January of 2012.

The BAG played an important role in this update as well. During this reporting period, a meeting was held April 27, 2011 in Thermopolis. At this meeting, the BAG received updates on the Bighorn Basin Resource Management Plan (RMP) from the Bureau of Land Management (BLM) as well as an update on the Big Horn and Greybull River Total Maximum Daily Load (TMDL) projects from the Wyoming Department of Environmental Quality. The BAG also received an opportunity to get a first look at the final copy of the Wind/Bighorn River Basin Plan II update.

The update of the Bear River Plan was initiated in the last reporting period and continues into this reporting period. This update is being handled in-house with the water planning team performing the work. The water planning team consists of members of the WWDC, WRDS, and the SEO.

During this last reporting period, the team met monthly to discuss and evaluate different parts of the plan and by doing this, completed the updates of all technical memoranda. The team continues to work on first and second drafts of each of the individual chapters for the final report. The goal is to have the Bear River Basin Plan II update completed by March of 2012.

Just as has been done in the previously mentioned plans, a groundwater study is also being conducted in the Bear River Basin. This report is progressing with all geology mapping completed. The USGS is pulling water quality data and gathering all of that information to include in the report. The anticipated completion of the groundwater portion of the Bear River Basin Plan update is late 2012.

A BAG meeting for the Bear River Basin was held May 10, 2011 in Evanston. At this meeting, the BAG was given a presentation on the Sublette Creek Reservoir project from the Water Development Office as well as a report from the water planning team on their progress with the basin plan update.

During this reporting period, the update of the Snake/Salt Basin Plan was initiated. This update is also being handled in-house, with the water planning team performing the work.

In the months of April and May 2011, the Water Planning team met with the other BAGs around the state. The team met with the Platte River Basin BAG on April 26th in Wheatland, the Snake/Salt BAG on May 11th in Alpine, the Powder/Tongue BAG on May 24th in Sheridan and the Northeast WY BAG on May 25th in Gillette.

At the Platte River BAG meeting, the group discussed the Platte River Basin Plan Groundwater Update. Funding for this study was approved during the 2008 reporting period and it is being conducted just as the other basins; with the Wyoming State Geological Survey as the lead and the U.S. Geological Survey and the Water Resources Data System providing technical support. The WSGS has been developing GIS (Geographic Information System) maps to illustrate the geology and precipitation of the basin as well as the recharge areas. Work is scheduled to be completed on this project in March/April 2012.

At the Snake/Salt BAG, presentations were made by the Forest Service on the Snake River Wild and Scenic designation on the Bridger-Teton National Forest and an update from the water planning team on the Snake/Salt River basin update.

At the Powder/Tongue BAG meeting, the group enjoyed a presentation from the Water Development Office on the Clear Creek Watershed/Storage Study as well as an update from Pete Michael, Attorney General's Office, on the Montana v. Wyoming lawsuit.

At the Northeast WY BAG meeting, a presentation was given by the Thunder Basin Grazing Association on the Thunder Basin Watershed Study and Pete Michael, Attorney General's Office, gave an update on the *Montana v. Wyoming* lawsuit.

Basin Advisory Group meetings will continue to be held in these four basins approximately 2 times a year until it is time to update these river basin plans. When these basins start into the active planning process, meetings will be conducted every other month.

Work on an additional study, the Basin Planning Environmental and Recreation Level I Study, continues to move forward. The purpose of this study is to refine the statewide water planning process to better address environmental and recreational water uses. Each of the basin plans to date have considered environmental and recreational water uses, but data used to define and quantify these uses is hard to find and difficult to interpret.

Harvey Economics of Denver, CO was awarded this project. Completion is scheduled for June 30, 2012.

Water Conservation

Sue Lowry continues to serve as the Western States Water Council's representative to the Bridging the Headgate (BTH) partnership. The partnership has been inactive during this reporting period.

SUPPORT SERVICES DIVISION

By

Martin Zimmerman and Staff

General

The Support Services division has a total of eleven employees and is responsible for the following operations:

- Information Technology and Telecommunications
  - Enterprise Systems - Hardware, Software, Backup, and Business Continuity.
  - Network – Telecommunications, Infrastructure, Firewall, and Security.
  - Help Desk & Support – All user issues and problems, Desktop equipment, software and peripherals.
- Application Programming and Databases
  - Programming - Application development and support.
  - Database – SQL & Microsoft Access programming, reports, and queries.
  - Database management.
  - Web – Website, Web Development, and Web Content.
- Geographic Information Systems
  - GIS – ArcServer, ArcGIS, ArcIMS and ArcSDE application support, development, and spatial data management.
  - GIS training.
- Microfilm & Imaging
  - Scan paper and microfilm records into electronic formats.
  - Maintaining film and appropriate archive procedures.
  - Manage documents systems and storage for scanned documents.
  - Maintain quality of scanned records and appropriate and safe archival.
  - Generate microfilm for state archival.

Information Technology and Telecommunications

The group supported Agency users' for software, hardware, printing and network connectivity. The group participated in the selection, implementation and migration of email services to Google. All Division offices and multi-user field offices are now part of the State network. The group supported and monitored Agency servers and infrastructure for proper operation.

Application Programming and Databases

The group worked with Field staff to add additional stations to the Aquarius database to receive near real-time stream gage data and present the data on the Aquarius Web Data Portal.

Geographic Information Systems

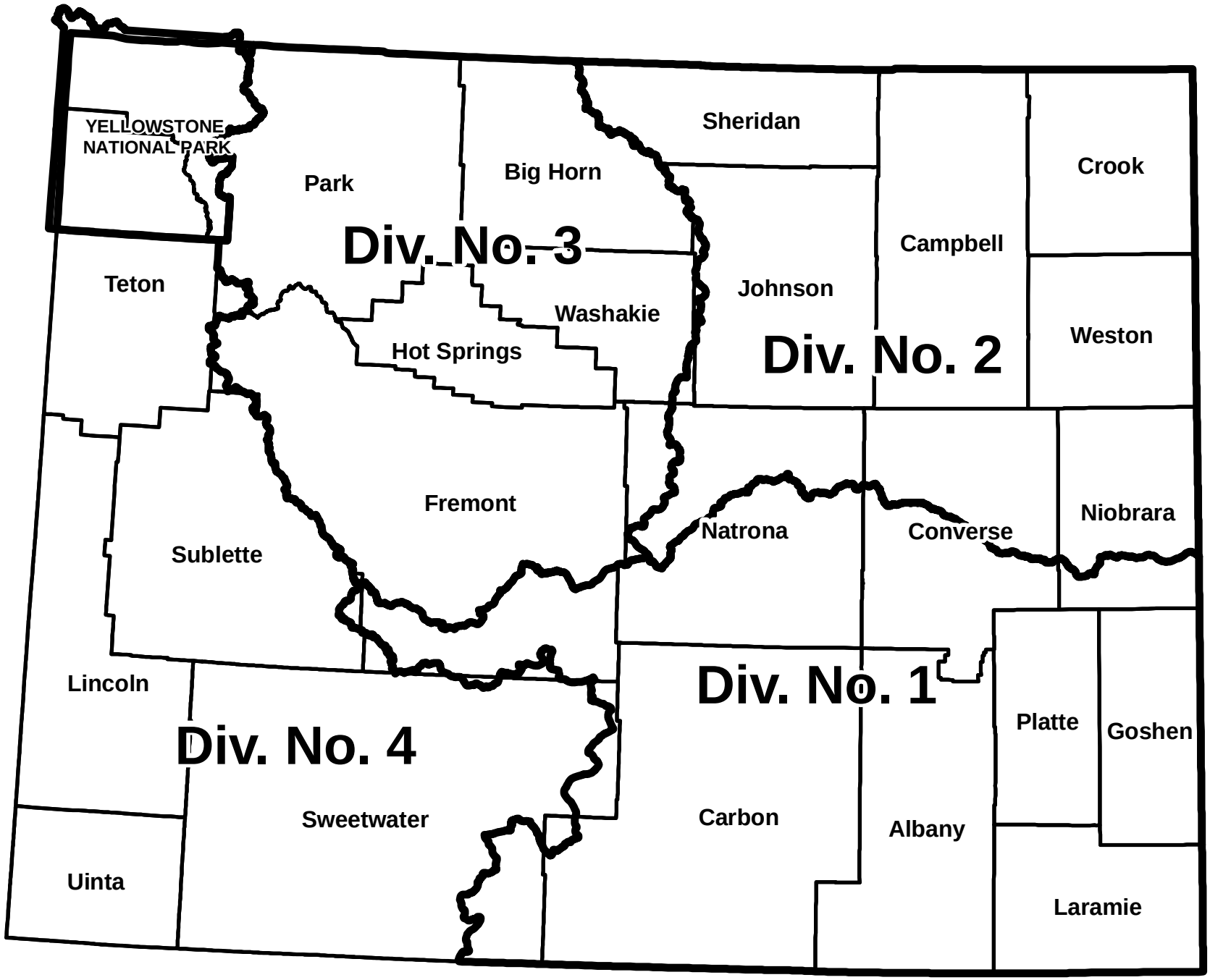
GIS continued to manage geospatial efforts including geospatial software and data inventory, data conversion, and completing advanced geospatial projects. This year, staff has been heavily involved in statewide coordination. One coordination effort is participating on the Technical Advisory Group (TAG) that works jointly with the Governor's GIS Oversight Committee to make GIS-related decisions for the state. Another effort is attending the Cheyenne and Laramie County GIS Cooperative meetings. Both groups provide information sharing on current and future GIS programs, technology and training as well as promote minimizing duplication of effort among participants. The Bear River Technical Advisory Committee continues to seek enhancements to the GIS portion of the depletion effort. Another major project was the groundwater Water Haul map which updated the point of diversions for water hauling and kept track of the lands that had been taken out of production. Smaller projects included updating the Divisions maps, the Safety of Dams map, the Wild & Scenic Areas map, and the surface water Instream flow map. Staff completed online training with ESRI and conducted training for the annual Hydrographer's school.

Microfilm & Imaging

Microfilm and Imaging group continued scanning the Agency's inventory of over 6,000,000 microfilm images along with millions of paper documents. The group supported other divisions in scanning daily incoming applications and correspondence for uploading into ePermit. The group worked with the selected consultant on the QA process of submitted scanned images for the Map Scanning Project.

Summary

This department continues to support, advance and enhance the Agency's use of technology to accomplish it mission.



Wyoming Water Divisions

Report of the Superintendent
Water Division I
by
Randy Tullis, Torrington

This report is a summary of water related activities and trends within Water Division No. 1 for the period October 1, 2010, to September 30, 2011. Water Division I is comprised of the North Platte, South Platte, Niobrara, and Little Snake River drainages of south and eastern Wyoming.

General and Climatic Conditions

I am again pleased to report that Water Year 2011 was a year with abundant water supplies in the vast majority of southeast Wyoming basins. "Abundant" does not give justice to the record high instantaneous or volumetric streamflows in many drainages, but considering the real potential for disastrous flooding had Mother Nature not cooperated, I think most water managers and residents will look back on the water year with reserved relief. This water year is the fourth consecutive year of improved hydrologic conditions and puts the difficult drought of 2000 to 2007 another year in the past.

The water year began with an overall above average storage carryover in the basins' major reservoir facilities, including North Platte River and Laramie River mainstem facilities. It is interesting to note that about 175KAF was evacuated late in WY2010 from the North Platte system just to get down to a total system storage of about 2MAF, something the Bureau of Reclamation (Reclamation) predicted would be manageable with even an above average future snowpack. The WY2011 snowpack started building early and remained above and well above average throughout the winter, spring, and early summer. By late April the upper North Platte and Little Snake River basins were at about 180% of normal snow water equivalents, and the lower North Platte and Laramie Rivers, and Crow Creek basins averaged about 190%. The steady increase of snowpack through the winter and spring, combined with above average storage carryover and winter accruals, clearly exposed the high potential for flooding conditions. As the runoff season progressed, many gaging stations recorded record high instantaneous peak or volumetric seasonal streamflows. It is difficult to determine if the ongoing pine bark beetle infestation of our forests contributed to the record streamflow this year, but it is likely to have been a factor in the increased supplies, with record snowpack and spring/summer temperatures being major factors.

I must again compliment the cooperation between city and county emergency managers, irrigation districts, State (my staff in particular) and Federal agencies that coordinated and managed streamflow bypasses or reservoir releases of record high flows through the runoff season. As early as late February, Reclamation began to evacuate North Platte mainstem storage space, followed by Wheatland Irrigation District and Basin Electric Cooperative on the Laramie River. This proactive action was a major factor in minimizing the eventual flooding damage downstream of those facilities. Folks upstream of major reservoir facilities had to withstand the natural flood conditions, and I thank Governor Mead and the Wyoming Office of Homeland Security for mobilizing the Wyoming National Guard to numerous communities to assist with

bank armament, sandbagging, and infrastructure protection. Even with all the preseason water management and emergency channel armament, it was a blessing that late spring and early summer temperatures were temperate, and in effect, spread out high flows over a longer period at an attenuated stage from what potentially could have occurred with normal temperatures.

Drainage Highlights

All major North Platte River mainstem storage ownerships had filled by May 7 (Kendrick), major irrigation districts and the majority of private ditch demands were satisfied the entire season with natural flows, and over 2MAF ended up bypassing the Stateline. I doubt any previous Division I Superintendent has been able to factually make a similar statement and for that I am thankful. But we must also be cognizant of the fact that due to these above average flows there were several fatalities throughout the basin; South Brush Ck. near Saratoga, Little Laramie River near Centennial, and North Platte near Douglas.

Due to the above average predicted North Platte supply this was clearly a non-allocation year, and in fact there were very few requests for regulation on tributaries. North Platte Project demand was met with natural flow the entire season, and even though Wyoming had replacement water available for WY2010 triangle well usage, none was required. Diversions between Alcova and Guernsey Reservoirs were monitored as in past non-allocation years, and bi-weekly volumetric totals were comparable to past seasons. End of season North Platte ownerships were as follows; North Platte Project at 695KAF (174% of 30 year average), Kendrick at 1.1MAF (127%), and the Glendo Unit at 176KAF (142%). The Pathfinder Modification construction completion was delayed due to record inflow and storage levels, and likely will be substantially complete for storage and accounting in WY2012.

The Big Laramie River and its tributaries produced similar above average flows for an extended season and all mainstem reservoirs filled and refilled as surplus supplies allowed. As a private management decision, diversion to Lake Hattie was ceased after the diversion of about 10KAF, although supply was available to fill the ownership. Wheatland Reservoir Nos. 2 and 3 ended the season with 54.9KAF and 67.3KAF, respectively, both well above average.

Objectives

It is my duty to supervise Division I staff to accomplish the objectives of statutory water appropriation administration and compliance, and assisting the general public with permit, petition, and regulatory options available. It is important that we are all trained and knowledgeable of Wyoming water rights and laws, that we continue to maintain and improve the network of gaging stations and measuring devices that provide support for water management, and that we provide the general public with professional and statutory sound responses to the many water related questions raised. I am pleased to report that Division I staff continues to meet those objectives.

Accomplishments and Challenges

As a member of the Wyoming Board of Control, I hopefully contributed positively to the evaluation of petitions and proofs. Preparation for quarterly Board meetings often includes field inspections with appropriators and staff interviews, hearings when necessary or required, and injury analysis on the complex change in use requests. The following is a status update of two Division I Board controversial decisions this water year; the appeal of Wagonhound/VenJohn petition on the North Platte near Douglas had oral arguments before the Wyoming Supreme Court and awaits their Opinion, and the appeal of the C.C. Davis petition on Horse Creek northwest of Cheyenne was postponed awaiting a potential settlement between the parties, but unfortunately those attempts were unsuccessful and the appeal is back on track for either District Court or certification to the Supreme Court. It is interesting to note that the recent series of above average runoff years has resulted in a reduced Division I Board pending docket, and also a significant reduction in contested petitions requiring formal hearings.

The Niobrara Shale oil and gas development that began in earnest last year has slowed somewhat in Laramie and Goshen Counties, although it appears to remain fairly active in Converse and Platte County areas. Field staff, in cooperation with Groundwater Section and privately contracted staff, have completed numerous inspections to ensure compliance with the documentation of the temporary use of water. It is difficult to predict what conditions would increase the activity in the southeast part of Wyoming, but the State Engineer has instituted numerous safe-guards to support the oil and gas development, while continuing to protect supplies of existing water users.

The use of the new Acoustic Doppler Current Profiler greatly improved our ability to safely and accurately collect flow data, particularly at high streamflows or cross-sections not normally attempted. This new technology has allowed us to improve rating curves and corresponding records reduction for publication. Many Division I staff have been trained in its use and it will likely be a useful tool during each annual runoff.

Summary

The challenges of water management and water rights administration seem to have many year to year similarities, yet Mother Nature and new landowners can always keep things interesting. It is without exception that I am proud to report that Division I staff met those challenges with professional diplomacy and often gifted patience, and for that I thank them. I would also like to express my thanks and appreciation of State Engineer Patrick Tyrrell and other Board of Control members for their support and guidance during a year of record high flows and the statewide successes of water management and administration of a valuable renewable resource.

REPORT OF THE SUPERINTENDENT
WATER DIVISION II
By
CARMINE LoGUIDICE, SHERIDAN, WYOMING

The following annual report submitted for Water Division II is a summary of the individual water administrators and reservoir inspectors within the division. On-line reporting of data by the N.R.C.S. and the Bureau of Reclamation was also used in this report.

GENERAL CONDITIONS

The 2011 water year began with a 34% reservoir storage capacity carryover in the Tongue River drainage, 83% in the Powder River drainage including Lake DeSmet (53% excluding Lake DeSmet) and 60% of the total storage at Keyhole Reservoir in the Belle Fourche River drainage.

With the coming of winter and carrying on through to early spring, this was as close to an average winter as you could expect in northeast Wyoming. Temperatures and precipitation bounced around 100% of normal all winter long and by April, we were in great shape for a good water year and irrigation season. As of April 1, 2011, the snowpack or snow water equivalent (SWE) in all of Division II's major drainages was at or above average. The Tongue River drainage average was 104% of normal with the Upper Tongue at 107% and the Goose Creek drainage being 101% of normal. The entire Powder River drainage had an average SWE of 115% with its three major sub-basins being as follows: Clear Creek 111%, Crazy Woman Creek 114%, and the Upper Powder at 118% of normal. The Belle Fourche River drainage off to the east faired a little better and had an average SWE of 136%. Additionally, the average year-to-date precipitation was 108% of normal in the combined Powder/Tongue drainages and 171% in the Belle Fourche River basin.

With the advent of May, precipitation in the entire northeast corner of the state steadily picked up and temperatures stayed at or below normal. The SWE in all the combined basins increased to 148% of average with a departure from average in precipitation hitting a +48% in the Powder/Tongue basins and a +35% in the Belle Fourche and Cheyenne River basins. Because of the increased moisture and relatively low temperatures, very little irrigation took place in May. As we rolled into June the trend continued and the SWE for all the basins combined hit an incredible 451% of average. Concerns about the possibility of flooding should it warm up too quickly were being expressed statewide.

As of June 1st, the SWE in the Upper Tongue River basin reached 452% and 569% of normal in the Goose Creek drainage. The Powder River sub-basins were as follows: Clear Creek 444%, Crazy Woman Creek 991%, and the Upper Powder 865% of normal. The Belle Fourche and Cheyenne River basins were completely melted out by this time, but the average year-to-date precipitation had risen to 164%. Most major storage facilities were carefully filled in an attempt to avoid spilling while this incredible amount of snow still sat above them. Luckily it never got hot early enough to break loose with major flood flows. Lake DeSmet storage peaked at approximately 210,400 A.F. or 90% of total capacity and Keyhole Reservoir reached 174,842 A.F. or nearly 93% of total capacity.

The peak flows in the Powder/Tongue basins were very inconsistent in timing due to cold mountain temperatures, rain-influenced peaking, and storage patterns of the mountain reservoirs. Piney Creek peaked on May 29th, Wolf and Little Goose Creeks on June 9th and Big Goose and Clear Creeks on June 30th. Due to the high SWE's in the basins and the cool temperatures, the peak flows were nowhere of record proportions and high water lasted for a prolonged period of time, well into the end of July. The Belle Fourche River basin, due to its lower elevation headwaters, was a different story as its main stem & tributaries melted out rapidly in mid-May and the higher flows continued into mid-June. The Belle Fourche River peaked on May 23rd at 4,800 cfs and the Town of Hulett, Wyoming, had to be partially evacuated. Many dams, large and small, and roads and bridges in Crook County were breached or destroyed. Based off of record computation by Division II Hydrographers, stream flows as a percentage of historical average throughout the period of record for 2011 were as follows: Big Goose Creek 175%, Little Goose Creek 144%, Wolf Creek 178%, Piney Creek 197%, Clear Creek 200%, Rock Creek 170%, and the Belle Fourche River 191%.

With all the late spring and early summer precipitation, the streams and rivers in Division II supplied an ample water supply to all users well into late July. Into August reservoir releases coincided with the scattered calls for regulation with the earliest call coming on July 28th on Piney Creek. The main stem of the Tongue River, Powder River or Belle Fourche River never did go into regulation. There were no releases for either Wyoming or South Dakota irrigators from Keyhole Reservoir in 2011.

Due to the above average water year, reservoir orders were down and operators began releasing stored water above and beyond the orders in early August. By the end of 2011 water year, releases were terminated and storage began for the 2012 water year. Carryover totals for the Tongue River basin averaged 40% of total storage and 83% for the Powder River basin including Lake DeSmet (52% excluding Lake DeSmet). Keyhole Reservoir had a carryover for 2012 of 172,866 A.F. of total storage. This results in a 92% carryover as compared to 60% a year earlier. It is nice to see this large storage facility gaining ground which is heavily used by recreationists in the northeast corner of Wyoming.

Our coal bed natural gas (CBNG) reservoir inspection program continued during the 2011 water year and 342 reservoirs were inspected. Of those, 198 were approved. Of the 144 reservoirs not approved, 142 of them will require further permitting or construction work to bring them into compliance, and the remaining 2 were not constructed. We will continue the program into the 2012 water year with our one CBNG reservoir inspector with additional help from our hydrographers as their time allows.

In addition to the CBNG reservoirs, an additional 581 reservoir permits were inspected by Division II hydrographers and the dam inspector. Of those, 433 were approved and 148 were not approved. Of those 148 reservoirs, 11 were unpermitted and the remainder required some further permitting or construction modifications.

The Safety of Dams program involves the inspection every five years of reservoirs which exceed 20 feet in fill height or 50 A.F. in capacity. Of the 754 dams that fall into this program in Division II, 133 were scheduled for inspection in the 2011 calendar year. One hundred forty-six (146) SOD reservoirs were inspected this water year, including 48 from 2010's backlog.

This past year 73 Surface Water Final Proof of Appropriations were taken and submitted to the Board of Control for adjudication of the water rights, along with the endorsement of 163 stock reservoir inspections not to be adjudicated, but included in the Tab Book. In addition, 25 petitions reflecting various changes to water rights were acted upon. On-site inspections were performed and proof of ownership, signatures and fees were collected for proofs. In the case of petitions, sometimes it is necessary to hold a public hearing. No public hearings were held although 2 were scheduled, but ultimately cancelled as the protests were dropped.

SUMMARY

The 2011 water year was a blessing to Wyoming and all water users in many regards. Storage facilities, both on channel and prairie stock reservoirs, had plenty of water and time to fill. Irrigators, stock growers and municipalities in Division II had plenty of water and it wasn't until very late summer that shortages in some drainages appeared. Because of the cold spring and late runoff, there were threats of major flooding in the lowlands, but outside of the Belle Fourche River, the slow and sustained snow melt caused few problems. There was a major rain event in mid-April in the Sheridan area that put the town on alert, but aside from some minor property and road damages, the biggest issue was the breaching of some dams. When the warm weather finally came in mid-June and the skies cleared up, the forage crops really took off and production was excellent. Once again CBM development was stagnant in northeast Wyoming and we did not see any significant increase in dam building nor much of a change in industry associated water discharges. As in any summer, the grasshoppers came and went, but there was plenty of feed for them too in most areas. The staff in Division II did not change in 2011 from 2010 and a listing of the staff is attached to this report.

Field Personnel – Water Division Two

District	Title	Name	Email Address	Office Address
	Superintendent	Carmine LoGuidice	carmine.loguidice@wyo.gov	1833 South Sheridan Ave., Sheridan, WY 82801
	Secretary	Deb Reed	deb.reed@wyo.gov	1833 South Sheridan Ave., Sheridan, WY 82801
4,5	Assistant Superintendent	Bill Knapp	bill.knapp@wyo.gov	1833 South Sheridan Ave., Sheridan, WY 82801
1,7,10	Hydrographer/Commissioner	Kody Steinbrecher	kody.steinbrecher@wyo.gov	113 South 21st Street, Sundance, WY 82729
1,8	Hydrographer/Commissioner	Roger Ralph	roger.ralph@wyo.gov	2020 Fairgrounds Rd., Suite 104, Casper, WY 82604
2,3,7,8, 9,10,11	Lead Hydrographer/Commissioner	Dave Pelloux	dave.pelloux@wyo.gov	1833 South Sheridan Ave., Sheridan, WY 82801
8,9,10, 11	Hydrographer/Commissioner	David Schroeder	david.schroeder1@wyo.gov	1833 South Sheridan Ave., Sheridan, WY 82801
5,6	Hydrographer/Commissioner	Pat Boyd	pat.boyd@wyo.gov	1833 South Sheridan Ave., Sheridan, WY 82801
8	Water Commissioner	Bob Furnival	bob.furnival@wyo.gov	P.O. Box 3, Kaycee, WY 82639
	CBM Reservoir Inspector	Kim French	kim.french@wyo.gov	1833 South Sheridan Ave., Sheridan, WY 82801

REPORT OF THE SUPERINTENDENT

WATER DIVISION III

OCTOBER 1, 2010 –SEPTEMBER 30, 2011

LOREN SMITH
RIVERTON, WY

This report will summarize Water Year 2011 for the Wind River / Big Horn River system as well as that of the Clark's Fork Drainage in North Central Wyoming. Water Division III is made up of thirteen water districts served by a staff of seven hydrographer-commissioners, one field adjudication inspector, one lead hydrographer, one assistant-superintendent and one division secretary.

The 2011 water year began with fairly low soil moisture profiles especially evident throughout the range land areas. Early in November the snow pack began to build and it did so at a very non-typical normal rate. This normal accumulation rate began to give way to a higher than normal precipitation in mid-March and by the end of May we were looking at an astounding average of 295% of the thirty year normal snowpack. Major concerns of a compressed runoff were setting in about this time as temperatures across the Wind River and Big Horn River basin were 2.5 to 3.0 degrees below normal for the May-June timeframe and the enormous snow pack continued to build well into June and runoff was delayed by nearly a month. During normal years the snow pack peaks in mid-April and by the third week of May runoff has started to pick up across the basin.

Reservoir carry over storage going into WY2011 was in excellent shape after the wet 2010 water year. Some of the smaller high mountain reservoirs like Christina Lake Reservoir on Little Popo Agie, Worthen Meadows Reservoir on the Middle Fork Popo Agie and Shoshone Lake Reservoir on the North Fork of the Popo Agie were never drafted during 2010 and requests to deliver storage on those drainages never came in during the that season, leaving these facilities carrying over nearly full volumes. Once the higher flows of June and early July subsided there was a need to pull some storage from the larger reservoirs in the division. Buffalo Bill, Boysen and the Greybull River reservoirs all were utilized to make up additional supply to the irrigators down these drainages during the dry period that developed from July to September. The expanded table below indicates the change in storage during the last year and now includes all non-stock use reservoirs in the water division with a permitted capacity greater than 1000 acre-feet. It is evident from the chart that all reservoirs remain in great shape heading into next year.

District	Reservoir or Lake Name	Capacity	Usable Contents on Sept. 30, 2011	% Capacity Sept. 30, 2011	Usable Contents on Sept. 30, 2010	% Capacity Sept. 30, 2010	Change in Contents (AF)
7	Adelaide Reservoir	4,764	2,275	48%	980	21%	1,295
5	Anchor Reservoir	8,795	396	4%	339	4%	57
15	Bighorn Lake	1,312,000	1,025,004	78%	959,907	73%	65,097
3	Boysen Reservoir	757,851	691,172	91%	639,049	84%	52,123
9	Buffalo Bill Reservoir	644,540	482,678	75%	485,528	75%	-2,850
3	Bull Lake	151,951	92,967	61%	65,846	43%	27,121
8	Greybull Valley Reservoir	33,169	9,394	28%	4,158	13%	5,236
3	Pilot Butte Reservoir	34,600	23,537	68%	17,428	50%	6,109
16	Upper Sunshine Reservoir	52,987	51,176	97%	52,339	99%	-1,163
16	Lower Sunshine Reservoir	58,748	28,571	49%	25,058	43%	3,513
1	Christina Reservoir	3,860	3,800	98%	3,500	91%	300
16	Corral Reservoir	1,027	640	62%	576	56%	64
9	Diamond Creek Dike Res.	18,378	473	3%	445	2%	28
1	Enterprise Reservoir	1,698	40	2%	42	2%	-2

8	Fairview Extension Res.	1,411	1,400	99%	1400	99%	0
8	Harrington Reservoir	1,202	800	67%	600	50%	200
3	Lake Cameahwait Res.	6,683	6,683	100%	6683	100%	0
5	Lake Creek Reservoir	1,373	1,370	100%	1370	100%	0
9	Newton Reservoir	4,525	250	6%	2000	44%	-1,750
9	Perkins and Kinney Res.	1,202	1,040	87%	1150	96%	-110
9	Sage Creek Reservoir	2,785	2,580	93%	2683	96%	-103
7	Shell Reservoir	1,949	75	4%	75	4%	0
1	Shoshone Lake Reservoir	9,740	70	1%	140	1%	-70
3	Teapot Reservoir	1,578	0	0%	0	0%	0
6	Ten Sleep Reservoir	3,509	1,716	49%	3217	92%	-1,501
9	Wiley Reservoir	1,020	632	62%	1020	100%	-388
1	Worthen Meadow Res.	1,504	1,500	100%	397.5	26%	1,103

Mother Nature was kind to the people of the Wind and Big Horn River basins as temperatures stayed cool through the month of June and actually never did get too hot this whole year. These cool temperatures allowed the snow pack to come off the mountains at a manageable rate for the most part. In 2010 the Wind River basin experienced heavy flooding along the Popo Agie and Little Wind River drainages while in 2011 the bulk of the high snowpack was held in the drainages of the Big Wind River. Peak flows, though high in the southern drainages were much lower than the previous year. The Big Wind River did peak out at nearly 18,000 cfs below Riverton on July 2 but things could have been much higher if warm temperatures had ever showed up. Elsewhere across the division high flows were managed with near perfection as the Bureau of Reclamation released water early and at substantial levels from Boysen and Buffalo Bill Reservoirs to make room for the high inflows of June and July. By doing so, the peak flows through Thermopolis were held in the range of 6500 cfs and around 8000 cfs at Lovell preventing any significant flooding in those areas. The high snow pack of west-slope of the Big Horn Mountains contributed to wide spread minor flooding while many of the Big Horn River tributary streams peaked at or near record levels this year. The management of flows on the South Fork Owl Creek by use of Anchor dam played a significant role in diminished flooding concerns along the entire length of Owl Creek.

The cool and wet spring and early summer had countless effects on the crop production this past year. With such a late start to the planting season it was difficult for many farmers to get their crops in the ground and many of those that did had their crops damaged by late frosts or washed out. There was very limited early irrigation in the Big Horn basin as first cutting alfalfa generally was finished without any watering. The drier and warmer conditions that prevailed after July 4th were a welcome sight. The barley quality and tonnage were down somewhat from the previous year due to the cool conditions. For those who were able to get their beans planted early enough the production was reportedly quite high. Good results were coming in with regards to corn and sugar beet yields with the corn silage and ear corn producing quite well. The sugar content of the beets picked up with the cooler temps of later September and Western Sugar Cooperative reported record production due in part to a late season storm which dropped between 2 and 3 inches of moisture throughout the basin. Sugar beet tonnage for 2011 was 28.8 tons per acres, exceeding the 25.74 tons per acre realized in 2010. The sugar content was also in good shape with reports of an average of about 17.22 percent down only slightly from 2010's average of 17.57 percent.

Even with the high snow pack and prolonged late runoff we did experience some regulation in the basin this year. The normal early season calls that come in annually for water prior to the initiation of runoff came in as expected. Gooseberry Creek, Bennett Creek and the Greybull River all generally call for early water prior to runoff. These calls typically go off during the runoff period and then new calls are placed during the recession with the exception of Bennett Creek which normally provides enough flows to get through the end of the year. We did have calls placed on Medicine Lodge Creek and Paint Rock Creek in district 12 that were denied as the basin received 2 to 3 inches of rainfall the between the first phone call and when the regulation could be instituted negating the need for administrative action.

Date of Call	District	Stream System	Calling Facility	Calling Party	Action
10/1/2010	13	Gooseberry Creek	Holland	Mark Nogle	Approved
4/25/2011	8	Greybull River	Farmers Canal	Carter Piotrowski	Approved
5/3/2011	10	Bennett Creek	Bennett Creek	Nate Hoffert	Approved
5/5/2011	8	Greybull River	Wood & Burnett	Brett Bullinger	Approved
7/26/2011	8	Greybull River	Farmers Canal	Carter Piotrowski	Approved
8/1/2011	13	Gooseberry Creek	Holland	Marc Nogle	Approved
8/4/2011	5	Owl Creek	Kirby	Matt Brown	Approved
8/16/2011	1	Big or Middle Fork Popo Agie River	Cemetery Ditch	Joe Croft	Approved
8/23/2011	7	South Beaver Creek	London	John Anderson	Approved
9/8/2011	12	Medicine Lodge Creek	George & Bayne	Martin Mercer	Denied
9/8/2011	12	Paint Rock Creek	Anita Supplemental	Martin Mercer	Denied

Accomplishments:

The normal Board of Control duties that are completed in accordance with statute and rule take a large amount of time throughout each water year whether it is wet or not. In addition to preparing for and attending the four quarterly Board of Control meetings during the past year where 26 new surface water petitions and 23 new groundwater petitions from this division were presented to the Board during our quarterly meetings. A few public hearings were held either in regards to contested petitions or protested proofs during the water year. Also, Division III staff has worked diligently over the past year to complete proof inspections across the division. I presented 165 surface water permits for adjudication, 44 ground water permits were adjudicated and 30 stock reservoirs were presented for recordation within the terms of the permit by the Board. Surface water petition numbers are down somewhat from the drought years and this trend is expected to continue through these wet years. With additional available water there is less regulation, with less regulation there is less intense scrutiny of the on-the- ground irrigation practices versus the water rights records thus fewer instances of finding water rights that don't match the actual situation on the ground. As dry years come back around it is expected that the petition numbers will again rebound.

In the last two reports the funding problems surrounding important administrative gages on the reservation was highlighted. In 2010 an MOU was signed with the BIA to fund the purchase of equipment and provided access to four critical canal gages from the Big Wind River. During the winter of 2010-2011 that equipment finally arrived and it was installed prior to the canals coming on in the spring of this year. All four gages ran flawlessly and the records will be reduced and data published in the annual Hydrographers Report and supplied to the BIA and Tribal offices.

The Montana v. Wyoming lawsuit before the U.S. Supreme Court continues into its fourth year. So far the parties have kept this case on the other side of the mountain in the Tongue and Powder River basins thus, the case has not taken much time or effort on the part of this superintendent and the field staff of division III. As WY2011 came to a close it appeared that the case would be headed toward the discovery phase which would be expected to take up most of the water year to complete as the matter moves forward.

The Big Horn Lake Reservoir Long Term Issues Group continues to work toward fine tuning guidelines for operation of the Yellowtail dam in an effort to better recognize the interests involved and satisfy them at a higher, more even level than had been accomplished in the past. Quarterly meetings and many conference calls were attended this past year with calls coming daily to weekly during the runoff period to an effort to stay abreast of the ever changing conditions in this basin. A record April – July inflow volume to Big Horn Lake was realized this year with nearly 2.57 million acre-feet (223% of normal) of water flowing into the reservoir during the forecast period. There was an estimated 717,800 acre-feet (582% or normal) of unregulated inflow gains to the system below Boysen and Buffalo Bill Reservoirs to be managed as well. The rule curves that are

the end result of these meetings performed well this year, managing outflows from the dam in such a way that downstream flooding was greatly minimized even with the tremendous rains of May below the dam in Montana.

After four years of work on the NRCS water rights verification forms there appears to be no lack of projects being proposed for funding through the NRCS programs. The forms are used to verify that all lands under a cost share project being considered for funding have properly recorded water rights so as to not leave us with conflicts or unpermitted irrigation. Typically the reviews each take a lot of staff time to research and complete, but they do serve well to advise appropriators where the deficiencies are prior to them becoming a problem. The field staff of Division III continued to work on staying current with dam safety inspections throughout the year and all inspections that were due by Division 3 staff were completed this past year. The Snow Survey program this year found us a bit shorthanded in Division 3. With the departure of Chance Fulk in September 2010, that left Ryan Mikesell and me as the only trained surveyors available. It became further apparent as the time for surveys approached that I was actually the only fully qualified surveyor available and as such I had to juggle my schedule so that I could accompany the NRCS staff on the monthly surveys in the Wind River Mountains. Having not been on actual survey in nearly 9 years it didn't take long to remember how much I truly enjoy being out there doing the hands on work and not riding the desk chair in the office.

Funding of a second round of stream gage work became available in July 2010 and carried fully through this water year. This funding furnished gaging equipment for 25 new or upgraded gaging stations within Division 3. By the end of the water year all but two gages had been constructed and placed into operation. Significant flood damage occurred at many of our gaging sites during the runoff period and all of that damage was repaired through the hard work of the division 3 field staff during the fall of 2011. These gages are proving to be a tremendous asset in answering the frequent calls for information and for use by the hydrographers as they administer the water rights of these drainages.

Technologic advances have been a time consuming venture this water year. The importance of our IT staff was very evident throughout the fall and winter months as we struggled to work through problems built into a new release of the Aquarius records reduction software. After months of frustration the vendor finally listened to us and they made the necessary adjustments resolving these issues. Once, repaired the software did work well and the records work was completed on time. The next release of the software is slated for early 2012 and time has been spent working with the company up front to prevent a replay of this magnitude as well as readying our data for conversion to the new database structure. This new structure is what is needed to make our data presentable on the web in the form of flow rates rather than our current form of just reporting stage values.

Once again I find myself writing this report and continuing to look forward to the end of the General Adjudication. One of these years I hope to be able to say it is over, but not this year. The Farmers Canal recommendation was upheld by the Court leaving three permit files needing attention. A field inspection and recommendation for adjudication has been submitted with regards to the two reinstated permits in the Shell Creek drainage and those two remain in the Court process under appeal. Permit 1649E, extension of the Dutch Flat Ditch near Lander was agreed to in the field by all parties in 2009 but the file has yet to make it completely through the process.

Area Highlights:

The Lander area was given a bit of a reprieve this year after all of the flooding action during 2010. Stream flows were high but not too high. Few problems were present and only the Middle Fork of the Popo Agie required regulation late in the year. Christina Lake Reservoir storage was not called down again in 2011 and reports were that the gates weren't even opened this year. Worthen Meadows Reservoir storage was not needed to supplement the flows of Middle Fork even during regulation and the remaining storage was moved over to Enterprise Reservoir at the end of the season. This is the normal practice as this allows Enterprise to fill earlier in the year making more of the runoff available for Worthen to store next season. With the abundance of water and few problems needing attention, additional time was freed up for Hydrographer Myron Smalley to spend in the training of Ryan Bjerke the new district 3 hydrographer.

District 3 had a new hydrographer this year, Mr. Ryan Bjerke was hired at the first of the year and has become a reliable hydrographer. Much time was spent with Ryan learning all of the ins and outs of stream gaging, river accounting, water laws, policies and practices. This continues to be the most demanding of positions in this division and the learning curve is much longer than any other hydrographer position. Ryan has absorbed an awful lot in his first year but there remains a lot of training yet to be invested before he can feel comfortable in everything he has coming at him.

The Greybull River Irrigation District continues their exploration of the feasibility of the district pursuing funding for installation of hydropower on the Sunshine Reservoirs. We have been called upon to help supply diversion data, water rights information and generally being available to the district board and their membership to answer questions regarding administration and how hydropower might impact anyone at any point on the river. We have completed the installation of reservoir level gages on the two Sunshine Reservoirs as well as the Greybull Valley Reservoir to help in the data collection efforts. The District is also in the process of rebuilding the intake structure at the Sunshine Canal west of Meeteetse which should greatly help control the filling of these two upper reservoirs.

Mr. Phillip Beamer experienced some significant flooding in the Nowood and Ten Sleep drainages and with the installation of five new gaging stations on these drainages he was kept hopping quite hard throughout the entire year. Medicine Lodge and Paint Rock were getting low in early September but some timely heavy rains negated the need for regulation. Phil's time this year was spent primarily learning the operation of the gaging equipment, dealing with mis-described unrecorded changes in the Ten Sleep area and further familiarization with the diversions and people of his two districts.

Four good water years in a row now for the Shoshone River basin! With all of the available water taking care of many of the normal problems and calls we receive, the Assistant-Superintendent and the lead-hydrographer in this basin were able to work on proof inspections. These are the required inspections necessary as part of the adjudication process. Landis Webber completed and submitted close to 70 proofs of appropriation and/or construction this year while David Deutz completed another 58 proofs. This work takes considerable time and detailed work to complete each proof

The Shell Creek drainage was rather quiet this year except for during runoff, with the record peak daily mean of 3190 cfs occurring on June 30th. This flow surpassed the previous peak daily mean of 3020 cfs recorded on June 24, 1945. The peak instantaneous discharge we recorded this year occurred just after midnight on the 30th of June at 4865 cfs! Regulation was requested on the South Beaver Creek drainage in late August lasting through the month of September. Gages were installed on Shell and Adelaide Reservoirs and their outlets in late September and these should prove to be important gages in the operation of and regulation of these drainages. Just the time savings alone of spending a couple hours one way to access these reservoirs should prove beneficial.

Summary:

The timing of this report finds us in the middle of budget planning, submission and defense before the legislature. It is sincerely hoped that those in the high backed chairs are cognizant of the fine work of the agency staff and that we aren't subjected to substantial cuts to our operating budget. We have always worked diligently to do more with less or at least with the same, as we had before but it gets tougher and tougher to meet the ever increasing demands of our public with limited resources. WY2011 has been an interesting year, as they all are, but the high snowpack, high but not too high runoff and rather good crop production were wonderful. We accomplished a great deal of good work this past year and look forward the hard work and challenges the future will bring. Division III's field staff are second to none and they prove that with professionalism, quality workmanship and effective customer service every day.

REPORT OF THE SUPERINTENDENT

WATER DIVISION IV

Jade Henderson, Cokeville

This annual report is a summary of Water Year 2011 as experienced in the drainages of Wyoming's Green, Snake, and Bear Rivers located west of the Continental Divide that includes its westerly Red Desert Basin. It is written generally from the perspective of field administration of water rights. More detailed accounts of respective local areas can be obtained from the individual summaries published in the Hydrographers' Annual Report. (The Little Snake drainage, although part of the Green [Colorado River] basin, is administered under Water Division I which includes the easterly Separation / Soldier / Dry Lakes portion of the Great Divide Basin.) Separate reports include more complete information on interstate streams, Board of Control, Safety of Dams, and the co-operative programs of streamgaging and snow surveys.

General Conditions

We are pleased to have hired Courtney Skinner part-time, on-call from his home after we closed the Pinedale office. Our office in Big Piney was moved to a different building.

The Board's new rules on subdivision Authorizations for Detachment of Water Rights (confirming even irrigation districts' ability to move active water rights) were generally approved after the new Governor's attendance of a public discussion at one of our quarterly Board meetings. Attempts by this Superintendent and his staff to update & streamline the proof process were resisted by the rest of the Board, particularly for simplified contact on getting old Stock Reservoirs into e-Permit that had been long overlooked from having proof prepared. Alternatives to statutory change on regular proofs have been suggested to the Surface Water Section processes for consideration.

Significant restructuring of our proof inventory in Division IV is underway to track the huge backlog through e-Permit for the Strategic Plan. Despite the general respite from extra or early stream regulation this plentiful-water year, other demands moved to the forefront like flooding threats, telemetry installations, and petition & proof inspections. Aside from extra hours of the Superintendent, the work load of the helpful field Assistant Superintendent is too large, although his attention is shifting to other backlogs as overtime-paid Lead Hydrographers and their staffs are picking up more technical training & responsibility on increased telemetry.

After 3 years of "El-Niño" reversal from the severe drought of 2000-2007, this fourth year of delayed runoff was compounded by massive "La-Niña" snowpack. Slow spring warming diminished the severe flooding threats, from anticipated record streamflow peaks, to relatively minor occurrences including some headgate and measuring device washouts. Reservoirs filled early because of high carryover; and prolonged natural flow kept them from being drafted heavily as streamflow levels in some cases were 6 or 7 times what we normally see when approaching the haying season.

Green River

Upgrades and new installations for telemetry's real-time data on remote reservoirs & flows are progressing, with the intensive expansion into the Green (Colorado) River drainage cutting into time available for proofs by the assisting staff. Additions of two-way radio "automation" (remote control adjustments) at headgates have increased interest from appropriators; but they were frustrated that our agency hadn't yet released our Green River "telemetry" data from our SEO website, so we extended our StoneFly/BuRec contract website. Both automation and telemetry helped to expand installations of accurate and timesaving measuring devices into the upper Green area (except for new feedback now from a troublesome user on South Piney Creek).

Utah remains unable to find staff time for delineating the remaining sole-supply acreages of their own over-filings in the rest of the compacted Henry's Fork drainage. They are also reluctant to respond to our inquiries of avoiding the adjudication of newer Wyoming proofs over duplicate or overlapping Utah water rights. The Utah State Engineer's office has been supportive of telemetry on real-time flow data in this shared drainage under a joint water commissioner who is to regulate from a yet-to-be approved interstate priority schedule that does not double-list. The majority of the Board of Control did not find allowance around the inundation-abandonment statute for moving some of Wyoming's 1899 Peoples Canal water rights from beneath the high water line of Utah's 1958 Flaming Gorge Reservoir. Some of those lands are irrigated when the Reservoir is drawn-down, with other lands irrigated in lieu thereof since construction.

Once again, the misguided Berman legal action against us in Utah did not attempt this year to get Wyoming to shepherd their release of out-of-priority second-fill storage in Utah's China Lake Reservoir to their Wyoming diversions. At this writing after the Water Year ended, we have finally won a decision on his appeal to the Utah Supreme Court, upholding their district court's refusal to impose itself inside Wyoming and rejecting his argument that his Utah rights were not subject to Wyoming senior priorities (from which "belief" even the lower court had retreated). The attempt to construe his straddling of the state line as being exempt from regulation by either state has essentially announced that he is now subject to both; and that Utah "does not remotely believe it is in a position to tell Wyoming water officials [including 'nonparties,' 'supervisor and subordinates'] how to do their job, or interpret Wyoming law," that their courts had "no ability or jurisdiction to determine finally the interplay of Wyoming and Utah water rights."

The effort by Eden Valley Irrigation & Drainage District and its members, to amend irrigated lands from squares to existing circles, has morphed into new pivot-sprinkler installations that may be short on water rights or historical use. They and the Bureau of Reclamation as well as NRCS were written about halting new installations, yard hookups, and wetland mitigation ponds unless properly water-righted until BuRec has inventoried a balance of available project acres.

District 10 staff helped implement gradual storage evacuation and restriction in McNinch No. 1 Reservoir near Big Piney for Safety of Dams. The expensive new "ramp" measuring flume installed in Lee Ditch from Pine Creek is submerged and needs to be corrected. Submergence of the much larger flume at the head of Green River Supply Canal was overcome by canal cleaning and removal of impediments down-ditch. While marketing the Green River Guest Ranch north

or Cora, the realtor removed our tags from unpermitted points of use on Middle Butte Pipeline which have been shut-off upon complaint of co-owner Buffalo Head Springs Subdivision.

Snake River

Disturbing new legal expansion of Federal Government jurisdiction over water was suggested after a consultant in Teton County sought our Hydrographer's assistance in mapping the course of a channel shared by natural springflow and a private ditch. The consultant's presentation to the Teton County Planning Department then advocated the latest re-interpretive guidance from EPA and Army Corps of Engineers to classify both the minor tributary and the private ditch as "navigable waters of the United States." The draft internal guidance from these federal agencies, based on archaic conflicting opinions from the non-majority ruling of the U.S. Supreme Court in the combined Rapanos/Carabel cases, was assailed by our Governor joining with 16 other states. Perhaps state Attorneys General should consider issuing an opinion or challenge if this draft becomes final in drastically expanding federal jurisdiction on waterways & wetlands.

Though Teton Creek again fell below the 90-cfs interstate Roxana trigger, Wyoming demands were less than our full half, so no curtailment was imposed. Proof-taking, diversion data, and reconnaissance for proper permitting & petitions are all on the increase in District 16.

Some parties in Central Bedford Sprinkler [Pipe Line lateral] Company wanted us to resolve their internal civil-law dispute over private delivery lines. Private disputes sometimes attempt our involvement with the new penalty statute that problematically requires a Notice of Violation from us, even for someone to prosecute civil law violations where we don't have authority. After investigation from 3 top engineers out of our central office in Cheyenne, parties involved in potential flooding from the Kirkbride Ditch were told they needed headgate installation and diking rather than blaming the new lower-elevation Boxes Reservoir permit.

Bear River

Again this summer, interstate regulation was imposed in neither of this compacted river's Central or Upper Divisions. Downstream Idaho (with PacifiCorp) extended installation of measuring devices and telemetry to a significant number of its diversions. After further questioning USF&W's (Cokeville Meadows Wildlife Refuge) rehabilitation projects to assure compliance with our joint Memorandum of Understanding and no unpermitted water-right expansion for reservoir impoundments, a letter was sent instructing additional water right filings. We are close to wrapping-up WG&F Instream Flow proofing in the Bear River drainage without funding for prohibitive access during the difficult winter & spring periods.

Allowing a Wyoming shareholder to take his delivery of Woodruff Narrows Reservoir water across Pixley into the Central Division has been accepted by both the Reservoir Company and the interstate Bear River Commission. But a separate suggestion to market a changed use or the interstate allocation to another state has not, and would also require approval by the Wyoming State Board of Control. Monitoring both natural flow and deliveries from Woodruff Narrows Reservoir, to potentially count towards Utah's 3 acre-foot per-acre duty from all sources, results

in higher carryover. The Reservoir Company implemented an unprecedented drawdown in the spring to make space for anticipated flood runoff from the Uinta Mountains.

Instead of formal interstate Compact regulation, unofficial general co-operation with Compact allocations (sometimes imposing State priorities) allows more flexibility in the Upper Division. Wyoming & Utah Sections are thus able to trade their respective surpluses with the timing of actual demands without having late storage halted by official interstate regulation for irrigation. Since Bear Lake rose above the base line 5911' elevation again this year in time to still allow upstream junior storage to fill, even Amended Compact shareholder accounts in Sulphur Creek Reservoir were made whole without transferring allocations from carryover and un-built storage. The remote Whitney Reservoir Company's outflow sensor needs repair to show the amount of their release without the long trip into the Uintas by the Water Commissioner to verify.

Summary

71 separate high-flow measurements were taken this season with the acoustic Doppler "River Surveyor," which has saved time as this new substitute technology is needed for safer measurement of non-wade-able flows without expensive and dangerous cableways or bridges. We assisted the NRCS at SnoTel repairs and installation of soil-moisture sensors.

Delay continues in compiling an updated (statutory) Tabulation Book from the agency's comprehensive e-Permit development, and in publishing the Hydrographers' Annual Report from the Aquarius streamgage reduction software. The latter forced our return to the problematic process of interfacing Access lists to Excel spreadsheets, of data back to the Access database, then to Sequel, and finally to CrystalReports for publication. While that process has improved, the new Aquarius streamgage reduction software for our diversion records and real-time data web-posting is still in transition as we re-learn each year's sophisticated upgrades in its stand-alone licensing, which software should eventually also provide direct publishing.

A motivated and ambitious team is critical and valued as we look at challenges and opportunities for protecting the rule of law in water rights. We have gifted staff; and expectations of integrity, work ethic, and attention to accuracy and follow-through in our Mission are important values for State government's entire team.

BOARD OF REGISTRATION FOR

PROFESSIONAL ENGINEERS AND

PROFESSIONAL LAND SURVEYORS

By

Christine Turk
Executive Director

Objectives

The primary responsibility of the Board is self-regulation of the engineering and land surveying professions for protection of the public in Wyoming. Careful processing of applications from individuals, and firms registered in other states, and administration of examinations for new applicants in Wyoming occupy most of the Board's efforts. In addition, the Board investigates complaints against engineers, land surveyors and business entities. It is the Boards goal to reduce the backlog of enforcement cases, and enhance the website by ensuring information is relevant and current.

Major Accomplishments

The Board was successful in offering online renewals for the convenience of its registrants.

Law Enforcement Activity

The Board has vigorously pursued the requirement that persons offering professional engineering and land surveying services in Wyoming become licensed. Correspondence from the Board Office or the Attorney General's Office has usually been effective in obtaining compliance with the statute.

The Board continues to use the National Council of Examiners for Engineering and Surveying's (NCEES) national database for retrieving information on disciplinary matters, as well as providing information on Wyoming registrants who are disciplined.

The Board continues to investigate every complaint concerning the practice of our registrants. The Board now has the expertise of two investigators who investigates all complaints. This has streamlined the process and in most cases, a resolution has been accomplished without a formal hearing.

Finally, the Board has provided exceptional leadership at the national level with several of its members serving as officers, committee chairs or committee members of the NCEES.

PROBLEMS AND RECOMMENDATIONS

The Board continues to explore alternatives for providing a swifter means of completing resolution of complaint investigations. Due to the Board meeting on a quarterly basis however, some recommended resolutions are delayed due to the meeting schedule.

SUMMARY OF REGISTRANTS AS OF SEPTEMBER 30, 2011				
		RESIDENT	NON-RESIDENT	TOTAL
PROFESSIONAL ENGINEER	INDIVIDUAL	1,104	4,624	5,728
	CORPORATION	87	513	600
	TOTAL	1,191	5,137	6,328
PROFESSIONAL LAND SURVEYOR	INDIVIDUAL	131	188	319
	CORPORATION	17	15	32
	TOTAL	148	203	351
PROFESSIONAL ENGINEER & LAND SURVEYOR	INDIVIDUAL	70	39	109
	CORPORATION	32	27	59
	TOTAL	102	66	168
ENGINEER-IN-TRAINING		1,452	852	2,304
LAND SURVEYOR-IN-TRAINING		65	13	78
GRAND TOTAL		**2,958**	**6,271**	**9,229**

The purpose of the NCEES is to provide an organization through which state Boards may act and counsel together to better discharge their responsibilities of regulating the practice of engineering and land surveying as it relates to the welfare of the public in safeguarding life, health and property. Serving the NCEES at a national level has been very beneficial to the operations of the Board. While all Member Boards attempt to have uniformity in their requirements, without the involvement and exchange of information from state to state, achieving that uniformity would be essentially impossible.

STATE BOARD OF EXAMINING WATER WELL DRILLING CONTRACTORS AND WATER WELL PUMP INSTALLATION CONTRACTORS
WY 2010-11

by
Lynn Ritter, Executive Director
125 Ocean Lake Road, Riverton, Wyoming 82501
307-857- 4169 wwcb.state.wy.us

Report Period:

October 1, 2010 through September 30, 2011 (Water Year 2011)

Basic Facts:

The State Board of Examining Water Well Drilling Contractors and Water Well Pump Installation Contractors (the Board) was created by legislation in the 2003 session. The Board consists of seven members and has been a functioning entity since June 2003.

Mission

Since the 2008 Legislature passed HB0055, *Water Well Drilling and Pump Installation Licensure*, which requires mandatory licensing of water well drilling contractors and water well pump installation contractors, the Board's role is now one of administering a mandatory license program. The purpose of the licensing program is to protect the public from incompetent or unethical water well drilling and water well pump installation contractors, as well as to promote excellence in the practice of their area of expertise. The Board is authorized to suspend or revoke the license of water well contractors that fail to meet established standards of the profession. Additionally, licensing protects the ground water resources of the state and promotes excellence in water well drilling and pump installation practices.

Applicable Statutes

The statutes governing the mandatory licensing program can be found in Title 33 – Professions and Occupations, Chapter 42 – Water Well Drilling Contractors and Water Well Pump Installation Contractors, W.S. §33-42-101 through W.S. §33-42-117.

Licensing

In WY11 there were fourteen (14) new licenses issued from October 1, 2010 to September 30, 2011. To date there are a total of 287 license holders to include: 89 Well Drilling Contractors (WD), 90 Pump Installation Contractors (PI) and 108 with both a Well Drilling and Pump Installation Contractors (WDPI) license.

Accomplishments

- Hired new Executive Director.
- Adopted new Rules and Regulations.
- Updated Licensing Software – to include adding the ability to print licenses.
- Updated Board Website- added new search options, photos, etc.
- Issued 14 new licenses.
- Renewed 168 licenses out of 177 renewals.
- Drafted and submitted Annual Report WY 09-10.
- Docketed 13 complaints; investigated 11, finalized and cleared 5.
- Recorded 28 incident reports; noting non-verified public complaints.
- Performed approximately 55 public well inspections.
- Attended National Groundwater Convention – met with other states regulators, attended educational classes offered.
- Worked closely with Wyoming Water Well Association – attended 3 Board Meetings, helped establish and attended educational classes throughout the state.
- Met with Exam Committee to establish Wyoming Exams for new licensees.
- Introduced 2 new Board Members from DEQ and SEO.
- Wrote 2 Exception requests for permanent Executive Director Position and for a Board Vehicle.
- Worked closely with State Engineer's Office enforcing compliance with state minimum construction standards via sending 21 Advisory Letters to Contractors.

Budget

The State Engineer's Office according to statutory provision, W.S. §9-1-904(b) deposits an amount not to exceed $25 from each domestic, stock, irrigation, municipal, industrial, and miscellaneous well permit application fee into an account created under W.S. §33-42-116 for wells which require the use of a licensed well driller pursuant to W.S. §33-42-103. New license fees, license renewals and miscellaneous fees collected added to the revenue from permit fees comprise the boards budget.

Permit fees collected was $30,400.00
Renewal license fees collected was $39,850.00.
New license fees collected was $3975.00.
Misc. fees collected was $15.25.

The *State Board of Examining Water Well Drilling Contractors and Water Well Pump Installation Contractors* currently struggles with having an adequate budget that will support a permanent full time executive director, a contract inspector, a state issued vehicle, and reimbursement for; travel to meetings, educational classes, and most importantly public inspections.

Budget cont.

Increasing the permit fees for wells and depositing up to $75.00 per permit in the Water Well Contractors Account, would provide the necessary funding needed to operate and manage the Board. Likewise, increasing license and exam fees will help to increase revenue to support current inadequacies.

Goals and Key Initiatives

Goal # 1: Make changes to Wyoming State Statutes applicable to the Board. W.S. §33-42-101 through W.S. §33-42-117.

	Key Initiatives
1	Re-define water well drilling contractor.
2	Re-define water well pump installation contractor.
3	Increase amount deposited into Board Account from the State Engineer's Permit fees. W.S. §9-1-904(b)
4	Increase amount of license fees.

Goal # 2: Make changes to Rules and Regulations.

	Key Initiatives
1	Re-define water well drilling contractor.
2	Re-define water well pump installation contractor.
3	Define the following; equipping, rehabilitating, maintaining,
4	Delete Chapter 8 – as it is a duplicate of current Chapter 7.
5	Re-define Chapter 7 – CPC credits.
6	Increase exam fees to include new general and specific exams established and required by the board for licensure.

Goal # 3: Increase Budget and Board Revenue.

	Key Initiatives
1	Increase budget by increasing amount deposited into Board Account from the State Engineer's Permit fees. W.S. §9-1-904(b)
2	Increase license fees from $200 per license for a 3 year period to an amount established and acceptable to the Board Members.
3	Increase Exam fees.
4	Continue to enforce license laws and increase the number of licensed contractors.
5	Send out license renewals and work closely with licensed contractors to support license renewal.

Goal # 4: Regulate compliance with State Minimum Construction Standards.

	Key Initiatives
1	Work closely with the State Engineer's Office to establish forms required to be filled out and sent to state from water well drilling contractors.
2	Work closely with the State Engineer's Office to establish forms required to be filled out and sent to state from water well pump installation contractors.
3	Continue to educate licensed contractors on compliance with minimum construction standards by sending advisory letters.
4	Meet with and establish a good working rapport with licensed contractors while attending continuing education classes.
5	Continue to work closely with State Engineer's Office in requiring compliance with current Rules and Regulations, Statutes, and Minimum Construction Standards.
6	Help to educate the public about required rules and standards.

Goal # 5: Establish Staff Positions.

	Key Initiatives
1	Establish Executive Director Employee position as a permanent state employee position.
2	Hire contract inspector.

Goal # 6: Establish Public Support.

	Key Initiatives
1	Continue to perform well and pump inspections for the public.
2	Review public complaints for license violations.
3	Investigate public complaints.
4	Work closely with Board Members and Prosecuting Attorney General on docketed public complaints.

Goal # 7: Create and Submit Annual Report.

	Key Initiatives
1	Review, evaluate, and update previous year's goals and initiatives, and create new ones for coming year.
2	List Accomplishments.
3	List on-going and new goals.

Board Meetings

In WY 2011, the Board met five times as a quorum. Additional meetings were needed to assist in development of the proposed Rules and Regulation Changes, to introduce and give directives to the new Board Executive Director, to introduce new Board Members, and establish a new Chairman.

- October 25, 2010, Riverton, Wyoming
- November 17, 2010, Casper, Wyoming
- January 26, 2011, Casper, Wyoming
- April 28, 2011, Casper, Wyoming
- August 23, 2011, Casper, Wyoming

Board Members

WY 2011 Board members include:

Board Member:	Representing:	Term Expires:
Jack H. Weber	At-large Water Well Drilling Contractor	3/31/15
Charles W. Wilson	Water Well Driller	3/31/13
LeRoy Christiansen	Irrigation Well Contractor	3/31/15
Steven R. Barbour	Water Well Pump Installation Contractor	3/31/13
Richard G. Stockdale	Public Who Owns an Active Well	3/31/13
George Moser	SEO Designee	3/31/13
James O'Connor	DEQ Designee	3/31/15

Staff

Lynn Ritter was hired as the Executive Director on September 15, 2010 to fill the Board Position.

LEGAL ACTIVITIES

By

Water & Natural Resources Division
Wyoming Attorney General's Office

North Platte River

Building upon the previous year, 2011 brought record-setting snow levels and healthy flows to the North Platte River drainage. This office continued to advise the State Engineer's Office and the Water Development Commission on issues related to the river, including Wyoming's establishment of two separate limitations for intentionally irrigated acreage under the Modified Decree. This action was required by the Modified Decree, and culminated with the submission of a joint motion to the U.S. Supreme Court requesting the amendment of the Modified Decree. This office worked closely with attorneys for the United States and the State of Nebraska to jointly request that the Court adopt the new limitations determined by Wyoming. The Court has not yet issued a ruling on the motion.

Colorado River

Litigation in the United States District Court in Phoenix, Arizona, between the Grand Canyon Trust and the United States continued in 2011. Wyoming is an intervening party, along with the other six Colorado River Basin states and several other public entities. The Grand Canyon Trust generally alleges that the Bureau of Reclamation is violating various federal statutes and rules in the manner in which it releases water from Glen Canyon Dam. This year, the District Court granted summary judgment to the United States on the Trust's remaining claims. The Trust appealed to the United States Court of Appeals for the Ninth Circuit and requested an emergency injunction pending appeal which was denied. Briefing to the Court of Appeals will be complete in January, 2012, with the Colorado Attorney General's Office taking the lead for the states. Oral arguments will likely take place in early spring of 2012, and a decision should follow later in 2012.

The United States Department of the Interior, together with the International Boundary Waters Commission, engaged in negotiations with the Republic of Mexico with regard to Mexico potentially participating with the Colorado River Basin States in water shortages and surpluses. Together with attorneys who represent the other six Colorado River Basin states and other stakeholders, this office monitored the negotiations and advised the State Engineer on legal issues related to those negotiations.

The Million Resource Conservation Group has previously sought a permit from the State Engineer to allow construction of diversion structures on the Green River near Green River, Wyoming, to serve a pipeline that would transport the water across the continental divide to eastern Wyoming and communities along the Colorado Front Range. A permit application previously made by the Group to the Army Corps of Engineers was abandoned, and a similar application was initiated with the Federal Energy Regulatory Commission by WYCO Water and Power, Inc., referencing a new power generation element to the proposed project. This office closely tracked the new filing and advised the Governor's office and the Wyoming Game & Fish Department regarding water issues.

On January 24, 2011, Wyoming and other Upper Colorado River Basin States entered a Memorandum of Agreement with federal entities for the purpose of making a percentage of revenues generated under the Colorado River Storage Project Act available to each state for qualifying water projects and activities. This office monitored the agreement negotiations and advised the State Engineer on legal issues related to the agreement, and assisted with drafting potential statutory language authorizing the State Engineer to identify and prioritize qualifying projects and activities.

Yellowstone River Compact

In early 2007, Montana sued Wyoming in the United States Supreme Court alleging violations of the Yellowstone River Compact within the Tongue and Powder River basins, and the Court later appointed a special master to preside over the case. On February 3, 2009, the Special Master heard arguments on Wyoming's Motion to Dismiss Montana's claims. After that hearing, the Special Master submitted a First Interim Report to the Court where he generally recommended that the Court deny Wyoming's motion, but supported Wyoming's position on a key issue. He determined that Wyoming water users in the Tongue and Powder River basins with water rights established before 1950 were not required to limit their consumptive water use to quantities that were consumed on their lands as of 1950. Thus, Wyoming irrigators could improve their irrigation methods to result in higher crop uptake without violating the Compact. In 2010, Montana filed a bill of exceptions with the United States Supreme Court on this issue, which the Supreme Court then set for oral argument.

On January 10, 2011, Peter Michael, now Chief Deputy Attorney General, argued Wyoming's position on the issue to the U.S. Supreme Court. On May 2, the Justices, in a 7-1 decision, agreed with Wyoming's position and the Special Master's Interim Report, and denied Montana's exception.

After the Supreme Court's decision, the Special Master proceeded to address other preliminary legal matters. These included the Special Master's finding that Montana needs to notify Wyoming when Montana's pre-1950 water rights are not being satisfied, and that Montana's bill of complaint only adequately pled the allegation that Wyoming has denied water needed for pre-1950 rights in Montana. Presently, the case is in the discovery stage with a trial tentatively scheduled for the summer of 2013.

Intrastate Legal Matters

In a case appealed to the Wyoming Supreme Court, this office defended a decision by the Superintendent of Water Division Number One and State Engineer denying the request of a landowner to require an irrigation district to construct a headgate on the NorthPlatte River. The Supreme Court held that the State Engineer's decision that the district's headgate located at its adjudicated point of diversion satisfies the requirements of Wyo. Stat. Ann. § 41–3–613 was not contrary to law, and the State Engineer's decision not to require the district to install a headgate at its diversion dam was not arbitrary and capricious.

This office defended a suit against the State Engineer which challenged his decision to extend two surface water permits for the construction of a reservoir on the Middle Fork of the Powder River. This District Court has currently stayed this suit.

The Niobrara Shale Gas Play in southeastern Wyoming raised legal issues involving the change of use of water rights from agricultural or municipal use to industrial use for well fracking operations. Additionally, the Play raised issues related to new applications for ground water within control areas for the purpose of selling water for oil and gas development. This office continues to advise the State Engineer's Office regarding these developing issues.

In 2010, this office brought suit on behalf of the State Engineer to require a ranch in northeastern Wyoming to cease restricting access so that State Engineer personnel could inspect water facilities and administer water rights. In 2011, the parties were able to negotiate a settlement and the case was dismissed.

Big Horn River General Stream Adjudication

The Attorney General's Office continued to represent the State Engineer's Office in the Big Horn River General Stream Adjudication before the special master who is hearing objections on behalf of the District Court of the Fifth Judicial District. In the 2011 water year, there were several objections to the

State Engineer's recommendations regarding the adjudication of state permitted water rights (Phase III) that went to hearing before the Special Master and, in some instances, before the district court. Additionally, multiple appeals were filed with the Wyoming Supreme Court but those appeals were dismissed by the Court as premature.

Other Matters

The Utah Supreme Court upheld the denial of a Utah appropriator's motion to enforce a declaratory judgment of a Utah lower court against the State Engineer's Office. Arguments leading up to the Supreme Court's decision focused primarily on the ability of a Utah court to interpret how Wyoming water law is applied in Wyoming. However, the Utah Supreme Court ultimately held that the motion to enforce the declaratory judgment was procedurally impossible because there was no directive in the declaratory judgment to be enforced against any Wyoming water official.

This office advised the State Engineer regarding a request by the State of Montana for Wyoming to join as an amicus in its United States Supreme Court case against PPL Montana pertaining to river navigability. It was ultimately decided not to join due to Wyoming's unique case law relating to the legal issues raised in that case.

PERSONNEL LISTS
STATE ENGINEER'S OFFICE
(As of September 30, 2011)

Tyrrell, Patrick T. ..... State Engineer
LaBonde, Jr., Harry C. ..... Deputy State Engineer

ADMINISTRATION

NAME	TITLE
Bales, Nancy.	Senior Office Support Specialist
Branigan, Loretta	Human Resources Supervisor
Winders, Steve	Senior Accounting Analyst
Wertz, Tina	Accountant
Shappell, Madeline	Accounting Clerk

SURFACE WATER

NAME	TITLE
Barnes, John	**Natural Resources Program Manager**
Hand, Mike	Principal Engineer
Bratton, Leah	Natural Resources Analyst
Couch, Chris	Natural Resources Analyst
Blanks, Dana	Senior Office Support Specialist
Geyer, Jeffrey	Natural Resources Analyst
Engkvist, Claire	Office Support Specialist II
Feltner, Jason	Natural Resources Analyst
Lane, Monica	Office Support Specialist II
Mathisen, Rebecca	Project Engineer
Mumm, Kyle	Natural Resources Specialist
Robertson, Crystal	Office Support Specialist I
Stockdale, Larry	Principal Engineer
Velez, Phillip A.	Natural Resources Program Supervisor
Cowley, Jeff	Natural Resources Analyst
Wright, Cheryl	Natural Resources Analyst

SUPPORT SERVICES

NAME	TITLE
Zimmerman, Martin	**Computer Technology Program Manager**
Castle, Daniela	Records & Data Management Technician
Cavaliere, Libby	Records & Data Management Technician
Collins, Andrea	Computer Technology Business Applications Specialist II
Irwin, Kay	Records & Data Management Specialist I
Hoobler, Beth	Geospatial Technology Manager
Mathis, Dave	Computer Technology Systems & Infrastructure Specialist II
Morris, Sonia	Records & Data Management Technician
Rayburn, Nathan	Computer Technology Business Application Analyst
Vossler, Steve	Geospatial Technical Principal
Wickham, Brent	Senior computer Technology Systems & Infrastructure Analyst

GROUND WATER

NAME	TITLE
Lindemann, Lisa	**Natural Resources Program Manager**
Arrington, Lee	Natural Resources Program Principal
Carpenter, Terry	Office Support Specialist I
Culver, Sheri	Natural Resources Specialist
Ebsen, Mike	Natural Resources Analyst
Groth, Krissie	Office Support Specialist II
Harju, John	Natural Resources Program Supervisor
Lett, Sunny	Natural Resources Analyst
Leventis, Nick	Natural Resources Analyst
Linn, Cyndee	Office Support Specialist I
Manley, Jeremy	Natural Resources Program Principal
McDonald, Doug	Office Support Specialist II
Miller, Linda	Office Support Specialist II
Moser, George	Natural Resources Program Principal
Neely, James	Natural Resources Analyst
Running, Ben	Natural Resources Analyst
Tebben, Beth	Natural Resources Analyst
Vacant	Office Support Specialist II
Wilber, P.J.	Natural Resources Analyst

STATE BOARD OF CONTROL

NAME	TITLE
Cunningham, Allan D.	**Natural Resources Program Manager**
Verplancke, Cheryl	**Natural Resources Program Supervisor**
Carpenter, Terry	Office Assistant I
Cecil, Jon	Natural Resources Analyst
Dornak, David "Nick"	Natural Resources Analyst
Dudrey, Linda	Office Support Specialist II
Duncan, Bonnie	Office Assistant I
Hallberg, Debra	Natural Resources Analyst
Heckart, Onies "Niesey"	Office Support Specialist I
Henschel, Nathan	Natural Resources Analyst
Lamblin, Cindy	Office Support Specialist I
McCann, Nancy	Natural Resources Program Principal
Mumper, Karen	Natural Resources Analyst
Pierce, Dixie	Natural Resources Specialist
Rockweiler, Jedadiah	Natural Resources Analyst
Westbrook, Carol	Senior Office Support Specialist
Tullis, Randy	**Superintendent**
Water Division No. I	Torrington
LoGuidice, Carmine	**Superintendent**
Water Division No. II	Sheridan
Smith, Loren	**Superintendent**
Water Division No. III	Riverton
Henderson, Jade	**Superintendent**
Water Division No. IV	Cokeville

INTERSTATE STREAMS

NAME	TITLE
Lowry, Sue	**Natural Resources Program Manager**
Hoobler, Matt	Natural Resources Program Principal
Pring, Jodee	Natural Resources Analyst
Shields, John W.	Natural Resources Program Principal
Wolff, Steve	Natural Resources Program Principal

WATER ADMINISTRATION PERSONNEL
(As of September 30, 2011)

Key to Title Abbreviations:

NRA	=	Natural Resources Analyst
NRS	=	Natural Resources Specialist
AI	=	Acreage Inspector
WI	=	Well Inspector
PI	=	Pump Inspector
LH	=	Lead Hydrographer
HC	=	Hydrographer-Commissioner
AHC	=	Asst. Hydrographer-Commissioner
TI	=	Tributary Inspector

DIVISION I: PERSONNEL AT LARGE

TITLE	NAME	ADDRESS
Superintendent	Randy Tullis, rtulli@seo.wyo.gov	510 West 27th Torrington, Wyoming 82240
Assistant Superintendent	Brian Pugsley, bpugsl@seo.wyo.gov	510 West 27th Torrington, Wyoming 82240
Program Principal	Rob Foreman, rforem@seo.wyo.gov	510 West 27th Torrington, Wyoming 82240
Office Support Specialist II	Sharon L. Hackett, shacke@state.wy.us	510 West 27th Torrington, Wyoming 82240

DIVISION I: WATER ADMINISTRATION PERSONNEL

DISTRICT	TITLE	NAME	ADDRESS
1	HC	Scott Ross, sross@seo.wyo.gov	PO Box 218 Meridan, WY 82081
2	HC	Gary Mehling, gmehli@seo.wyo.gov	510 West 27th Torrington, Wyoming 82240
3,4C	HC	Doug Oliver, dolive@seo.wyo.gov	1560 B Johnston St. Wheatland, Wyoming 82201
4A	HC	Darren Parkin, dparki@seo.wyo.gov	Laramie Civic Center 710 Garfield, Room 114 Laramie, Wyoming 82070
4B	HC	Trevor Hiegel, thiege@seo.wyo.gov	Laramie Civic Center 710 Garfield, Room 114 Laramie, Wyoming 82070
6,7,8,16, 17,18	HC	Kevin Pantle, kpanti@seo.wyo.gov	PO Box 710 Saratoga, Wyoming 82331
6,7,8,16, 17,18,	HC	Robin Blake, rblake@seo.wyo.gov	PO Box 710 Saratoga, Wyoming 82331

DIVISION I: WATER ADMINISTRATION PERSONNEL (cont'd)

DISTRICT	TITLE	NAME	ADDRESS
9	HC	Rod Oliver, rolive@seo.wyo.gov	277 Dutton Creek Road Laramie, Wyoming 82070
13, 15-5, 20	HC	Jack Clark jclark@seo.wyo.gov	117 S. 2nd St., Rm. 3 Douglas, Wyoming 82633
10,11, 12, Asst 14	HC	Jack Gibson, jgibso@seo.wyo.gov	2020 Fairground Rd., Ste. 104 Casper, Wyoming 82604
14	HC	Kent Becker, kbecke@seo.wyo.gov	510 West 27th Torrington, Wyoming 82240
North Platte River	TI	Tracy Brown, tbrown@seo.wyo.gov	510 West 27th Torrington, Wyoming 82240
North Platte River	AI	J. Scott Haskamp, shaska@seo.wyo.gov	2020 Fairground Rd. Ste. 104 Casper, WY 82604
North Platte River	AI	Chad Pickett, cpicke@seo.wyo.gov	PO Box 710 Saratoga, Wyoming 82331
North Platte River	WI	Kelly Mehling, kmehli@seo.wyo.gov	510 West 27th Torrington, Wyoming 82240
North Platte River, 19	PI AHC	Wray Lovitt, wlovit@seo.wyo.gov	117 S. 2nd Street, Ste. 2B Douglas, Wyoming 82633
4A, 4B	AHC	Susan Kersey, skerse@seo.wyo.gov	Laramie Civic Center 710 Garfield, Rm. 114 Laramie, WY 82070
8	AHC	Susan Adams, sadams@seo.wyo.gov	PO Box 391 Baggs, WY 82321
North Platte River	AI	Connie Kersting, ckerst@seo.wyo.gov	1560 B Johnston St., Wheatland, WY 82201

DIVISION II: PERSONNEL AT LARGE

TITLE	NAME	ADDRESS
Superintendent	Carmine LoGuidice, carmine.loguidice@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
Assistant Superintendent	William (Bill) Knapp, bill.knapp@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
Office Support Specialist II	Deborah Reed, deb.reed@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
CBNG Res. Inspector	Kim French, kim.french@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801

DIVISION II: WATER ADMINISTRATION PERSONNEL

DISTRICT	TITLE	NAME	ADDRESS
1,7,10	HC	Kody Steinbrecher, kody.steinbrecher@wyo.gov	113 S. 21st St. Sundance, Wyoming 82729
2,3,7,8,9,10, 11	LH	David Pelloux, dave.pelloux@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
8	HC	Robert Furnival Bob.furnival@wyo.gov	P.O. Box 3 Kaycee, Wyoming 82639
5,6	HC	Pat Boyd, pat.boyd@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
1,8	HC	Roger Ralph, roger.ralph@wyo.gov	2020 Fairgrounds Road Ste 104 Casper, Wyoming 82604
8,9,10,11	HC	David Schroeder, david.schroeder1@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801

DIVISION III: PERSONNEL AT LARGE

TITLE	NAME	ADDRESS
Superintendent	Loren Smith, lsmith@seo.wyo.gov	715 East Roosevelt Riverton, Wyoming 82501
Assistant Superintendent	David Deutz, ddeutz@seo.wyo.gov	2009 Big Horn Avenue, Ste 1 Worland, WY 82401
Office Support Specialist II	Janet Wempen, jwempe@seo.wyo.gov	715 East Roosevelt Riverton, Wyoming 82501

DIVISION III: WATER ADMINISTRATION PERSONNEL

DISTRICT	TITLE	NAME	ADDRESS
1, 11	HC	Myron Smalley, msmall@seo.wyo.gov	715 East Roosevelt Riverton, Wyoming 82501
1,3	HC	Ryan Bjerke, rbjerk@seo.wyo.gov	715 East Roosevelt Riverton, Wyoming 82501
5, 14	HC	Joshua Voorhees, jvoorh@seo.wyo.gov	2009 Big Horn Ave., Ste 1 Worland, WY 82401
6,12	HC	Philip Beamer, pbeame@seo.wyo.gov	2009 Big Horn Ave., Ste 1 Worland, WY 82401
7	HC	Gary Anders, gander@seo.wyo.gov	PO Box 263 Greybull, Wyoming 82426
8	HC	Heber Jensen, hjense@seo.wyo.gov	1201 E. 7th Powell, WY 82435
9,10,15	HC	Landis Webber, lwebbe@seo.wyo.gov	1201 E. 7th Powell, WY 82435
13,16	HC	Mike Riley, mriley@seo.wyo.gov	1201 E. 7th Powell, WY 82435

WATER DIVISION III - BIG HORN GENERAL ADJUDICATION

DISTRICT	TITLE	NAME	ADDRESS
Big Horn	NRA	Ryan Mikesell, rmikes@seo.wyo.gov	715 East Roosevelt Riverton, Wyoming 82501

DIVISION IV: PERSONNEL AT LARGE

TITLE	NAME	ADDRESS
Superintendent	Jade Henderson, jade.henderson@wyo.gov	PO Box 277 Cokeville, Wyoming 83114
Assistant Superintendent	Kevin Payne, kevin.payne@wyo.gov	PO Box 277 Cokeville, Wyoming 83114
Office Support Specialist I	Carol Reed, carol.reed@wyo.gov	PO Box 277 Cokeville, Wyoming 83114

DIVISION IV: WATER ADMINISTRATION PERSONNEL

DISTRICT	TITLE	NAME	ADDRESS
1,3,9,14,15	LHC	John Yarbrough, john.yarbrough@wyo.gov	PO Box 1208 Lyman, Wyoming 82937
2	HC	Mike Johnson, mike.johnson@wyo.gov	PO Box 277 Cokeville, WY 83114
3	HC	Zach Rasmussen, zach.rasmussen@wyo.gov	PO Box 464 Lyman, WY 82937
4	HC	Don Shoemaker, don.shoemaker@wyo.gov	343 Ninth Street Evanston, Wyoming 82930
7,10,11	HC	Jeff Davis, jeff.davis@wyo.gov	PO Box 1080 Big Piney, Wyoming 83113
7,10,11	HC	Courtney Skinner, courtney.skinner@wyo.gov	PO Box 61 Daniel, Wyoming 83115
5,6,7,10,11, 13,16	LHC	Ed Boe, ed.boe@wyo.gov	PO Box 1080 Big Pine, WY 83113
8,12	HC	Ed Bruce ed.bruce@wyo.gov	142 Allred Road Afton, Wyoming 83110
9	HC	Bill Marchione, bill.marchione@wyo.gov	PO Box 605 Kemmerer, Wyoming 83101
13	HC	Jim Wilson, jim.wilson@wyo.gov	275 Yellow Rose Drive Alta, Wyoming 83422
14	HC	Todd Covolo, todd.covolo@wyo.gov	PO Box 1165 Lyman, WY 82937
3,14,15	HC	DeLynn Saxton, delynn.saxton@wyo.gov	PO Box 1208 Lyman, Wyoming 82937
16	HC	Bodean Barney, bodean.barney@wyo.gov	PO Box 9575 Jackson, Wyoming 83002

STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND PROFESSIONAL LAND SURVEYORS

NAME	ADDRESS	POSITION	PHONE	E-MAIL	TERM EXPIRES
David L. Whitman	College of Engineering Dept. 3295 1000 E. University Ave. Laramie, WY 82071	President	307-766-6466	Whitman@uwyo.edu	3-31-13
Jerry L. Jessen	3664 Foxcroft Rd. Cheyenne, WY 82001.	Member	307-634-4197	jkjessen4@msn.com	3-31-14
Patrick T. Tyrrell	State Engineers Office Herschler Bldg. 4th Fl. Cheyenne, WY 82002	Secretary-Treasurer	307-777-6167	patrick.tyrrell@wyo.gov	Indefinite
Thomas V. Anderson	Steel Structures, Inc. 1020 Sussex Casper, WY 82609	Vice President	307-472-7381	tvander@bresnan.net	3-31-13
Shelley R. Macy	Macy Engineering, P.C. 217 W. 18th St. Cheyenne, WY 82001	Member	307-631-4049	shelleymacy@bresnan.net	3-31-14

Skylar V. Wilson	Wilson Land Surveying P.O. Box 938 Pinedale, WY 82941	Member	307-367-6417	skwilson@wyoming.com	3-31-14
Corky Stetson	Stetson Engineering P.O. Box 457 Gillette, WY 82717	Member	307-682-8936	cstetson@vcn.com	3-31-13

Attorney General Contact			
NAME	ADDRESS	PHONE	E-MAIL
Ken Nelson	2424 Pioneer Ave. Cheyenne, WY 82002	307-777-7890	Ken.nelson@wyo.gov
Bob Walters	2424 Pioneer Ave. Cheyenne, WY 82002	307-777-8662	Bob.walters@wyo.gov

NAME	POSITION
Christine Turk	Executive Director
Krista M. Wilson	Office Support Specialist
Troy A. Niesen	Office Support Specialist

STATE BOARD OF EXAMINING WATER WELL DRILLING CONTRACTORS AND WATER WELL PUMP INSTALLATION CONTRACTORS

NAME	ADDRESS	PHONE NO.	E-MAIL	TERM EXPIRES *
George Moser	Herschler Bldg. 4E Cheyenne, WY 82002	307-777-2974	george.moser@wyo.gov	3/31/2013
Jim O'Connor	510 Meadowview Drive Lander, WY 82520	307-332-3144	james.oconnor@wyo.gov	3/31/2015
Jack Weber	1305 Gregory Lane Jackson, WY 83001	307-733-3343 307-413-1596 (cell)	jackweber@qwestoffice.net	3/31/2015
Chuck Wilson	P.O. Box 113 Hawk Springs, WY 82217	307-532-3792	NA	3/31/2013
LeRoy Christianson	P.O. Box 749 Lusk, WY 82225	307-334-2817	FAX: 334-3676	3/31/2015
Steve Barbour	9406 N Hwy 14-16 Gillette, WY 82716	307-686-2573 307-660-2573 (cell)	sbarbo@state.wy.us	3/31/2013
Richard G. Stockdale	1704 Cheshire Drive Cheyenne, WY 82001	307-635-3602 307-630-5860 (cell)	NA	3/31/2013

* All terms expire March 31st of the year indicated.

Attorney General's Contact: 307-777-3435 (Fax)

Ken Nelson	2424 Pioneer Street 3rd Floor North. Cheyenne, WY 82002	307-777-7890	Knelso3@state.wy.us

GROUND WATER ADVISORY COMMITTEES		
WATER DIVISION	NAME	TERM EXPIRES
DIV. I	Shawn Hall	9/30/17
	Michael Sweat	9/30/12
	Margo Sabec	9/30/17
	Floyd Canfield	9/30/17
DIV. II	Jerry Bush	9/30/12
	James M. Wilson	9/30/17
DIV. III	Dan Wychgram	9/30/12
	Jeanette Sekan	9/30/17
	Doyle Ward tward@wyoming.com	9/30/14
DIV. IV	Nick Bettas	9/30/17
	William Resor	9/30/17
	Vacant	

GROUND WATER CONTROL AREA ADVISORY BOARD MEMBERS				
CONTROL AREA	NAME	ADDRESS	TERM EXPIRE	DISTRICT NO.
LARAMIE COUNTY ESTAB. 9/2/81	Donald Brown	PO Box 708 Pine Bluffs, WY 82082	2012	DIST. 1
	David Cummings	10510 Powder House Cheyenne, WY	2011	DIST.4
	Dale Martin	P.O. Box 391 Carpenter, WY 82054	2012	DIST.2
	David Romsa	5638 County Road 228 Albin, WY 82050	2011	DIST. 5
	Bruce Krug	5106 Westedt Road Cheyenne, WY 82009	2012	DIST.3
PLATTE COUNTY ESTAB. 10/7/81	Brooke Gerke	P.O. Box 1193 Wheatland, WY 82201	2015	DIST.5
	Doug DeRouchey	P.O. Box 457 Wheatland, WY 82201	2012	DIST.1
	Richard Johnson	251 East Johnson Rd. Wheatland, WY 82201	2012	DIST.2
	James Rietz	418 Kittell Wheatland, WY 82201	2012	DIST.3
	Jennifer Reyes-Burr	203 Ferguson Rd. Wheatland, WY 82201	2015	DIST.4
PRAIRIE CENTER ESTAB. 12/2/77	John Ellis	12852 Road 51 Torrington, WY 82240	2014	
	Dennis Isakson	Road 47 Van Tassell, WY 82240	2015	
	Elden Baldwin	13093 Van Tassell Road Torrington, WY 82240	2015	
	Chuck Berry	5117b County Road 116 Torrington, WY 82240	2014	
	Steve Roth	5170 Road 118 Torrington, WY 82240	2014	

WYOMING MEMBERS OF INTERSTATE COMPACT COMMISSIONS AND REGIONAL AND INTERSTATE COMMITTEES RELATING TO WATER RESOURCES

(As of September 30, 2010)

BEAR RIVER COMMISSION

(Idaho, Utah and Wyoming)

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Commissioner
Gordon Thornock	Commissioner
Sam Lowham	Commissioner
Erick Esterholdt	Alternate Commissioner
John Wagner, DEQ – Water Quality Division Admin.	Water Quality Committee Member
Jade Henderson, Superintendent Water Division IV	Alternate Commissioner, Technical Advisory Committee Member
Sue Lowry, Administrator Interstate Streams	Alternate Commissioner, Technical Advisory Committee Member

UPPER COLORADO RIVER COMMISSION

(Colorado, New Mexico, Utah and Wyoming)

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Commissioner
Dan S. Budd, Interstate Stream Commissioner	Alternate Commissioner
Benjamin C. Bracken	Alternate Commissioner
John W. Shields, State Engineer's Office	Engineering Committee, Chairman and Engineering Advisor
Peter K. Michael, Senior Assistant Attorney General	Legal Advisor and Legal Committee Member

COLORADO RIVER MANAGEMENT (AOP) WORK GROUP

NAME, TITLE	POSITION
John W. Shields, State Engineer's Office	Member

COLORADO RIVER COMMITTEE OF FOURTEEN

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Member
John W. Shields, State Engineer's Office	Member

COLORADO RIVER BASIN SALINITY CONTROL ADVISORY COUNCIL

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Member
Dan S. Budd, Interstate Stream Commissioner	Member
John Wagner, Administrator, Water Quality Division, Department of Environmental Quality	Member

COLORADO RIVER BASIN SALINITY CONTROL FORUM

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Member
Dan S. Budd, Interstate Stream Commissioner	Member
John Wagner, Administrator, Water Quality Division, Department of Environmental Quality	Member
John W. Shields, State Engineer's Office	Work Group Member
David Waterstreet, Water Quality Div., Department of Environmental Quality	Work Group Member

GLEN CANYON ADAPTIVE MANAGEMENT PROGRAM

NAME, TITLE	POSITION
John W. Shields, State Engineer's Office	Adaptive Management Work Group Member and Technical Work Group Member

RECOVERY IMPLEMENTATION PROGRAM FOR ENDANGERED FISH SPECIES IN THE UPPER COLORADO RIVER BASIN

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Recovery Implementation Committee Member
John W. Shields, State Engineer's Office	Management Committee Member and Chairman
Pete Cavalli, Wyoming Game and Fish Department	Biology Committee Member

COLORADO RIVER WATER USERS ASSOCIATION

NAME, TITLE	POSITION
John A. Zebre, Citizen	President, Board of Trustees Member, Exhibits Committee Member and Housing and Arrangements Committee Member
Alan W. Harris, Citizen	Member, Board of Trustees; Audit Committee Member and Nominations Committee Member
Benjamin C. Bracken, Citizen	Member, Board of Trustees; and Public Affairs Committee Member
John W. Shields, State Engineer's Office	Resolutions Committee Chairman

MISSOURI RIVER ASSOCIATION OF STATES & TRIBES (MoRAST)

NAME, TITLE	POSITION
Sue Lowry, Administrator Interstate Streams	Director
Jodee Pring, State Engineer's Office	Alternate

YELLOWSTONE RIVER COMPACT COMMISSION
(Montana, North Dakota and Wyoming)

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Commissioner
Sue Lowry, Administrator Interstate Streams	Advisor

YELLOWSTONE RIVER COMPACT COMMISSION
(Technical Committee)

NAME, TITLE	POSITION
Sue Lowry, Administrator	Member
Carmine Loguidice, Division II Superintendent	Member
Loren Smith, Division III Superintendent	Member
Jodee Pring, State Engineer's Office	Member

BELLE FOURCHE RIVER COMPACT
(South Dakota and Wyoming)

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Member
Sue Lowry, Administrator Interstate Streams	Advisor

UPPER NIOBRARA RIVER COMPACT
(Nebraska and Wyoming)

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Member
Sue Lowry, Administrator Interstate Streams	Advisor

OGALLALA AQUIFER INSTITUTE
(Wyoming, South Dakota, Colorado, Nebraska, Kansas, Oklahoma, Texas, New Mexico)

NAME, TITLE	POSITION
Sue Lowry, Administrator Interstate Streams	Member and Treasurer

PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM

NAME, TITLE	POSITION
Michael K. Purcell, Administrator, Water Development Commission	Governance Committee Member
Harry LaBonde, Deputy State Engineer	Governance Committee Alternate Member
Lawrence Besson, Water Development Commission	Water Advisory Committee Member
Matt Hoobler, North Platte River Coordinator	Water Advisory Committee Member
Randy Tullis, Superintendent	Reservoir Coordinating Committee
Randy Tullis, Superintendent	Environmental Account Committee Member
Harry LaBonde, Deputy State Engineer	Land Advisory Committee Member
Lawrence Besson, Water Development Commission	Technical Committee Member

NORTH PLATTE DECREE COMMITTEE

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Chair, Wyoming Representative
Randy Tullis, Superintendent	Alternate Wyoming Representative
Matt Hoobler, North Platte River Coordinator	Official Files Subcommittee Member
Randy Tullis, Superintendent	Crest Control Subcommittee Member
Lisa Lindeman, Administrator, Ground Water Division	Chair, Groundwater Wells Subcommittee
Matt Hoobler, North Platte River Coordinator	Chair, Finance Subcommittee
Randy Tullis, Superintendent	Consumptive Use Subcommittee Member
Matt Hoobler, North Platte River Coordinator	Replacement Water Subcommittee Member

NAME, TITLE	POSITION
Matt Hoobler, North Platte River Coordinator	Stateline Gage Subcommittee Member

SNAKE RIVER COMPACT
(Idaho and Wyoming)

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Member
Sue Lowry, Administrator Interstate Streams	Advisor

SNAKE RIVER COMMITTEE OF NINE

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Advisory Member

WESTERN STATES WATER COUNCIL

NAME, TITLE	POSITION
Matthew H. Mead, Governor	Governor Member
Patrick T. Tyrrell, State Engineer	Member
Peter K. Michael, Senior Asst. Attorney General, Attorney General's Office	Member
John Corra, Administrator, Department of Environmental Quality	Member
Michael K. Purcell, Water Development Commission	Alternate
Sue Lowry, State Engineer's Office	Alternate
John Wagner, Administrator, Water Quality Division, Department of Environmental Quality	Alternate

INTERSTATE COUNCIL ON WATER POLICY

NAME, TITLE	POSITION
Sue Lowry, Administrator Interstate Streams	Chair