STATE OF WYOMING

2010

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, 2009 through September 30, 2010

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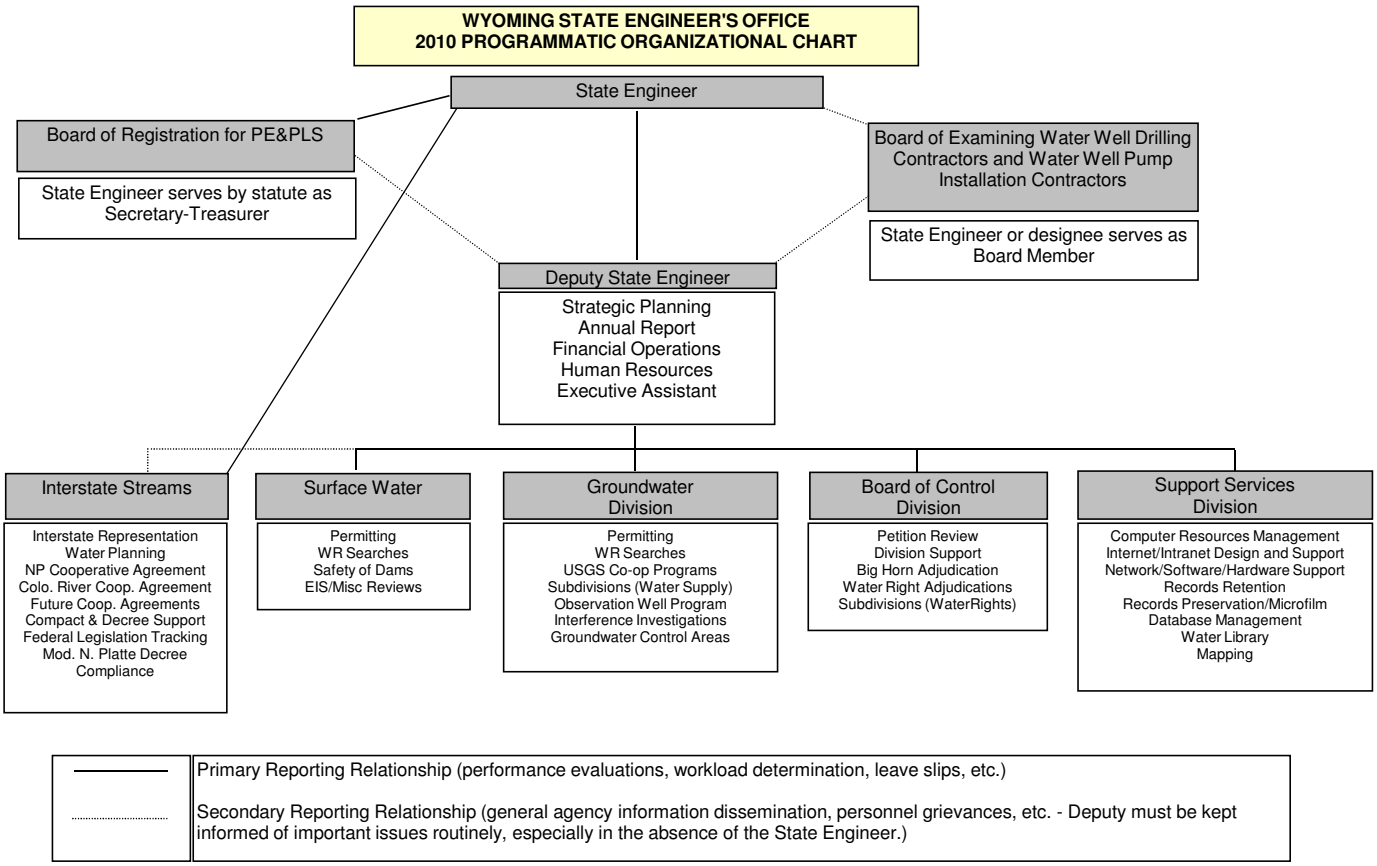

———	Primary Reporting Relationship (performance evaluations, workload determination, leave slips, etc.)
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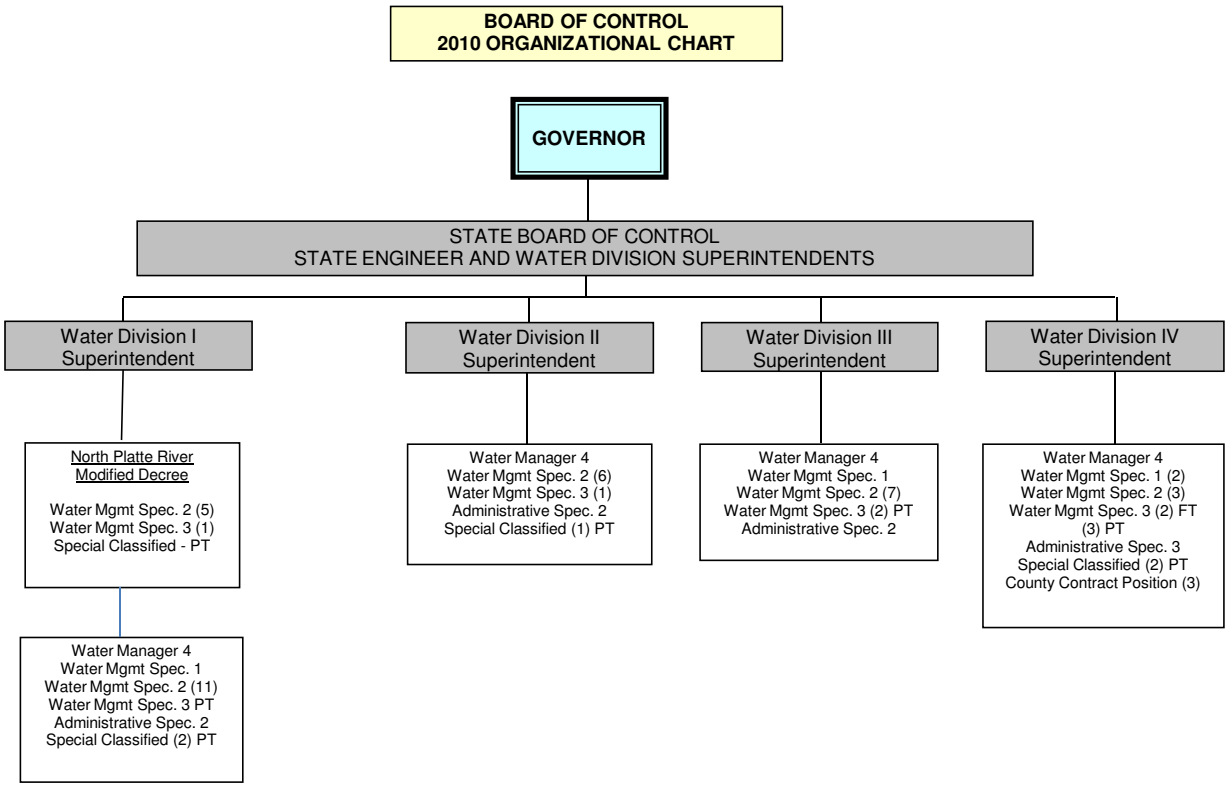
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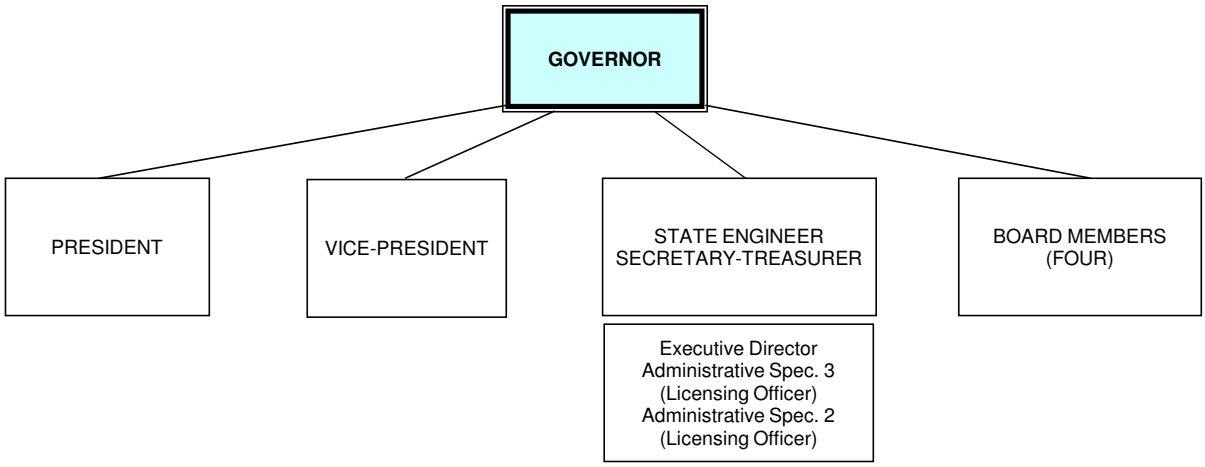

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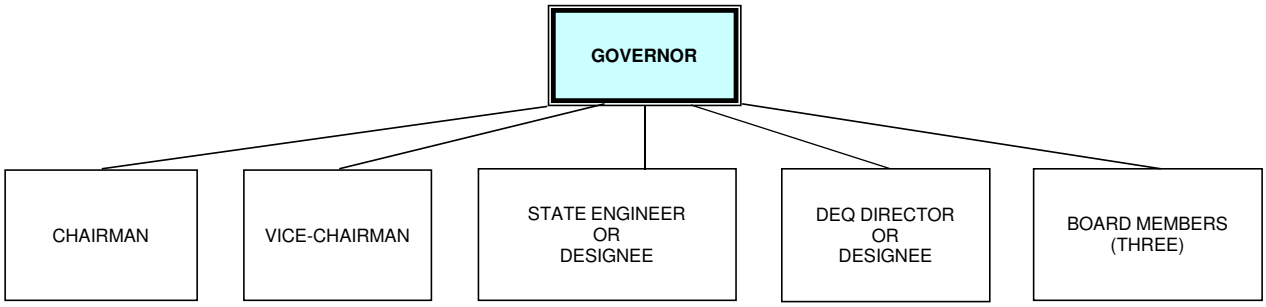


Report of the State Engineer

Patrick T. Tyrrell, P.E.

As I look back over water year 2010, a number of things stand out. First, the most notable hydrologic events occurred in the Wind Big Horn and North Platte River systems, where very late snows and rains resulted in severe flooding in both basins. This came on top of a winter-long snowpack that in other respects was basically average, so that no advance reservoir drawdowns or other actions were contemplated until the floodwaters were upon us. In the Wind/Big Horn system, the most dramatic flooding occurred above Boysen Reservoir in the general vicinity of Lander. Tributaries of the Popo Agie saw the biggest events and Wyoming National Guard troops were brought in to help with evacuations and flood relief efforts there and in the Little Wind River basin. Needless to say, storage in this basin filled, even though similar flooding was not observed in the Big Wind River system.

In the North Platte River basin, similar snow pack and climate conditions converged to create record or near-record flood peaks (if not volumes) at several gages. Most notably, these included gages on the North Platte and Medicine Bow Rivers above Seminoe Reservoir, combining to set a record instantaneous inflow to that reservoir at just over 20,000 cubic feet per second. Elsewhere in the basin, we saw flooding in Saratoga and Laramie, and reservoirs along the Laramie River essentially filled. Wheatland Reservoirs No. 2 and 3, and Grayrocks Reservoir, all did fill, and Lake Hattie accrued almost 55,000 AF, the most it has stored in years.

Because Seminoe Reservoir had accrued significant water in 2009, and with the filling of reservoirs up and down the Laramie River, floodwaters coming down the North Platte had little place to go, and high flows were seen at the Wyoming/Nebraska state line much of the summer. Pathfinder Reservoir spilled for the first time in many years, and Glendo Reservoir held water in its flood control pool for 77 consecutive days. In fact, water released from Glendo and Guernsey reservoirs was accounted as natural flow essentially the entire summer, meaning that no replacement water was released this year for ground water uses in 2009 in the "triangle" area around Torrington. Since 2001 when the Modified Decree and Settlement were entered on this river, there has not been one year when required replacement water wasn't put into the river. Until 2010, that is.

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.

The 2010 Economy

The national and regional economic downturn observed from 2008-2009 continued in 2010, albeit with signs of recovery. Revenues to state coffers exceeded projections, meaning that state government programs, including this agency, saw no further cuts. Previous cuts were also not restored, however. The coal-bed natural gas industry saw no rebound, at least as far as permit applications to this office would testify. Natural gas stores, lower prices, and competition from traditional gas plays, all seem to be keeping the lid on further expansion of coal bed gas production, relative to that industry's growth in the mid-2000s.

Traditional Oil and Gas – Southeast Wyoming

What did perk up this year was the activity surrounding the "Niobrara Shale" oil and gas play in the southeastern part of the state. Located primarily in Laramie, Platte and Goshen Counties, this play is notable because of its need for water to service its drilling and formation-fracturing operations. Early industry estimates were that 13-15 AF of water was needed per well, and this water was not readily available in many places. In Laramie County, most operators have determined to seek Temporary Water Use Agreements (TWUAs) with owners of irrigation wells, and virtually all of those are in the local Ground Water Control Area. Industrial activity has been so intense that this agency has been pushed to adopt several policy and guidance memoranda to direct and manage the issuance of such agreements.

The 2010 Budget session

The agency was largely successful in the budget session this year, securing $500,000 for continued maintenance of our e-permit system which the legislature has invested in mightily the past few biennia. We also received almost $1 million for further investment in our streamgaging program – dollars that will go to continued automation of gages on canals and reservoirs as well as software for tracking the myriad data generated by these systems. Slowly but surely, we are developing an automated data collection system for water supply and distribution that matches or exceeds many of our neighbors. We very much appreciate the legislature's, and the Governor's, support for such enhancements. And our appropriators do too, if public feedback is any indication.

While these were the two largest line items approved for the agency, we also obtained smaller amounts for needed administrative purposes. Unfortunately, one of the problem areas during this period of economic slowing is we still have seven frozen positions that the legislature did not elect to "thaw" for our use. In this regard, we are not unlike all other agencies, where frozen positions exist as well. Still, we were not over-staffed with those folks in place, and we continue to work on getting those positions refilled.

Interstate Streams Issues

A number of issues arose, or continued, in 2010 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, work continued on a Minute to the 1944 Mexican Treaty relative to Mexico storing part of their unused treaty water in reservoirs in the U.S. This effort, begun some time ago, was newly focused on Easter Sunday when an earthquake epicentered in the Mexicali Valley destroyed or rendered inoperable nearly half of the water distribution facilities in that area. Without a way to deliver water to many areas, Mexico's need to protect water sharpened, and the U.S. was equally compelled to proceed in good faith negotiations to find a way to assist our neighbor in need. It is anticipated that Minute 318, which will describe how such storage can occur for a small amount of water in 2010/2011, will be signed in the coming year. Following this emergency agreement, the two nations are hopeful of proceeding on a path to enter into a longer-term agreement for Mexico to make more routine use of U. S. storage. This practice would, of course, be advantageous to the U.S. in that the more water that is stored in Lake Mead, for example, the higher its levels will remain and the chance of shortage declarations will correspondingly go down.

In 2010 work continued as well on an MOA wherein the Colorado River Basin states, CREDA, WAPA, and Reclamation all will 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 will benefit CRSPA power users since the other 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." It is anticipated that this MOA will be executed in WY 2011, and will be reported upon further next year. This agreement is a good deal for Wyoming.

In the Snake River Basin, Wyoming was again approached about leasing part or all 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. Our analyses, and discussions with WWDC and WGF, indicate Wyoming could enter such a lease if the conditions are favorable and our needs for the water are protected.

Litigation

During the year, MT v WY continued, with the Special Master's First Interim Report being issued. Only Montana filed any exceptions to any findings therein, and they excepted in two areas. First, they disagree with the Master's finding that improved irrigation efficiency (e.g. sprinklers) on original permitted acres was not a compact violation. We, of course, know that the Master was perfectly correct in his report, and that such operational changes are allowed.

Second, Montana did not like the Master's finding that they would have to call off Montana rights (post-50) before going after Wyoming in times of shortage – the so-called "intrastate remedy." Because this issue had not been fully briefed, the Court has remanded it back to the Master for further development. It looks like the efficiency issue may be set for oral argument in Washington in January of 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 will continue into 2011, with the first sets of admissions and interrogatories to be completed shortly after the period covered by this report.

Agency Notes

Water year 2010 was a busy, eventful year as regards water issues, but was relatively stable within the agency. There were no changes among the management team, and, with the exception of positions we are not allowed to fill, our staff remained relatively stable. And, a hard-working and dedicated staff they are. As in every year of my tenure in this position, there is no finer place to work, and no better group with which to serve.

Final Note

On a personal level, and for pages of history, I think it may be interesting to note that on November 28, 2009, my dear mother Dorothy married former State Engineer Floyd Bishop. While not an agency matter, it is one of interest for those who may follow this position through history. We State Engineers stick together! Having known them both for many years before they knew each other, I could be no prouder that my lovely mother met such an honorable gentleman. As I began my tenure in this position back in 2001, Floyd was one whom I invited over for coffee periodically, to learn from him and solidify my foundation in Wyoming water law. To have this respected man ultimately become my stepfather is extremely pleasing personally.

Calendar year 2010 marks the last year of Governor Freudenthal's second and final term. While this report ostensibly covers water year 2010, which ended September 30, 2010, it is necessarily written after that date. In fact, I will report on one occurrence that occurred in water year 2011, which is the election on November 2 of Matthew H. Mead as Governor Freudenthal's successor. My current term expires in January 2011, and I hope to continue to serve under Governor Mead if that is his wish. If a reappointment does not occur, and this is my final annual report, then I wish to express my appreciation for being able to serve my home state in this honorable position for the past ten years.

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

Mr. Steve Winders supervises this section and is responsible for processing all fiscal transactions of the agency. In 2010, the Agency presented its 2011-2012 biennium budget proposal to the Legislature. This budget request was submitted to the Governor in August 2009 and was considered during the 2010 Legislative session. For the 2011-12 biennium the agency was appropriated $30,152,176.00 with a total position count as follows:

• Full Time	135 (8 frozen)
• Part Time	11
• At-Will Employee Contract	1
	147

Note: While the Legislature appropriated funding for 147 positions, the agency is not allowed to fill the 8 frozen positions.

The breakdown of funding in the budget proposal is as follows:

• Personnel Costs	$22,814,571	(75.7%)
• Supplies and Services	$ 2,763,618	(9.2%)
• Consulting Services	$ 2,791,710	(9.3%)
• Exception Requests	$ 1,782,277	(5.8%)
	$30,152,176	

A total of nine exception requests were submitted by the agency and all nine were funded in the 2011-12 biennium. Those requests are as follows:

Division Number	Unit Number	Item Request	Department Request
0500	0501	e-Permit Maintenance	$500,000
0400	0401	Statewide Stream Gaging	973,747
0400	0401	MVMS	104,748
0700	0701	Interstate Compacts	22,720
0400	0401	Water Measurement Equipment	65,800
0400	0401	Office Space-Cokeville & Jackson Offices	30,900
0400	0401	Phone System-Riverton Office	4,500
0700	0701	Colorado River Basin Water Supply Study	71,000
0600	0601	Office Space Rental	8,862
Total Budget Request for Department			$1,782,277

Human Resources/Personnel Management

This section is responsible for processing all employee transactions within the agency. This includes payroll, personnel issues, employee benefits such as health insurance, and job recruitment.

During 2009 the State successfully implemented a new job classification system for all full time employees. In 2010, the State began a review of the compensation plan for the new job classifications. The implementation of the new compensation plan is based upon an employer salary survey which included both government and private sector employers. The compensation plan has eliminated cost of living increases and replaced them with a pay for performance or merit pay system. As such the goals for 2011 are to develop an effective performance appraisal system that can be presented to the Governor and Legislature in 2012.

IT Initiative

As noted above, the Legislature appropriated $500,000 for e-Permit maintenance. The project will include several components including:

- Enhancements to e-Permit – since e-Permit went live, the agency has been tracking suggested changes/enhancements that will improve the system. These enhancements will be programmed into the system.

- Core Software Upgrades – e-Permit operates using numerous core software programs such as SQL Server and Crystal Reports. As software versions become outdated, it is necessary to update them to increase efficiency and maintain security against the latest cyber threats.
- Update the Document Management System (DMS) – the FileNet software and other software that run the DMS are in need of updating.

It is anticipated that two contracts will be issued in FY 2011 to complete the work described above. Weston Solutions will perform the e-Permit work and enChoice will be placed under contract for the DMS work.

GROUND WATER DIVISION

This Water Year 2010 (WY-10) report covers the time period from October 1, 2009 to September 30, 2010 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; the Cooperative Programs section reports on the three programs administered by the Ground Water Division, including 1) Surface and Ground Water Data Collection, 2) Snow Survey, and 3) Stream-flow Forecast and Subdivision Water Rights.

GROUND WATER SECTION

By

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

Objectives

The objectives of the Ground Water Division (GW) are:

1. To issue, record, maintain, and prepare permits for adjudication which grant the right to appropriate ground water within the State of Wyoming and maintain a database of approved permits.
2. To resolve conflicts between ground water users.
3. To conduct Control Area Advisory Board meetings.
4. To coordinate ground water 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 ground water resources.
7. To investigate the occurrence of ground water resources.
8. To monitor ground water levels across the state.

Accomplishments

Application Processing and Recording

During WY-10, GW received 1989 *Applications for Permit to Appropriate Ground Water,* a decrease of 693 applications from WY-09. During WY-10, 1,746 applications were approved to permit status, 615 less than WY-09. Ninety (90) applications were rejected in WY-10, an increase of 30 rejections over WY-09. In addition to applications for new appropriations of ground water, 64 *Applications to Relocate &/or Deepen an Existing Domestic &/or Stock Well*

were received and processed. Of those 64 applications, 30 requests to deepen and/or relocate were approved, 12 deepen requests were approved, and 22 relocate requests were approved.

One of the primary reasons GW processed less applications in WY-10 appears to be a marked decline in coalbed methane gas (CBM) production activities. Additionally, GW began internal implementation of e-Permit in September 2008. As e-Permit is being "fine tuned", GW continues to adapt to a time consuming electronic permitting process. While no time savings has 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-10, 607 *Application(s) for Permits to Appropriate Ground water* 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 ground water 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 a decrease of 437 permits from WY-09. Abandoned wells for which the attendant water rights were cancelled amounted to 694, an increase of 396 from WY-09. The figure for abandoned/cancelled permits is separate from the count for cancelled permits where the required notices were not filed. Abandoned/cancelled permits represent wells that were in use and were subsequently abandoned, generally for physical failure.

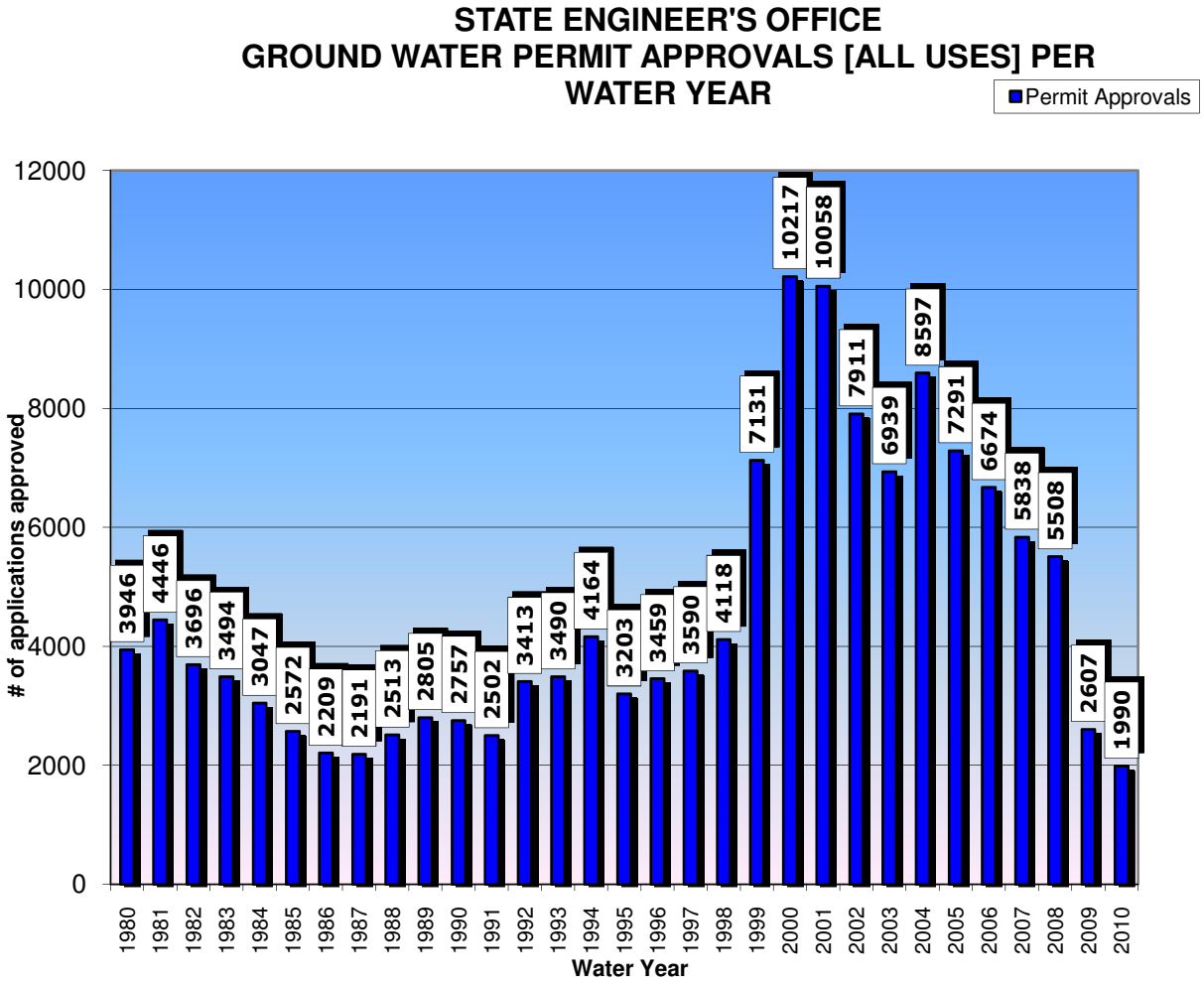
Four Thousand three hundred ninety three (4,393) expiration letters were prepared and mailed by the Ground Water Division, notifying applicants that their well permits were about to expire because the *Statement of Completion and Description of Well or Spring* or *Beneficial Use of Ground Water* forms had not been properly submitted. One thousand three hundred and fifty three (1,353) fewer letters were sent in WY-10 than WY-09.

Sixty-two (62) Coalbed Methane (CBM) Use permits were suspended due to the long-term production of water and the failure to produce gas, and 36 permits were "unsuspended" or reverted back to "good standing" per the request of the company.

Permit Maintenance Program

Appropriators for 102 ground water rights were reassigned during WY-10, a decrease of 764 assignments from WY-09. Twenty four (24) of those assignment requests accompanied *Applications to Relocate &/or Deepen an Existing Domestic &/or Stock Well.*
Requests for 2,353 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, an increase of 428 requests from WY-09. Four (4) requests for additional points of use were received, processed and approved, a decrease of 14 from WY-09. One thousand four hundred twenty-three (1,423) 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

One hundred fifty-seven (157) major (i.e., more than a dozen) ground water-rights searches were conducted for realtors, water resource consultants, and other interested parties during WY-10. 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-10, 221 water rights were inspected by GW staff and adjudicated by the Board of Control, including 90 water rights at the November 2009 meeting, 131 at the May 2010 meeting, and 1 proof that was rejected at the November 2009 meeting. Additionally, 14 proofs were carried over at the November 2009 meeting and 12 proofs were carried over at the May 2010 meeting. In accordance with a Board decision during the November 2007 meeting, GW no longer presents new carryovers at Board meetings.

One hundred and eighty six (186) *Maps to Accompany Proof of Appropriation and Beneficial Use of Ground Water* were received in WY-10, representing 253 water rights to be inspected by GW staff (maps may depict more than one well or an enlargement of a permit).

Approximately 60% of the maps (111 of 186) were original submittals and 40% of the maps (75 of 186) were resubmittals of revised maps.

Existing Backlog

It is important to note that while the number of CBM permit applications has decreased, a tremendous backlog of work accumulated while GW devoted the bulk of their efforts to processing CBM applications in as timely a manner as possible. While current permit data is entered into e-Permit as it is received, the backlog of data that needs to be entered is enormous. Additionally, GW is still feeling the effects of deferred permit management activities and it is trying to address those activities with existing administrative support and technical staff. Additional technical support staff will be necessary to enter the following data in a timely fashion so it is accessible to the public in e-Permit.

<u>Data Entry (approximately 3,000 permit documents)</u>
These permit documents comprise cancellations, abandonments, statements of completion, assignments, beneficial use forms, amendments, etc. This information needs to be entered 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.

<u>2-year Reviews (approximately 1,500 permits)</u>
These are reviews of ground water-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 have 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 such that two of the technical staff members 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.

Expiration Letters (4,393 documents)
GW prepared and mailed 4,393 certified expiration letters in 2010, notifying applicants that their well permits were about to expire because the *Statement of Completion and Description of Well or Spring* form or *Beneficial Use of Ground Water* form had not been properly submitted. Approximately 5,146 letters were sent in 2009, 6,029 in 2008, 6,747 in 2007, 7,785 in 2006, and 7,941 in 2005. A significant fraction of these expiration letters (48%) involve CBM-related permits.

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 1,500 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 6,500 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.

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.

Control Areas

Laramie County Control Area

One (1) Laramie County Control Area Advisory Board meeting was held on January 13, 2010 in WY-10. No Laramie County Control Area Advisory Board elections were conducted in WY-10. Six (6) applications were received during WY-10:

- T.F. No. U.W. 42-6-58, 2nd Enl. Marvin Anderson No. 2 Well, Champ, LLC/Bella Farms, LLC. This enlargement is for supplying water to hog and aquaculture facilities for backup purposes only. Status: Advertised and approved in WY 2010.

- T.F. No. U.W. 42-3-74, Duello 2010, David A. Duello. This application is for a new 50-gpm well to supply water to a feedlot and a tree windbreak. Status: Advertised and approved in WY 2010.

- T.F. No. U.W. 42-3-154, Phillips #2, Brandon G. Phillips, This application is of a new 600-gpm well to irrigate 40 acres and to supply water for oil and gas well drilling in all of Goshen, Laramie and Platte Counties. Status: Under review.

- T.F. No. U.W. 42-2-157, Enl. State 22 WSW #1, Rex Energy Rockies, LLC. This application is for an enlargement for additional use, points of use, yield and volumetric quantity to provide water to drill two oil and gas wells located in the LCCA. Status: Under review.

- T.F. No. U.W. 42-3-168, Ruppert Irrigation Well #1, Mark & Julia Ruppert. This application is for a new 750-gpm well to irrigate 120 acres and to supply water for oil and gas well drilling within all of Goshen, Laramie, and Platte Counties. Status: Under review.

- T.F. No. U.W. 42-8-183, Torrie #1, 4 Quarters Land and Livestock, LLC. This enlargement application is for additional use, area of use and total volumetric quantity. The enlargement is to provide water for oil and gas well completion, fire protection, road construction, and other construction-related purposes in Laramie and Albany Counties. Status: Under review.

The following applications were received and advertised during WY-09. The applications were approved during WY-10:

- Permit No. U.W. 192019, Rollar #9, Rollar, Inc. This well will provide water to Laramie County Fire District #2 in case of a fire in rural areas and will be used to fill water for trucks for a construction business.

- Permit No. U.W. 192020, Judy #1 Well, Donald L. Judy & Retta M. Judy. This application is to permit the "relocated" irrigation well drilled for the relocation of the Hutchinson No. 1 Well for the Irrigation of 144.9 acres at 350 gpm.

One (1) new Board of Control petition was received in WY-09 and advertised and granted in WY-10:

- Board of Control Petition Docket No. I-U-2010-1-5, Kenneth F. Macy; Petition for change in place of use for the William Macy No. 1 Well, Statement of Claim No. 134.

Platte County Control Area

Two (2) Platte County Control Area Advisory Board meetings were held on December 10 2009 and on April 20, 2010. No Platte County Control Area Advisory Board elections were held in WY-10. Five Applications (5) applications were received in the Platte County Control Area during WY-10:

- T.F. No. U.W. 42-7-117; 2nd. Enl. Riley No. 1, Keith Ockinga. This enlargement application is for instantaneous yield of water only to irrigate a total of 335.8 acres.

- T.F. No. U.W. 42-8-143, Enl. Beach #1, Wyoming State Parks. This enlargement application is for an additional 20 gpm and to provide water to an additional 15 hydrants located in a campground at various points of use.

- T.F. No.U.W. 42-9-153, Energy Park No. 1, Basin Electric Power Cooperative. This application is for a new 25 gpm well to be used as potable and sanitary supply in a research and development building, maintenance purposes, and for processing coal fines to an alternate structure.

- T.F. No. U.W. 42-5-154, Lauck Lot 1, Dennis Lauck. This application is for a new 25 gpm well to provide water to a feed lot.

- T.F. No. U.W. 42-6-154, Lauck Lot #2, Dennis Lauck. This application is for a new 25 gpm well to provide water to a feed lot.

The following four applications were approved during WY-10:

- Permit No. U.W. 191890; Byers 4; Gary E. Byers.
- Permit No. U.W. 191905; Enl. Tom Preuit No. 10 Well, Tom Preuit.
- Permit No. U.W. 192091; Enl. Cowell No. 1 Well; Daryl Tiltrum & Casey Tiltrum

- Permit No. U.W. 193034; South Johnson Irrigation; Jack E. Johnson

The following applications were received and advertised prior to WY-10. However, they remain in pending status for the reasons noted (Irrigation Use unless otherwise noted):

- T.F. No. U.W. 36-8-315; Platte County School District (Miscellaneous Use); application was protested; hearing was scheduled for March 2, 2005; received notice from both parties stating they wished to postpone the hearing as they were in negotiations to resolve the conflict. No further information was received in WY-10.

- T.F. No. U.W. 40-4-65, 2nd Enl. Hardy #1; von Forell Herefords (Miscellaneous Use); Mitigation issues and the Advisory Board recommended to table this application until the mitigation issues are resolved at the January 8, 2008 Board meeting.

- T.F. No. U.W. 40-5-65, 2nd Enl. Hardy #2; von Forell Herefords (Miscellaneous Use); Mitigation issues and the Advisory Board recommended to table this application until the mitigation issues are resolved at the January 8, 2008 Board meeting.

- T.F. No. U.W. 40-10-280; Angus No. 2; Juan & Joni Reyes (Miscellaneous Use): Advisory Board recommended approval to the State Engineer at the January 8, 2008 board meeting. Application is pending due to mitigation issues.

- T.F. No. U.W. 41-4-119; 2nd Enl. David #1; Jo Anne Reffalt; Advisory Board recommended approval to the State Engineer at the November 20, 2008 board meeting. Application is pending due to mitigation issues.

- T.F. No. U.W. 41-2-382, McGuire Irr. #1; Thomas M. McGuire; Advisory Board recommended approval to the State Engineer at the December 10, 2009 board meeting. Application is pending due to mitigation issues.

One (1) Board of Control Petition was advertised and granted during WY-10:

- Board of Control Petition Docket # I-U-2010-2-1; 4 S Ranch: Petition for change location of the Dry Hole No. 1 Well, Permit No. U.W. 34162 request in change of use.

Prairie Center Control Area

The Prairie Center Control Area Advisory Board elections were held on July 8, 2010. Elected to serve on the Advisory Board until 2014, were John Ellis, Steve Roth and Chuck Berry. Prairie Center Control Area Advisory Board meetings were held on November 20, 2009 and on August 11, 2010, during WY-10.
One (1) Board of Control petition was received and advertised in WY-09.

- BOC Petition Docket I-U-2009-3-6; Elden and Tena Baldwin: Petition for Change in Location of the Anderson and Meyer No. 1 well, Permit No. U.W. 32605. The Board of Control voted to grant this petition at the February 2010 meeting.

One (1) new Board of Control petition was received and advertised in the Prairie Center Control Area in WY-10:

- Board of Control Petition Docket I-U-2010-1-2; Scott B. Roy: Petition for Change in Location of the Brott No. 2 Well and the Enl. Brott No. 2, Permit No. U.W. 28961 & U.W. 33398.

Current Control Area Issues

During WY10, no prehearings or hearings were held due to the protest of an application or a petition that was received in the State Engineer's Office. However, recent increases in requests for Temporary Water Use Agreements (TWUAs) located within Control Areas has caused the Wyoming State Engineer's Office to revisit what should be appropriate requirements for their issuance. Part of this concern stems from the receipt of agreements that purport to make use of a water right for a well that has scant or no recent historic use under its permit (typically irrigation). Wyoming Statutes state "Only that portion of a water right so acquired which has been consumptively used under the historic use made of the water right, maybe diverted by a temporary user." Other conditions of water right transfers that must be considered are the determination of how the TWUA is offset by a reduction in use at the source well, and the effects of transferring a right that ostensibly sees seasonal (irrigation season) use only.

Based on the recent volume of Miscellaneous Use applications to divert water on a temporary basis, or serve to enlarge an existing well for temporary use within Ground Water Control Areas (GWCA), the SEO changed its policy on July 28, 2010, to require all Miscellaneous Use Applications to be considered by the GWCA Boards.

New Conditions and Limitations have been created for applications for Oil and Gas Well Drilling in Southeast Wyoming. The Conditions and Limitations were developed to address many of the problems that have been discovered while investigating water used under Temporary Water Use Agreements.

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. However, Wyoming Statutes specifically exclude stock and domestic wells with yields less than 25 gpm from GWCA oversight.

Outreach

GW's time and resources were also spent attending public meetings, making presentations, coordinating with other regulatory agencies, reviewing and providing comments on Environmental Impact Statement (EIS) and Environmental Assessment (EA) documents, reviewing water

management and usage proposals, investigating ground water supply problems, installing and maintaining monitoring wells, and fulfilling information requests related to CBM development. GW staff presented at the following venues:

- Wyoming Water Well Association annual convention, Casper (January 27-29, 2010);
- Wyoming Water Well Association spring forum, Casper (May 21, 2010); and
- Wyoming Rural Water Association round table discussion, Gillette (September 21, 2010).

Modified North Platte Decree Reporting

During WY-10, GW continued to report monthly to the NPDC on both applications received, and permits approved, for Irrigation use permits within Wheatland Irrigation District. GW also reported Industrial and Municipal use permits within the remainder of the Basin that are subject to the provisions of the Modified North Platte Decree, including:

- one (1) application for a new irrigation use permit within the Wheatland Irrigation District was reported.

- two (2) applications for municipal use permits were reported.

- sixteen (16) applications for industrial use permits were reported.

One (1) irrigation use permit within Wheatland Irrigation District, Two (2) permits for municipal use, and fifteen (15) permits for industrial use were subsequently reported as approved permits.

The Ground Water Division also reported the annual pumpage of ground water under 52 irrigation use permits within the Wheatland Irrigation District to the NPDC during WY-10.

Coalbed Methane

The volume of Coal Bed Methane (CBM) exploration and production permit applications has remained lower during WY-10. The SEO received 747 CBM applications during WY-10. The following table provides a comparison of SEO GW permits approved per water year.

Annual Report Year	Total Applications	Number of Companies
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-10, the economy, lawsuits, and tighter water discharge requirements greatly decreased the number of traditional CBM applications received. It appears that the region's CBM operators are slowed by low gas prices. The Wyoming vs. Montana federal lawsuit over new Montana water-quality standards affecting the Tongue and Powder rivers is also believed to be a cause for the application decline. During WY-10, 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 total CBM application count.

Although staff time needed to process CBM applications has decreased proportionately to the amount of applications being received, GW has commenced new CBM permit-related activities. GW continued activities in WY-10 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. The most recently completed action in the Powder River Basin targeted 395 wells and 18 operators. In this effort, 54 wells were plugged and abandoned or were pending plugging and abandoning, 137 permits were suspended, 76 were cancelled, and 164 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 SEO well permits should remain in good standing.

On May 10, 2010, the CBM Conditions & Limitations that are attached to each permit were restructured to include correct and updated 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 SEO 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: direct surface discharge, treatment with 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 State Engineer's Office. The Ground Water Division of the State Engineer's Office maintains a network of approximately 260 active observation wells throughout the state and a number of inactive observation wells pending rehabilitation or abandonment. Currently Four (4) Ground Water staff members are responsible for the observation well network. Field operations are being handled by 3 new staff in WY-10, data reduction and data transfer for USGS cooperative programs is handled by one staff member.

WY-10 has seen continued improvement to the ground water-observation well network and data-collection efforts of the Ground Water Division. This includes continued development of a quality control and quality assurance program for the 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. Work began in WY 2009 and continued in WY2010 to facilitate the transition from legacy software to the newly updated AQUARIUS 2.7 Standard Edition Time series data reduction software package being used for Surface water record processing and data warehousing. This effort will continue in WY 2011.

WY-10 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

The GTW-3 well continues to support projects in the Thermopolis area related to the Hot Spring flow and impacts that ground water development may have on that geologic feature. Site maintenance and data collection activities are conducted by the SEO, data review and publication is done by USGS personnel. The GTW-1 observation well continues to have down-hole mechanical problems; a video log was run by SEO GW personnel During WY2010. Evaluation and recommendation on rehabilitation or abandonment is in progress.

Albany County Casper Formation Observation Wells

One Cooperative Program and one SEO well are installed in the Laramie 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 for ground water levels.

Two wells, Laramie County #15 and CC Meier (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.

Additional locking well covers have been installed on monitor wells in Laramie County, these well covers will help to alleviate entrance of material in wells that do not have permanent well shelters and equipment installed.

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 (4) 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-10. One well was removed from this network to bring it online as a production well for the town of Moorcroft.

Data for wells in the Niobrara County area were used to support a Wyoming Water Development Commission project for ground water resources and ground water management in that area. The Lusk Area Ground Water Study will be discussed in further detail under separate heading.

Gillette Area Observation and Subdivision Wells

These wells continue to be a source of information related to ground water developments within Campbell County and the City of Gillette. The BTOP #8-32 4975 well was turned over to the USDI –BLM, Buffalo Field office and has been removed from the network, their plan is to reequip the well and return to active monitoring status. One well, G-Mon-7, remains inactive and in need of rehabilitation, abandonment, and/or relocation. All wells with recording equipment in group have solar panels and charge controllers installed, and should insure adequate equipment operation with less employee visits.

Data from observation wells and active subdivision production wells in this area were used in WY2010 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.

Coal Bed Methane Observation Wells

Although CBM 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, and provided to Wyoming Geological.

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

The Cooperative data program between the SEO and USGS continued in WY2010. Work on a guidance document on the use of different types of calibration measurement and recording equipment continues. Based on a review of site criteria and data quality, six (6) cooperative sites remain in the cooperative program budget that have not been assigned to actual facilities for data collection, analysis, and publication.

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 and resulted in the evaluation of an additional monitor well in WY2010. Further evaluation will occur in WY 2011 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 support to 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-11.

Current Ground Water 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 ground water 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 ground water 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 ground water and surface water appropriators.

GW released a Request for Proposal in May 2009. During June 2010, the Division retained Hinckley Consulting to conduct the Horse Creek Hydrogeologic Study. GW expects draft reports in January or February 2011, with final reports to be generated in late March 2011.

Water Hauling Activities Related to Oil and Gas Activities in the Laramie County Ground Water Control Area

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 State Engineer's Office 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 the target formation and opening fissures to improve 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 ground water 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 ground water management districts, are also located in southeast Wyoming. The establishment of ground water control areas was largely based on diminishing availability of the ground water resource and potential impacts to existing appropriators.

Temporary Water Use Agreements

Based on the need to obtain water locally for oil and gas-related activities, the agency prepared several policies and guidances related to Temporary Water Use Agreements for general distribution and posting on the agency's website:

- Issuance of Temporary Water Use Agreements (TWUAs) in Ground Water Control Areas (February 12, 2010);
- Control Area Advisory Board Review for Miscellaneous-Use Applications in Ground Water Control Areas (July 28, 2010);
- Issuance of Temporary Water Use Agreements (TWUAs) Outside the Boundaries of Ground Water Control Areas in Southeast Wyoming (September 23, 2010); and
- Guidance: Obtaining Temporary Water Supplies (August 2, 2010).

The overall goal of issuing a TWUA is to minimize any impacts to the ground water resource by offsetting new withdrawals of ground water with the elimination of water use on crops (or other recognized beneficial use) for a period of one to two years via the Temporary Water Use Agreements. Consequently, water used for oil and gas-related activities should not impact existing appropriators in the Control Area.

Enforcement Activities

New conditions attached to TWUAs now allow Agency staff to access the well and collect meter readings to verify production from the well. A second new condition attached to the TWUAs requires not only metering and reporting of production from the well, but also how much of the water is used out of state. 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, Ground Water Division staff routinely conduct field inspections of both permitted and unpermitted points of diversion. To-date, those inspections have resulted in the following actions:

- The Town of Burns received an August 10, 2010 request to cease and desist unauthorized use of municipal water, including the sale of drinking quality water for oil and gas-related activities, a request with which they promptly cooperated.
- September 9 – subsequent to a GW staff site visit, Rodney Sharpe voluntarily disconnected a 2-inch HDPE pipe that was providing water directly to a nearby oil drilling rig.
- 4 Quarters Land & Livestock, LLC received a Notice of Violation and Order to Cease and Desist on September 16, 2010 for unauthorized use of water from the Torrie #1 well.
- Jon Ware received a Notice of Violation and Order to Cease and Desist on September 21, 2010 after providing water for oil and gas–related activities, an unauthorized use, subsequent to the termination of his Temporary Water Use Agreement.
- The Town of Pine Bluffs received a September 29, 2010 an action request to immediately cease all unauthorized use of municipal water by the Town of Pine Bluffs, including the sale of drinking quality water for oil and gas-related activities.

GW staff has also been instrumental in establishing an interagency network with the Wyoming Highway Patrol, Laramie County Sherriff's Office, Department of Agriculture, Department of Environmental Quality, and the Internal Revenue Service. Together, these agencies have conducted four commercial vehicle enforcement team check points within Laramie County which lead to four investigations of unauthorized water use.

Hot Springs Area of Concern

Hot Springs County 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 had discussions with the County Commissioners of 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 State Engineer's Office concerning the approval and or denial of an application. In WY-10 four (4) water well applications located within the Hot Springs Area of Concern were received. The

applications (U.W. 192750, Bansemer, U.W. 193334, Brewski 1, U.W. 193359, Anderson Home 721 Big Horn, U.W. 193852, Jared Nichols Water Well, were approved to permit status.

Industrial Siting Projects

Previous Annual Reports have outlined 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-10, there were no projects initiated which required the State Engineer to prepare a Water Supply and Water Yield Analysis.

During WY-08, the Industrial Siting Administration began requiring project proponents to consult with the State Engineer to identify any concerns related to the potential water sources for the projects which could result in significant delays in the issuance of State Engineer 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.

During WY-10, GW staff met with, and provided comment to, the proponents of four (4) different Industrial Siting projects. These projects were primarily "wind farms", where numerous large turbines are installed on a site and used to convert wind energy into electricity.

The Industrial Siting Administration indicates there are several other imminent projects which will either require the preparation of a Water Supply and Water Yield Analysis, or for which the State Engineer will be expected to identify any concerns with the potential water sources for the project.

Cumulative Hydrologic Impact Assessments (CHIAs)

GW staff reviewed the following Cumulative Hydrologic Impact Assessments (CHIAs) in WY-10, at the request of the Wyoming Department of Environmental Quality – Land Quality Division:

- Cumulative Hydrological Impact Assessment of Coal Mining in the Northern Powder River Basin, Wyoming (WDEQ-CHIA-25)

Water Well Minimum Construction Standards

With the addition of new staff in WY-08, headway was finally made in promulgating new Water Well Minimum Construction Standards for private water supply wells (construction standards for public water supply wells are under the jurisdiction of the Wyoming Department of Environmental Quality). Advances in water well construction technology, water well construction materials and a general awareness concerning waterborne disease and water quality characteristics dictated the revisions.

On August 2, 2009, the Wyoming State Engineer's Office (SEO) issued a Notice of Intent to Adopt Rules which provided a comment period from August 2 through September 16, 2009. During this public comment period, 214 comments were received from 12 separate commentors.

One set of comments was signed by 30 individuals. On September 24, 2009, a public hearing was also held to facilitate comments. This hearing was hosted in Cheyenne with remote video conference sites in Cody, Rock Springs, and Gillette. During the hearing, 18 individuals provided comments which resulted in 71 identifiable comments. Many of these comments were duplicates of those comments received during the written comment period.

On November 30, 2009, the SEO issued a response to all written and oral comments. As a result of the comment period, the SEO modified the proposed minimum construction standards. The SEO estimates that the new rules accommodate 90-95% of the comments and concerns regarding the first draft. Because the changes were extensive, the SEO decided to release the draft rules for a second round of public comment.

On December 8, 2009, the SEO issued a second Notice of Intent to Adopt Rules which provided a comment period from December 9, 2009 through January 22, 2010. During this second comment period, 3 sets of comments were received which resulted in 8 identifiable comments. Of these commenters, one did not provide any actual comments, but instead supported the proposed rules as drafted.

The proposed rules were modified for grammatical errors only and were adopted by the State Engineer on February 3, 2010. The final rules package was delivered to the Attorney General's Office, the Legislative Service Office, and the Secretary of State on February 4, 2010. The rules were signed by Governor Dave Freudenthal on April 5, 2010, and were filed with the Secretary of State on April 6, 2010.

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-11.

Ground Water Management Strategy

As noted in the "Objectives" portion of this report, GW's responsibilities include protecting the State's ground water 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 ground water management issues facing the SEO, the need for the SEO to take a proactive stance relative to ground water management, and the need to develop the management tools necessary to effectively manage Wyoming's ground water resources. Finding the time and resources to launch such an ambitious project, on top of GW's statutorily mandated duties, while enduring staff and budget cuts, are issues with which GW struggles.

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 Board of Control on policies affecting ground water – assistance/advice should consider both the interests of ground water users and the general public;
- Assist/advise state engineer and superintendents in solving ground water 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 ground water users within the Division relative to the State Engineer's and Board of Control's policies and procedures which affect the use of ground water.

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 recent 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 may present legislation repealing W.S. 41-3-908 which created the Advisory Committees.

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.

A second technical staff position, vacated when a GW staff member accepted upgraded position in the Board of Control on September 30, 2010, remains open until a similar position reclassification is approved for GW.

New Addition

Bobby Johnson accepted an Engineering and Natural Resources Technician 09 position on January 18, 2010. Bobby was previously employed as a Geologist for the Wyoming Department of Transportation. Since Spring 2010, approximately half of Bobby's time has been spent enforcing Temporary Water Use Agreements and verifying compliance in the field.

Moved On

Cheryl Verplancke, Engineering and Natural Resources Technician 09, resigned from GW on October 30, 2009, to accept a position with the Board of Control.

Jedadiah Rockweiler, Engineering and Natural Resources Technician 09, resigned from GW on September 30, 2010, to accept a position with the Board of Control.

COOPERATIVE PROGRAMS SECTION

By

Mike Ebsen, Cooperative Programs Coordinator

The Cooperative Programs Section coordinates three 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 Surface and Ground Water Data Program is to provide the State Engineer, other state, local, and federal agencies, and all other water users with quality, legally acceptable, hydrologic information for use in crop and other water-use planning. This includes regulation, compact administration, and the technical analyses required in water related litigation. The program also aids in flood plain planning and flood warning, water quality monitoring, other related activities. Continued involvement in this investigation and surveillance activity allows the State Engineer to more effectively address current state priorities as well as gather baseline information as issues evolve.

2. 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.

3. 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.

Surface and Ground water Data Program

Accomplishments

A significant portion of the funding for this Program has historically been provided through cost share agreements between the State Engineer and other entities, including the United States Geological Survey (USGS), the United States Bureau of Reclamation (USBR), the United States Natural Resources Conservation Service (NRCS), and the United States Bureau of Land Management (BLM), as well as various State, County and Local entities. An open and cordial line of communication remains a noteworthy accomplishment in and of itself.

Cooperative Stream Gage Activities

Accomplishments involving SEO main office and field personnel working in the surface water data collection area include the day-to-day operation, maintenance and/or monitoring of a multitude of administrative data stations and sites, including 53 surface-water stream-gage sites currently being operated in the statewide USGS Wyoming District cooperative network. Other agency and private sector cooperators also assist in this effort. Examples have included the Basin Electric Power Cooperative, which assisted in the funding of stream-flow data collection on the Laramie River near Grayrocks Reservoir. Internet access to these cooperative-data products is available at http://waterdata.usgs.gov/nwis/sw. The 2010 water year was again busy for State Engineer field staff; their efforts are truly appreciated and are acknowledged here.

Activities include regular measurements at the various sites, and communicating essential information to appropriate parties as the season progresses. Detailed stream-flow, ditch-diversion, and reservoir-stage records are gathered, analyzed, and computed. Reconnaissance, safety inspections, and other work are performed. Water use data are collected, assembled, and transmitted for inclusion in the records.

Maintenance around the state ranges from repairs resulting from the acts of vandals; to the acts of Mother Nature and Father Time. Worn equipment or instrumentation components are repaired or replaced. Shelters are painted and patched, walkways and cableways are tested and repaired, and riprap is placed around gage houses, stream banks and damaged artificial controls

Other Cooperative Gage-Upgrade Activities

There are efforts on the Bear River by State Engineer staff in cooperation with the U. S. Bureau of Reclamation – Provo Office (USBR - Pacific Northwest Region), to install real-time telemetry

at canal diversion sites along this enclosed basin, interstate river system. This system ultimately empties into the Great Salt Lake; further information and data products can be viewed at the following web location: http://bearriverbasin.org/

Another upgrade effort is the Green River decision support system, which involves State Engineer cooperation with the Wyoming Water Development Commission. The level one feasibility study is being conducted by Leonard Rice Engineers and will provide recommendations and funding options (including how these data products will ultimately be made available) with a final report expected in late 2011. The Interstate Streams Section – Colorado River Coordinator has been the SEO Liaison for this project.

Bear River Compact Stream-Gage Activities

The State Engineer continues to participate in the surveillance of the water resources of the Bear River basin in the states of Utah, Idaho, and Wyoming through the Bear River Commission, as provided for in the Bear River Compact. Utah and Idaho also participate at the same funding level as Wyoming for their portion of this activity, which is handled through the U.S. Geological Survey's Utah Water Science Center.

Yellowstone River Compact Stream Gage Activities

The State Engineer continues to participate in the water resource surveillance for the Yellowstone River basin in the states of Montana and Wyoming as provided by the Yellowstone River Compact. Montana also participates at the same funding level as Wyoming for their portion of this activity which is handled through the U.S. Geological Survey's Montana Water Science Center.

Belle Fourche River Compact Stream Gage Activities

The State Engineer continues to participate in the surveillance of the water resources of the Belle Fourche River basin, as provided by the Belle Fourche River Compact. South Dakota also participates at the same funding level as Wyoming for their portion of this activity, which is handled through the U.S. Geological Survey's South Dakota Water Science Center.

Monitor Well Measurement Activities

Accomplishments involving State Engineer personnel in the ground water data area include the day-to-day operation, maintenance and/or monitoring of the 59 observation wells in the US Geological Survey cooperative network (as well as 213 State Engineer sites throughout the state). Activities include repairing or replacing worn equipment or instrumentation components. Many of these wells are equipped with float driven digital water-level recorders. However, some wells, including several artesian wells, are equipped with pressure-sensing transducers and electronic-data recorders. The remaining wells are measured periodically using a steel drop tape or airline systems. These data will soon be posted on the SEO web site. More detailed information on this activity can be located in the Ground Water Section of this report.

Other Data Activities

Other surveillance and investigation activities are conducted solely by State Engineer personnel for various administrative purposes. One noteworthy undertaking (that carries similar ongoing equipment, maintenance, and safety uncertainties discussed later) is the SEO Geostationary Operational Environmental Satellites (GOES) data network.

Although beyond the scope of the multi-participant cooperative activities outlined thus far, these independent State Engineer efforts also provide compiled data on stream flow, reservoir storage, and river diversions. One example of these compilations is the Hydrographers' Annual Report series.

Ultimately, it is the intent of the Agency to post all surface water and ground water administrative data on a web-based server for public access and use. Currently available data products, as well as web-page layout and structure, may be viewed at the following web location: http://seo-vmaqr.seodmz.state.wy.us/WDPortal/default.aspx

Areal Study Activities

The State Engineer and the U.S. Geological Survey have a long history of cooperation which has provided an extensive list of water-resource investigation products. These products catalog Wyoming's water resources on basin-wide, county-wide, or more local scales.

Many hydrogeologic investigations have been conducted to characterize the physical and hydraulic properties of the High Plains aquifer in Laramie County. Surprisingly, very few wells drilled in Laramie County have detailed quantitative descriptions of lithology or quantitative characterization of the physical and chemical properties of the geologic units comprising the aquifer. Ground water-recharge data for southeast Wyoming are also severely lacking. With the exception of estimates by Morgan (1949), very little quantitative information is available, and most available information consists of estimates from large regional studies by the U.S. Geological Survey. Additional information describing ground water recharge to the High Plains aquifer in southeast Wyoming is much needed. Two county-specific potentiometric surfaces have been constructed in the past for the High Plains aquifer in Laramie County (Lowry and Crist, 1967; Crist, 1980). The most recent of these two county-specific potentiometric surfaces was constructed by the U.S. Geological Survey using water levels measured more than 30 years ago in March 1977 by U.S. Geological Survey and State Engineer Office staff (Crist, 1980). A new potentiometric surface is much needed and will give all interested parties an "up to date" understanding of current aquifer conditions.

During WY-08, GW contracted with the U.S. Geological Survey to investigate the "physical and chemical hydrogeologic characteristics and generalized potentiometric surface of the high plains aquifer in Laramie County, Wyoming." As part of this project, The U.S. Geological Survey plans to install boreholes in the High Plains aquifer. These boreholes will help fill data voids related to the physical and chemical properties of geologic units referenced above. Furthermore, the U.S. Geological Survey proposed to update the Laramie County High Plains aquifer potentiometric-surface map.

During May 2009, the U.S. Geological Survey completed two boreholes on the City of Cheyenne's Belvoir Ranch. Both boreholes were continuously cored. The team had significant difficulty coring the Ogallala Formation due to blockage of the core-barrel tip with cobbles; however, they had extremely good cutting recoveries. This material will provide detailed lithologic descriptions of the entire thickness of the Ogallala Formation. The U.S. Geological Survey had much better success coring the White River Formation. The U.S. Geological Survey estimates about 80% of the core was recovered. These samples should provide a detailed description of the White River Formation and likely represents the first nearly complete White River Formation core recovered in the Cheyenne area. The U.S. Geological Survey also hopes to conduct chemical analysis on the recovered core in order to assess questions related to aquifer recharge. The boreholes were completed as shallow and deep ground water-monitoring wells and are approximately 122 and 226 feet deep, respectively.

Between March and May 2009, staff from the SEO and the U.S. Geological Survey jointly completed fieldwork on a Laramie County water-level gauging project. As part of the project, SEO and U.S. Geological Survey personnel visited 404 wells and were able to measure water levels in approximately 312. Data collected during this fieldwork will enable the U.S. Geological Survey to update the Laramie County High Plains aquifer potentiometric-surface map.

The GW Division anticipates receiving a final report from the U.S. Geological Survey summarizing the investigation of the physical and chemical hydrogeologic characteristics and generalized potentiometric surface of the high plains aquifer in Laramie County, Wyoming in WY-11.

Problem Areas and Recommendations

Demand for water and its proper administration continues to increase and the information to support informed water resource planning decisions often requires many years of records. Changes in water use as well as water use patterns, along with the resulting conflicts, continue to occur. Those involved in resolving these complex issues request increasingly sophisticated information, often on a real-time basis.

Compounding these concerns is the ever increasing annual operational costs associated with continuing to provide basic levels of data through these cooperative programs. A historic perspective of these funding factors is available in previous reports; however, several hard to quantify factors remain - one being the real value of the cost share dollars that are offered as matching funds, another being the trend toward increased State Engineer cost proportions.

One means of mitigating these data availability concerns has been to shift appropriate data collection sites between co-op and State Engineer program operation. The net result has been that SEO personnel are shouldering increasing portions of the data-acquisition work. This practice brings with it a new set of issues difficult to evaluate including Federal/State relations, site/component ownership and maintenance responsibilities, and liability concerns.

Upgrade activities in the Green River Basin mentioned earlier are one example of an attempt to moderate this increased workload with investment in automated equipment. The automation and/or the installation of over 100 stream and diversion measuring sites, five weather stations, and two energy flux towers will provide remote sensed estimates of basin wide evapotranspiration, and will be ultimately be available real-time. Details have been provided in the Interstate Streams portion of this and past reports.

Greater State Engineer data acquisition responsibilities bring increased equipment failure, site maintenance, and personnel safety concerns. It is increasingly difficult to keep such basic items as spare equipment on hand. To meet the increasing need to maintain, upgrade, and automate essential administrative sites in existing SEO and co-op data networks, an ongoing and expanded commitment of resources will be required.

Additionally, a statewide gage house and cableway inspection effort conducted recently revealed several safety and reliability concerns - outside of the instrumentation concerns discussed above. Methods to mitigate these type concerns include the use of un-manned suspension equipment on sites of concern.

Other problems, including damages associated with vandalism, remain an ongoing concern; but, damage tends to occur only at certain problem sites, and emerges as a component cost of doing this kind of work. Also, repair costs, as well as timely product repair and product support from instrumentation and software vendors, continues to be of concern; but, the solution may lie in selecting new instrumentation vendors when the opportunity to replace these gage components and software arises.

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 66 manually measured snow courses, and daily at the 82 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. The number of SNOTEL sites that measure snow depth was recently increased to 55. 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/or instrument several new sites throughout the state with SNOTEL capabilities. Four upgraded, and two new SNOTEL sites have all been instrumented and are up and running. Instrumentation costs have run from $25-30,000 per site. Assistance from State Engineer personnel is here noted and appreciated, for the help provided in their installation. 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

Plans are also moving ahead on another new SNOTEL to predict runoff in the upper Medicine Bow River, which is being funded through the local conservation district. Site selection will likely take place this winter after snow patterns have been observed and correlated with summer site access restraints. Permits from the Forrest Service have yet to be procured.

Any such proposal would also require data from an active main stem stream gage for calibration and prediction correlation. In a follow-up, the USGS confirmed that a site has been selected just downstream of the forest boundary on private property (Owen Wilson) and installation will

proceed this spring and summer. The Medicine Bow Conservation District has a grant to fund this gage through 2012. Collectively, these seven new sites will enhance data collection and improve stream flow prediction capabilities statewide.

Problem Areas and Recommendations

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.

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.

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. Of note are the four surveyors and two sleds the SEO provides for Saratoga's Medicine Bow and Sierra Madre runs. The original sleds had a lot of miles on them and have recently been replaced.

Field input and budgetary constraints collectively led to the conclusion that SEO staff could meet current snow surveyor obligations without the need for additional intensive employee training through the West-Wide Snow Survey Training School.

Additionally, Terry Gonzales, NRCS's Snow Survey Coordinator in the Casper Office, recently retired. Ken VonBuettner was hired to replace Terry, and is working hard to fill this void. The In-State refresher training, regularly scheduled in January of each year, did not occur in 2010.

SEO personnel and others, should recognize and focus on how changes in funding, personnel, and activities within other water data programs (i.e. stream gage discountenances) have and may continue to adversely impact related activities (such as stream flow predictions) in this and other programs. The State Engineer therefore must carefully weigh potential impacts, including impacts on related programs, in the resource allocation process.

Subdivision Review Program

Accomplishments involving Existing Water Rights

Wyoming Statute 18-5-306 (a) (xi) provides for the disposition of any water rights appurtenant to the lands involved in a proposed subdivision development prior to its approval by county

officials. Original State Engineer involvement under this statute began in 1980. Effective January 1, 2006, all in-depth reviews associated with this type of submittal have been turned over to the Board of Control Division of the State Engineers Office. However, it remains necessary to correlate this Board of Control Division activity with Ground Water Divisions activity associated with proposed subdivision water supply, to meet comprehensive Agency subdivision review obligations.

To meet this obligation, a total of 51 subdivision review submittals were logged and tracked during this report year (compared with 72 last report year). Of these submittals, 31 Board of Control Division water rights distribution plan review notifications are not currently associated with a corresponding Department of Environmental Quality proposed water supply review request.

Accomplishments involving Proposed Water Supplies

More recent State Engineer involvement under this statute, concerning the adequacy of a subdivision's proposed water supply, 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 the Ground Water Division's Cooperative Programs Section.

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 20 such reviews during this 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 are identified.

Based on the issues as identified in the DEQ submittal, and the SEO preliminary search results, appropriate water right actions are proposed. This may involve coordinating appropriate Surface Water Division, Ground Water Division, and/or Board of Control Division 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 individual responsible DEQ District Office. Wyoming is divided into four DEQ districts - the Northwest, Northeast, Southwest, and Southeast Districts.

Problem Areas and Recommendations

A review of the tracking process associated with the Agency's existing water right review obligations indicates that the number of reviews associated with this activity has declined. This has contributed to more timely subdivision reviews and a more manageable program workload.

Additionally, with the advent and implementation of the more recent subdivision water supply legislation, which is now the primary Ground Water Division involvement compliance appears to be improving. However, subdivisions continue to be approved by county officials before water right issues have been reviewed and resolved by the SEO. 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 water right concerns.

The program workload associated with subdivision water supply adequacy responsibilities has also declined, allowing other backlogs associated with other programs coordinated under this Section to again take precedence, as well as allowing resources to be devoted to other Ground Water Division priorities.

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, 2009 through September 30, 2010, which is referred to as Water Year (WY) 2010.

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 status 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 2009-2010 winter showed a near normal snow pack over the state. The reservoirs on the North Platte River were at moderate levels at the end of the 2009 irrigation season. In May and June, there were four large storms that nearly tripled the moisture at some Snotel sites. This led to flooding in the Little Wind River drainage and the North Platte drainage.

Categorized work submitted to the Surface Water Division during the period included: a) applications for permits - 657; b) petitions - 25; c) Temporary Water Agreements - 114; d) water rights information searches - 187. 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 657 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 2004 and continuing through WY 2010. The end-of-period backlog is 585 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
WY 04*	1610	1350	2531	19	17	102
05	1650	2321	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

*Represents a 15-month period: July 1, 2002 to September 30, 2003.

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. Seven instream flow applications were received during the period and no hearings were held.

COMPARISONS OF TYPES OF APPLICATIONS RECEIVED				
Category	WY2007	WY2008	WY2009	WY2010
Ditches/Pipelines	113	109	125	100
Enlargements	32	55	38	40
Reservoirs	329	294	221	193
Stock Reservoirs	553	344	322	210
Temporary Use	198	98	192	114
Instream Flow	0	0	0	7
Totals	1003	913	798	657

Petition Processing

The first table printed above included data on petitions submitted to 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 159 on hand. Many of these petitions are associated with cleaning up permits associated with correcting permits to reflect how reservoirs are being 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 reporting period, a total of 114 Water Agreements were received and approved. A comparison with previous years follows:

WY	Water Agreements
2005	140
2006	121
2007	179
2008	120
2009	106
2010	114

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 every 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.

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 2010, a total of 187 requests were answered requiring records searches. The following table shows the history in the numbers of requests received.

FY/WY	SEARCH REQUESTS
2004	86
2005	120
2006	95
2007	72
2008	122
2009	324
2010	187

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. 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. 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 since microfilming has ended. The permits and maps are also being scanned for the new e-permit system.

Upgraded Technology

The new e-permit system along with the new water rights data base has 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 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 for all State Engineer functions was sought from the legislature but was only approved for authorities within W.S. 41-4-501. This office will continue to develop new rules and regulations within those areas where legislative authority has been granted.

Sage Grouse Protection

In accordance with Executive Order 2010-4, 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 purposes during this reporting period. Permit Number 103 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 operation 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-seventh year of cloud seeding activities in cooperation with the University of Wyoming, Department of Atmospheric Sciences.

Permit No. 102 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. 104 & 106 were issued to Weather Modification, Inc. for seeding 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 fourth year for these projects.

SAFETY OF DAMS SECTION

by
John R. Barnes, P.E.
Administrator, 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; provided for penalties; and granted rule-making authority.

While a permit from the State Engineer is required for all dams, the Safety of Dams Law mainly 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.

Objectives

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

2. By conducting periodic safety inspections of existing facilities.

Accomplishments

During the past year, 5 applications for permits for new or enlarged jurisdictional size reservoirs were received and 11 plan reviews were completed with 10 permits being issued. The majority of these facilities are associated with storing water produced from coal bed natural gas (CBNG) activities. Construction was completed on 1 new Safety of Dams size facility. Additionally, repairs to 4 dams were approved and 3 projects were completed. One repair project is ongoing.

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 assure 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 Law (more than 20 feet high and/or impounding 50 acre-feet or more of water). A total of 240 dams were inspected in Water Year 2009-2010 and 313 are due for inspection in water year 2010-2011.

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.

Problem Areas

A continuing problem area concerns dams located on the Wind River Indian Reservation. Because of disputes over jurisdiction, we have problems obtaining timely information on the present conditions of dams (Washakie Dam in particular, a high hazard structure) on the reservation. We have received no information concerning the present condition of the seepage problem that was discovered when the reservoir was being filled after repairs were performed several years ago. We, therefore, do not know if this potentially serious problem has been corrected. The Bureau of Indian Affairs did not submit the plans for the work at Ray Lake for SOD review either.

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).

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. Four dam safety engineers attended the 2010 Association of State Dam Safety Officials annual conference. Four

field personnel attended Safety Evaluation of Existing Dams training presented by the U. S. Bureau of Reclamation in Denver.

During 2010, grant funds were also utilized to partner with eleven separate dam owners to prepare inundation maps for Emergency Action Plans. Dowl-HKM of Sheridan completed the inundation mapping for these dam owners. Through this process, the Safety of Dams Engineers met with the dam owners and local emergency responders to review Emergency Action Plans. Future grants will be used to continue this project for other dams.

In April 2010, the Safety of Dam section conducted a series of workshops for dam owners. Invitations were sent to the owner of each dam in the state. A series of two workshops were held, one in Buffalo, and one in Casper. Dam safety training was presented to 74 individuals. Response to the workshops was overwhelmingly positive. The costs of these workshops was eligible for FEMA grant funding as well. A third series of workshops will be conducted in 2011.

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, 2009 to September 30, 2010), the Board of Control Division received 204 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	30	16	46
DIVISION NO. 2	26	12	38
DIVISION NO. 3	38	24	62
DIVISION NO. 4	54	4	58
TOTAL	148	56	204

Final action was taken on 218 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 five (505) proofs of appropriation were approved by the Board of Control during this reporting period. Two hundred twenty three (223) or 44% of these proofs were for ground water rights (wells), and two hundred eighty two (282) or 56% were for surface water rights. In addition to these 505 proofs, 138 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 52 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 32 facilities or an increase of 30%.

During the reporting period, five hundred and ten (510) new certificates of appropriation or construction were issued as a result of adjudications, and two hundred and one (201) amended certificates of appropriation or construction were issued as a result of petitions, an increase of 266 certificates, or 60%.

Thirty five (35) water distribution plans and/or authorizations for detachment of water rights were received during this reporting period, a decrease of 6 plans and/or authorizations or a 17% decrease from the previous reporting period.

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. During the reporting period, proofs of appropriations also began being entered and tracked in e-Permit. e-Permit went "live" to the public in February 2010. The in-house use has allowed the Board of Control Division to pinpoint some of the areas where enhancements were truly needed to improve e-permit's functionality. A list of these items was maintained and the Board of Control was able to contact with Weston Solutions, Inc. to make improvements to e-permit.

In July 2010, the following enhancements to improve the functionality of e-permit for the Board of Control Division were uploaded to the production server:

- The ability to select other Water Right (WR) types for submittal of petitions. Previously, only Certificate Records could be selected; now all WR types can be selected.
- Historic data entry module. This module gave the Board of Control Division the ability to enter Certificate Records that did not migrate, were missing from the old database, were not entered into the old database before the migration of data or were created during the conversion from the old database to e-permit.
- The Certificate Record designations for Ground Water were changed from CR CU to CR UW to be more consistent with current nomenclature.
- The petition flow for well relocation petitions was modified to perform the same as the flow for Surface Water petitions.
- The ability for Superintendents to re-assign proofs was added.
- The preparation of proof reports was removed from e-permit.
- The removal of the tab for Hydrographer's Reports.

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, required that the Board of Control compile and edit revised tabulations of adjudicated water rights for all four (4) division of the State. There is a constant demand for these tabulations from engineers, land surveyors, government agencies and the public. These tabulations are also an important tool for regulation of the State's water. The Tabulations of Adjudicated Water Rights (Tab Book) are being worked on in e-permit, with a concentration of Division No. IV. Although the Board of Control received the above mentioned enhancements, there are still some problematic issues with production an accurate and complete Tab Book using e-permit; more enhancements are needed.

The accuracy of our data has always been an issue. In the old data base, we did not have strict data entry procedures, nor did we provide the proper training in some cases. When trying to migrate this data, writing rules for the migration became very problematic. This resulted in a data migration scenario that wasn't as successful as we would have liked. In preparation of Tab Books, this means that ALL data has to be verified. The amount of data we now capture in e-permit from each instrument has multiplied 10 fold. 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.

Wyoming is still recovering from a multi-year drought and, due to the drought; focus of the Board of Control was shifted from adjudication to water administration. As a result, there is a backlog of pending proofs.

Recommendations

For the proof backlog: The Board of Control needs to develop a unified plan to reduce the backlog of pending proofs. The plan should:

- Set priorities to complete the oldest proofs first; especially, those with funds already paid to the Agency;
- Once caught up, establish a maintenance plan to keep the proof current; no more than six (6) months old;
- Change the Board's policy of reviewing proofs twice per year; alternating from surface water to ground water. Establish a policy in which the Board reviews both surface and ground water proofs at every quarterly meeting, until the proof backlog is reduced significantly.

For Tab Books: To improve the production of Tab Books more e-permit enhancements are needed. The enhancements should include, but not be limited to, the following:

- The Tab Book report is created in a PDF format which cannot be edited, we need to be able to export the file for editing;
- Need to be able to reconcile territorial priority dates;
- Need the ability to enter a tributary sequence which includes the reservoir for secondary supply water rights;
- Need the ability to add hydrologicially connected Ground Water permits into the Surface Water portion on the Tab Book;
- Need to migrate Phase II Rights, Discrete Water Uses, Walton Rights and Tribal Award Rights to e-permit
- Once data clean-up is completed and draft copies of the report are reviewed, other issues may arise.

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 appropriation corrections, amendments, changes, etc., to e-permit;
- 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.

It is anticipated with this all-out effort of the Board of Control Staff that, over time, with the new e-permit rules in place our data integrity will increase. Once this effort has been completed, and with future e-permit enhancements, the production of Tab Books could occur at any interval, as all data would be up-to-date.

Regulations and Instructions

The Board of Control initiated the review of its existing rules that were promulgated in 2004. 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. During this reporting period, the Board held open for comment proposed amendments to the rules and held a public hearing. Several comments from the public were received at the hearing. During the next reporting period, the Board of Control will review the comments and determine if any additional changes are warranted before being submitted for adoption in 2011.

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 is under the jurisdiction of the Fifth Judicial District in Worland.

The staff continues to serve as 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 also provides technical 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. In the upcoming reporting period, the staff will coordinate the recordation of key decisions and decrees that specify land description and should be recorded in the appropriate county. We anticipate resolving the remaining objections and issues can be worked out between the parties and to let the unresolved issues move through litigation process in the future.

Phase I Decrees

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

The results of these Phase I decrees require correction and updates of state records, recording the "permanent rights" at county offices, and database modifications. A process for the final integration into the SEO records will be developed and made available to the agency along with training in the next biennium.

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 during the next biennium.

Phase III - 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 during this reporting period has been primarily of providing litigation support on the 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.

A total of 71 (seventy-one) Certificates of Appropriation for Surface Water permits issued from resultant from District Court Orders.

During this reporting period, the Big Horn adjudication staff transitioned to assuming the responsibility of the Board of Control's 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.

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. Numerous 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. The update of Attorney General restoration maps was completed during this reporting period. In addition, the Big Horn data was used in the update to the Water Planning efforts for the Water Development Commission.

Big Horn River Adjudication Website

The staff continued to coordinate the cooperative scanning project with the Wyoming Supreme Court. 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 and workshops. An education plan will be developed at the close of the Big Horn Adjudication to distribute the knowledge of decrees, Reserved rights and Walton rights. One step to integrate Walton right data into the new e-permit system was completed during this reporting period, but additional efforts for integration of the vast amount of decrees into the system will be critical to the searching of all water rights within Water Division 3. To supplement the public record about the various decrees, recording of specific decrees (that were designated by the parties) affecting the land descriptions will be recorded in the county offices in 2011.

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

The Missouri River Association of States and Tribes (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 members are concerned that the current authorities that guide the Corps of Engineer's management of the Missouri River don't adequately reflect the contemporary values of the basin. The group was a strong supporter of language that was added to the 2009 Omnibus Appropriations bill (Section 108) that provided funding to the Corps to look comprehensively at the Flood Control Act of 1944. This Section 108 study is now referred to as the Missouri River Authorized Purposes study (MRAPS). Taking a fresh look at the authorities for a basin as large as the Missouri is a precedent setting undertaking. The states hope to play a significant role in defining the parameters of this study as it could have long lasting, significant affects on the basin. Unfortunately, continued funding for the MRAPS is uncertain as the original funding for the effort was an add to the Corps budget by Sen. Dorgan from North Dakota. Sen. Dorgan has now retired from the Senate, and as the federal agencies are operating under continuing resolutions rather than new, congressionally passed budgets, the Corps headquarters will not allocate funds to MRAPS. The Corps is continuing to evaluate the comments received during the scoping meetings held during the summer of 2010. Three scoping

meetings were held in Wyoming. MoRAST did supply the Corps with a lengthy comment letter on the items that from the states' perspective were critical to be considered in a comprehensive basin study. The Osprey Group was retained by the Corps to conduct a Situation Analysis for MRAPS. The Osprey Group recommended an Executive Council to advise the Corps as the Study progresses. The Executive Council was to be made up of one Governor-appointed representative from each of the basin states. Many stakeholders in the basin felt this Council would not be inclusive enough in representing the diverse interests of the basin. MoRAST continues to strengthen its tribal participation. One Board of Directors meeting was held in Rapid City, SD in September, 2010. The number of tribes that can attend the meetings increases when we are in close proximity to the reservations in the Dakotas.

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. After a lengthy public process to develop the operating charter for the group, the inaugural meeting of the group was held on September 29-October 1, 2008 in St. Louis. The Committee is now meeting 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 methodology was adopted and a firm retained to select the independent reviewers at critical research stages. The Committee is beginning to make more substantive recommendations to the federal agencies and the need for every member to editorialize on every action has diminished. Wyoming hosted the group in November, 2009 in Cheyenne and again in July, 2010 in Sheridan.

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 was requested by the Corps of Engineers to be a cooperating agency in the development of the Environmental Impact Statement and Ecosystem Plan for the Missouri River. The Cooperating Agency Team met less often this reporting period, as much of the work was being completed by two work groups: one focusing on the terrestrial resources of the basin, and the other on the aquatic resources. These work groups consisted of staff level biologists from the state game and fish agencies in the basin. As the study at this time is focusing more heavily on the mainstem of the Missouri, no one from Wyoming served on these work groups. How the river miles that are now inundated by the big reservoir system will be handled in the study has been one area of contention. Particularly North Dakota feels that the reservoir system needs to be identified as "historical" and doesn't see the need to spend the time identifying what the attributes were of the river system prior to the construction of the reservoir system.

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. NPDC meets in the fall and spring every year. Mr. Patrick Tyrrell, Wyoming State Engineer, assumed the role of Chairman in 2010. The NPDC has formed several subcommittees to assist in fulfilling its duties under the Modified Decree: Ground Water Wells, By-Laws, Control Crest, Official Files, Finance, Consumptive Use, Replacement Water, and State Line Gage Study.

Wyoming performs the following tasks to comply with the North Platte Settlement Agreement 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 2010, the Consumptive Use Subcommittee, under contract with Riverside Technology, Inc., measured crop consumptive use of irrigated lands from satellite imagery using remote sensing. A final report detailing this project was submitted to the subcommittee. Discussion is ongoing involving evaluation of the report and determination of future actions.

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 Aqua Engineering to evaluate three measurement sites near the Nebraska-Wyoming state line. The final report identified some problem areas with the State Line gage, the Tri-State Canal ramp flume, the Passing Tri-State measurement site, and the available data to complete a mass balance of the study reach. One recommendation for the State Line gage included installing bendway weirs upstream of the control along the south bank of the river to decrease scour and stabilize the south bank and redirect flow to the center of the channel.

The subcommittee released a request for proposals for a feasibility study to determine the cost and requirements for installing bendway weirs upstream of the state line gage. The subcommittee is currently evaluating the submitted proposals and will select a company at a special NPDC meeting in 2011.

3. Wyoming replaces the depletions of the river's natural flow during "Trigger Days" caused by active ground water wells pumping for irrigation in the triangle area. Water Year 2010 was unique in that there was no administration on pump diversions and deliveries of natural flow occurred for the entire season. During water year 2010, no replacement water was 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 2010 does not carry over into the next water year.

4. For the 2009 irrigation season, Wyoming reported in a February 25, 2010 letter to the NPDC, that the intentionally irrigated acreage for the North Platte River basin above Guernsey Reservoir, exclusive of the Kendrick Project, was 204,138 acres and in the Lower Laramie River basin, exclusive of the Wheatland Irrigation District, was 28,469 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. Additionally, assessment is underway to determine the acreage split of the 226,000 acres above Guernsey Reservoir, which will be separated into acres above and acres below Pathfinder Reservoir.

5. For the 2009 irrigation season, Wyoming reported in a May 12, 2010 letter to the NPDC that the ten year calculated consumptive use of irrigation water in the North Platte basin upstream of Pathfinder Dam was 1,060,000 acre feet for 2000 through 2009. In addition, Wyoming reported the ten year calculated consumptive use total was 780,000 acre feet for the North Platte basin between Guernsey Reservoir and Pathfinder Dam.

6. From 2005 to 2010, Wyoming installed measuring devices and electronic monitoring equipment to track annual accruals at the eleven largest irrigation reservoirs storing water upstream of Pathfinder Reservoir. Work continues on the construction and maintenance of inflow and outflow structures to provide accurate measurements. Additional maintenance and improvements occurred at Kindt Reservoir. During 2010, the State Engineer's Office began the process of transferring the ownership of the measuring devices and associated buildings to the reservoir owners.

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 being 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 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 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 recover 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.

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 and third reports for Water Years 2008 and 2009, 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, 2011.

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 ground water 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. Wyoming filed their response to Montana's exceptions on June, 15, 2010. The brief filed by the United States generally supported the Wyoming position.

The Compact Commission decided to cut back to one formal meeting each year in the fall/early winter and then direct the Technical Committee to meet in the spring to discuss the water supply forecast, CBM development and other technical topics. The full Commission met on December 1, 2009 at Powell, WY. The Technical Committee met April 13, 2010 at Billings. The Committee developed a 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 Chair William Horak retired from his position at the USGS in June, 2010 and he will be replaced as Federal Chair by Mark Anderson, Director of the South Dakota Water Science Center. We will miss Bill's long history with the Commission and his knowledge of the basin and wish him the best in his retirement.

Federal legislation to authorize and fund the negotiated Crow Compact settlement was introduced by Montana Senators in July, 2008. As a member of the Senate Committee on Indian Affairs, Senator Barrasso was able to improve the bill with some protections for Wyoming. The Obama administration was concerned about the total cost of the settlement and negations occurred this reporting period between the Bureau of Reclamation, Office of Management and Budget and the Montana senators offices to reduce the total package by about $85 million. Reclamation recently testified that they would support a bill of this magnitude.

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 December 15, 2009 in Belle Fourche, SD. 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. The Crook County Irrigation District requested a meeting with the SEO to discuss the 10-90 split with South Dakota of natural flow water. The meeting was held June 17, 2010 to refine when Wyoming will impose regulation under provisions of the Belle Fourche Compact.

Niobrara River Basin

Nebraska and Wyoming have begun holding annual Niobrara compact meetings, this year on November 20, 2009 in Torrington. Wyoming had agreed to share the results of the ground water

study completed by Hinckley Consulting and a presentation was made, as well as sharing the data files associated with the report. Nebraska shared the progress of the research projects they have funded with the University of Nebraska for a hydrogeology framework for the Niobrara basin. Nebraska also applied for the basin study funds from Reclamation's WaterSMART program and the Niobrara basin was funded. Wyoming has been included on their technical group overseeing the development of the study. A states technical group was formed to further study Niobrara compact issues and that group met for the first time on April 14, 2010.

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

Hydrology

Below average streamflows occurred throughout much of the Colorado River Basin during water year 2010; accordingly, the unregulated water year 2010 inflow to Lake Powell was 8.76 million acre feet (maf), or 73 percent of the 30-year average (12.04 maf). Unregulated inflow during the past water year to Flaming Gorge, Blue Mesa, and Navajo Reservoirs was 60, 74, and 77 percent of average, respectively.

Precipitation[1] in the Upper Colorado River Basin was initially well below average in October and November 2009, was at or above average during the winter months of December through February and was again below average during the critical for snowpack accumulation spring months of March and April. On April 15, 2010, the overall basin wide water year cumulative precipitation was 84 percent of average. During the period from October through April the unregulated inflow to Lake Powell was in the range from 65 to 96 percent of average. Snowpack conditions unfortunately trended well below average in the Green River Basin during the winter months of water year 2010 with the peak snow water equivalent reaching only 65 percent of average. On April 1, 2010, the snow water equivalent was only 59 percent of average. The basin was classified as being in severe drought.

During the 2010 spring runoff season, inflows to Lake Powell began to increase in April as temperatures increased across the basin. By early June, inflows increased to more than 50,000 cubic feet per second (cfs). During the spring runoff period Lake Powell storage increased by 1.90 maf. The April through July unregulated inflow volume for Lake Powell was 5.80 maf which was only 73 percent of average based on the historic period from 1971 through 2000. Inflow to Lake Powell has been below average in nine of the past eleven water years (2000-2010). Although slightly above average inflows occurred in 2005 and 2008, drought conditions in the Colorado River Basin persist.

Provisional calculations of the natural flow for the Colorado River at Lees Ferry, Arizona, show that the average natural flow since water year 2000 (2000-2010 inclusively) is 12.0 maf. *This is the lowest eleven-year average in over 100 years of record keeping on the Colorado River*. The following table summarizes Colorado River Basin conditions during the past eleven years:

[1] 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 2010.

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

Over the past 11 years (2000 through 2010, inclusive), inflow to Lake Powell has been below the 30-year (1970-2000) average in all but two years (2005 and 2008).

Hydrologic conditions in water year 2010 in the Upper Green River Basin were significantly drier than average. The April through July inflow to Fontenelle Reservoir during water year 2010 was 0.488 maf, equal to 57 percent of average. Inflows to Fontenelle Reservoir have been below average for the past nine out of ten years, and, prior to 2009, inflow to Fontenelle Reservoir had been below average for ten consecutive years.

In October 2010, Lake Mead dropped to elevation 1082', an elevation that has not been seen since Lake Mead was originally filling. This equates to a storage content of slightly less than 10 maf, which is 39% of capacity (25.877 maf). Under the most probable hydrologic scenario, the initial operation tier for 2011 will be the upper elevation balancing tier, and Lake Mead could drop to elevation 1075' within the next year, which would trigger a shortage water supply condition being declared by the Secretary of the Interior pursuant to the Interim Shortage Guidelines promulgated in December 2007 with the assistance and support of the seven Colorado River Basin States.

Lake Powell is presently at elevation 3,629', which is 61 percent of its storage capacity of 24.322 maf. The equalization level for Lake Powell in 2011 is elevation 3,643', and there is a 50% chance of an April adjustment to the equalization tier occurring, depending on the upcoming hydrologic inflow into Lake Powell.

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 representing the four states in matters affecting the operation and administration of the Colorado River system. The Commission met on June 9th and 10th 2010 at the Little America Hotel in Cheyenne. The meeting began with a short address by Governor Dave Freudenthal, who noted that while Commission meets periodically in Wyoming, the previous meeting in Cheyenne was held in March 1972. The State Engineer was pleased to have the opportunity to host a celebration dinner honoring past Commission Chairman and Federal Representative, Dick Bratton, at the Senator's Restaurant at the Terry Bison Ranch on the evening of June 9th. Although Dick was unable to attend due to medical issues, speeches, congratulatory remarks and "roasting occurred *in absentia* was videotaped and sent to Dick, who was very appreciative of everyone's efforts.

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 have cooperatively worked on developing 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. While no curtailment has historically been needed and we are hopeful such a reckoning will not occur, 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.

Development of an Upper Colorado River Basin Fund Memorandum of Agreement

After several years of joint efforts, the Upper Division States and the Colorado River Energy Distributors Association (CREDA) provided a draft Memorandum of Agreement (MOA) to representatives of the U.S. Bureau of Reclamation and the Western Area Power Administration in early August to administratively alter the collection and distribution of hydroelectric power revenues. During an interim period through the end of FY2025, this agreement would: 1) eliminate the collection of power revenues beyond that amount needed to repay the costs of Colorado River Storage Project (CRSP) Act-authorized and constructed projects, and 2) create a methodology for collecting MOA Revenues by which the Upper Division States would receive additional funding from power revenues for CRSP operation, maintenance and replacement projects to be identified and prioritized by the States and facilitated by the U. S. Bureau of

Reclamation. The MOA is an interim agreement that will end on September 30, 2025 unless extended by mutual agreement of the parties. 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.

Legal analysis by the Wyoming Attorney General's Office's indicates the Governor of Wyoming is Wyoming's "legally constituted authority," who can, pursuant to the CRSP Act, agree to have revenues that would otherwise accrue into our Upper Colorado River Basin Fund apportionment spent in another state; appropriate briefings and coordination with the Governor continue to occur. At the time of this writing, approval of the agreement by the New Mexico Interstate Streams Commission and the Bureau of Reclamation is outstanding; CREDA, Western Area Power Administration, Colorado and Utah are ready to sign the agreement. This would be a very innovative and significant arrangement if it can get the rest of the way to fruition.

Under the MOA, each Upper Division State would determine the priority of projects within that state. The Non-Federal Parties would annually make recommendations on projects and activities to be funded by the MOA Revenues and Reclamation would expend the funds and/or complete the activities required to complete the projects. Examples of MOA Revenue-funded project categories that would be considered include repair and rehabilitation, as well as replacements, additions and extraordinary maintenance for the continued operation and maintenance of the CRSP initial units and participating projects; 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 would 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 would 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. For example, the biological opinion covering the Aspinall Unit will likely 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

An Easter morning earthquake in the Mexicali Valley in Mexico caused major canal and ditch damage impacting the ability to deliver water to 148,000 acres of irrigated land in April 2010. Unable to deliver a portion of its 1.5 million acre-foot allotment of Colorado River to its users, Mexico, through the Mexican Section of the International and Boundary Water Commission, has sought an interim international agreement with the United States that will adjust the delivery schedules for Mexico's allotted water for 2010 through 2013. A quantity of up to 260,000 acre-feet of water will remain in Lake Mead to be delivered after 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. The Bureau of Reclamation and the State Department have continuously been seeking the views of the representatives of the seven Colorado River Basin states during the ongoing negotiations.

The Easter 2010 earthquake and efforts to develop a short-term water storage and delivery arrangement come on top of already ongoing discussions involving the Department of the Interior and the seven Colorado River Basin states on how to better manage future shortages and meet future demands for water. Those discussions, which would result in agreements contained in another Minute to the 1944 Mexican Water Treaty, have included modeling to determine a course of operations that will benefit both countries in avoiding and minimizing shortages, using existing storage more efficiently and implementing potential efficiency, conservation and augmentation and shortage sharing projects.

On June 17, 2010, the American and Mexican Sections of the IBWC executed Minute 317, a new agreement to promote greater cooperation between the two countries to improve Colorado River management. The Minute notes the interest of the Commission in exploring potential projects that conserve water, minimize impacts of Colorado River shortage conditions and may generate additional volumes of water from new sources (e.g., desalination facilities). Minute 317 also notes interest in the potential involvement of Mexico in storing Mexican Colorado River water in U.S. storage facilities (i.e., the creation and storage of Intentionally Created Mexican Apportionment (ICMA)). Finally, the Minute describes a process for stakeholder participation through various Bi-national groups that have been created to explore potential areas of cooperation and to consider projects and initiatives of interest to both countries.

Interim Shortage Guidelines and Coordinated Reservoir Operations

Calendar year 2010 was the third year of operations under the Colorado River Lower Basin Shortage Guidelines and Coordinated Management Strategies for the Operations of Lake Powell and Lake Mead. The Record of Decision implementing these interim operational guidelines that will be in place through 2026 was signed by then Secretary of the Interior Kempthorne on December 13, 2007 at the annual conference of the Colorado River Water Users Association.

The coordinated reservoir operational guidelines now in place 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 new, 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 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, 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.

Reclamation's April 24-Month Study projected the end of water year elevation at Lake Powell to be below the 2009 Equalization Elevation of 3639 feet and the projected end of water year elevation at Lake Mead to be above elevation 1075 feet. Based on those determinations and the provisions of the Interim Guidelines, the annual release volume from Glen Canyon Dam was 8.23 million acre-feet during water year 2009.

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).

The Wyoming State Engineer's Office hosted the Colorado River Basin Salinity Control Forum, Advisory Council and Forum Work Group meetings in Cheyenne at Little America on June 2nd through June 4th 2010.

Section 2806 of the Food, Conservation and Energy Act of 2008 (PL 110-234, enacted May 2008) expressly authorized the Basin States Program to conduct salinity control activities. The source of funding for the newly authorized Program is the Upper Colorado Basin Fund and Lower Colorado River Basin Development Fund monies authorized to be used pursuant to Section 205(f) of the Colorado River Basin Salinity Control Act. These are up-front, cost-share

funds equal to 30 percent of the federal agency expenditures for salinity control. The newly-authorized Program contains a directive that the Secretary of the Interior consult with the Colorado River Basin Salinity Control Advisory Council in carrying out the Program's measures and associated works, mandating a greater role for the Advisory Council in making funding decisions about projects to reduce salinity from saline springs, leaking wells, irrigation sources, industrial sources, soil erosion on public and private land; and operation and maintenance of salinity control features; and studies, planning, and administration of salinity control activities. The Advisory Council has had substantive discussions about how it intends to engage the Bureau of Reclamation to assure that the consultation provisions of the new law are both timely and meaningful, and has written operating procedures under development.

At the direction of the State Engineer, we drafted a single source contractor justification document in August 2010 making the case that the Wyoming Water Development Office should be allowed to enter into a Cooperative Agreement with the U.S. Bureau of Reclamation (as opposed to there being a competitive bidding process) to administer Basin State Program salinity control funds and oversee construction of salt-load-reducing projects within Wyoming. After review of that justification statement by federal acquisition and federal contracting officials at the Denver Technical Center office of the USBR, a favorable response was obtained; thereafter a draft cooperative agreement was recently drafted and presented to the WWDO for their consideration and editing.

The Big Sandy Salinity Control area has continued to see investments being made to improve irrigation water management efficiency and decrease salt loading into the Green River. Phase One of the Eden Valley District Rehabilitation Project was completed in May 2009, using $1,508,000 provided by the Wyoming Legislature for the project matched with $1,688,000 of Basin States Parallel Program discretionary funding that allowed the District's E-19 and E-25 open ditch, unlined laterals to be put into a 36-inch diameter, ten mile long pipeline. The second phase of the project is underway; it is being funded with $6,580,000 of Bureau of Reclamation Basinwide Salinity Control Program funding and Wyoming Legislature (2009 Session) funding of $6,580,000. Phase Two is replacing four existing earth lined laterals (E-7, E-8, E-13 and West Side Laterals) with approximately 95,000 lineal feet of pipe ranging in size from 6" to 60" in diameter. The project will also include new turnout structures, lateral diversion structures with trash cleaning capabilities and a Supervisory Control and Data Acquisition (SCADA) system to control and monitor flows at the diversion headgates.

We have also been involved in an ad-hoc committee making recommendations to the Wyoming Water Development Commission and specifically to Steve Muth about scoping for the Level II Study on piping/rehabilitation of the Austin and Wall Canals and the Austin Reservoir – it is anticipated that the consultant selected to do the WWDC Level II study will be gathering information and filling out an application for the Bureau of Reclamation's Basinwide Salinity Control Program funding opportunity announcement that would be let in mid-2012. The opportunity to pipe these two rather long canals and accomplish a reduction in salt loading to the Blacks Fork River is being investigated.

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. Annual base funding activities, with the exception of annual operation and maintenance and monitoring activities, will expire after FY 2011 unless reauthorized by the Congress. This 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.

Senator Jeff Bingaman introduced S. 1453 to extend the programs' annual base funding authorization on July 14, 2009 with five cosponsors. A hearing on this bill was held by the Subcommittee on Water and Power, Senate Energy and Natural Resources Committee on July 23rd. Only one witness was requested to testify, Reclamation Commissioner Mike Connor, who supported the amendment. Representative John Salazar of Colorado introduced the House bill, H.R. 2288, on May 6, 2009 with 12 cosponsors (thus 13 of the 14 Members of the House delegations from Colorado, Utah, Wyoming and New Mexico are cosponsors of the bill). The House Resources Water and Power Subcommittee scheduled its hearing on the bill on September 22nd. Commissioner of Reclamation Mike Connor again testified in support of the House bill. Non-federal testimony was provided by Pat Tyrrell, Wyoming State Engineer; Leslie James, Executive Director of Colorado River Energy Distributors Association; and Terry Sullivan, The Nature Conservancy, and all supported passage of HR2288. Questions were raised at the hearing by members of the Subcommittee and written responses were submitted on October 2nd.

Since then, it has been determined by the Congressional Budget Office that the legislation is subject to the PAYGO rule that requires new spending not add to the Federal deficit – e.g., spending proposals must be either subject to appropriations, or if direct spending authority is proposed (as is the case with S. 1453 and H.R. 2288 which would extend authority to spend Upper Colorado Basin Fund revenues through 2023), those proposals must either be "budget neutral" or offset with savings derived from reducing existing spending This situation has serious implications for both recovery programs because important recovery activities such as non-native fish removal, stocking, and program management cannot be funded through the current authorization after 2011. Funding for those activities will need to come from appropriated funds if no other solution to the PAYGO obstacle is found during the second session of the 111th Congress.

The House Resources Committee amended the bill from an extension of direct spending authority (from Upper Colorado Basin Fund revenues) to discretionary/subject to appropriations authority based on PAYGO requirements. S.1453, the Senate companion bill, was also passed out of the Senate Energy and Natural Resources Committee on Dec. 16, 2009; it remains a simple extension of direct spending authority through the end of fiscal year 2023. H.R. 2288 was passed by the House of Representatives on May 18, 2010 by a vote of 264-122. The program participants are hopeful that an end of Congress omnibus public lands management bill will be enacted and that Senator

Bingaman will include S.1453 in that package; otherwise much more work in the new Congress in 2011 will be required to remedy our funding shortfall issues.

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, 2010. The group representing the two recovery programs held 35 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. We are working to address organizational shortcomings of the AMWG at the behest of the Assistant Secretary of the Interior for Water and Science. The U.S. Institute for Environmental Conflict Resolution (which is an independent federal government entity) is assisting the Charter Ad-hoc Group with its efforts, including an ongoing survey of all AMWG members and their alternates, Technical Work Group members and others.

In December 2009, Interior Secretary Salazar announced his intention to develop a High Flow Experimental Protocol (HFE Protocol) and to complete National Environmental Policy Act (NEPA) compliance so that Reclamation can make high flow experimental releases from Glen Canyon Dam when appropriate conditions exist. In June 2010, the Upper Colorado River Commission became a cooperating agency on the preparation of an Environmental Assessment. The Interstate Streams Division was able to assist the Commission with its review of the draft EA when the cooperators' draft of the document was released in December, 2010. Information from the three previous High Flow Experimental releases (also called Beach Habitat Building Flows or BHBFs in prior years) is supposed to be compiled into a synthesis report that purportedly will be released for review in December 2010. The Dept. of the Interior intends to complete the NEPA process by March 2011.

Colorado River Basin States Augmentation Work Group

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 is being conducted over a period of two years and will conclude in January 2012. This effort 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 – which, since 1999, has been quite bleak with the demands outstripping the available supply and consequently the important water supply mainstem reservoirs have continued to be drawn down.

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 GRBAG continues to meet three times per year; at each meeting the Interstate Streams Division presents updates and situation analyses on ongoing interstate activities and policy matters (which include each of the items addressed in this section of the Interstate Streams Division's report). We view providing information and public outreach with the members of the GRBAG as an integral purpose of those meetings. As reported elsewhere in this section of the annual report, the overdue update of the Green River Basin Water Plan was completed in 2010.

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) ground water, 6) administration/decision support tools, and 7) outreach. The 2008 Wyoming Legislature generously funded our FY09-10 budget exception request to allow a good start to the implementation of the proposed program. The majority of those funds were used to purchase and install instrumentation in the basin as well as hire a consultant to initiate work on a water rights mapping effort. In the FY11-12 budget (which began on 1 July, 2010), funds for continued instrumentation effort 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.

Below is a brief description of activities undertaken during Water Year 2010 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 CU Plan outlined the need for five new weather stations in the basin. Four stations were installed during 2010. These stations are located in irrigated areas of the New Fork drainage, the Upper Green drainage, Bridger Valley and Farson-Eden. A fifth site in the Little Snake Valley will be installed in 2011. All data from these weather stations are being QA/QC and served by High Plains Regional Climate Center (HPRCC) in Lincoln, NE. Data can be accessed via the HPRCC website (http://www.hprcc.unl.edu/awdn/).

The two smaller Campbell Scientific ET-107 weather stations installed in 2007 were operated through the 2010 growing season. At the end of the growing season these stations were removed to have the sensors recalibrated. In early 2011, the Ryegrass station will be replaced at the same Cottonwood Creek site, while the Robertson station will be moved to a location in the Henrys Fork drainage. The third ET-107 weather station that was installed at High Savery Reservoir in cooperation with the Wyoming Water Development Commission continues to operate and is maintained by WWDC.

The hydrology model component discussed in the CU Plan has been wrapped in to the Decision Support System (DSS) project being conducted by the WWDC. Additional details on this effort are included 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. Efforts undertaken jointly by this program and Division IV staff have been initiated to address this need.

During 2010, Division IV personnel spent considerable time with landowners and other water users providing technical assistance with the installation of the measurement devices that had been ordered in the previous year. Over 350 diversions in the basin have or will soon have new measurement devices (i.e. flumes) associated with them. Having flumes at these additional locations will aid in the spot measurement and continuous monitoring of diversions in the basin. Almost half of the sites will also be equipped with a continuous stage recorder and be linked into the real-time data network of the SEO.

The installation of monitoring, recording and telemetry equipment at diversion and stream sites continued during 2010. With the new fiscal year which started 1 July 2010, the budget for the ongoing Green River instrumentation and telemetry effort shifted from this program to the Division IV budget. As such, Division IV staff will now have the lead on this project. I will continue to provide support as needed to field personnel. The "Technical Services Agreement" between the SEO and the Bureau of Reclamation (Reclamation) that was initiated in 2009 was extended through 2012 and an additional $50,000 added to the contract. The agreement provides for support and assistance from Reclamation's water automation branch for our monitoring and telemetry efforts.

Reclamation discontinued downloading and posting hourly data from the Green River basin stations on their web-site. Bridger Valley stations were posting on the SEO's Aquarius system during the 2010 irrigation season. Hopefully, all Green River stations will be shown on the SEO site for 2011 and that these data can be made public. I can pull data from any site in the Green River basin to Cheyenne on an as needed basis. Finally, as a condition of our Federal Communication Commission radio license, we are required to report the status of our installation progress on an annual basis. This report was completed and submitted in October 2010.

In March we received the final report from the University of Wyoming (Department of Civil Engineering) study concerning consumptive use analysis efforts using remote sensed data. The project included the use of both Landsat and MODIS satellite imagery to estimate ET from irrigated lands in the basin during the 2009 growing season (essentially April through October). A field calibration component of this project also entailed the operation of the two energy flux towers installed in July 2008. Results of this work are outlined in the consumptive use data section below.

In cooperation with the North Platte Coordinator, we initiated a research project through the Office of Water Programs at the University of Wyoming. 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.*

This project is ongoing and seems to be moving along on schedule. The first part of the project will be completed in the spring 2011, with the final project set to wrap-up in the spring 2012.

Water Rights Attribution: Leonard Rice Engineers completed the Water Rights Mapping and Attributing project in January. The goal of this effort was to digitally map and attribute all the

water rights in the Green River basin, as well as identify lands that are actively irrigated. These work products included:

- ArcView GIS Project with associated geodatabases – Wyoming Water Rights Attribution Geodatabase (WyWRAG)
- Project Notebook which included all project notes, methodologies and electronic copies of project work products
- Report: *WyWRAG Users Documentation*
- Report: *WyWRAG Technical Documentation*
- Report: *Water Rights Permit Inventory*
- Report: *Guidelines for Future Basins*
- Hard Drive which contains electronic copies of all data utilized for the project

The framework of the final WyWRAG product is well done. The biggest 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 thing available at the time). That database was incomplete and not kept up to date. 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 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.

A summary of the information generated from WyWRAG is shown in the table below.

Permitted Irrigation Rights	**# of Permits**	**Permitted Acres**
Irrigation Permits Mapped	3,299	598,733
- Active permits[1]	2,777	546,024
- Inactive permits[2]	522	52,709
Pre-compact Permits[3]	2,527	500,501
- Active permits[1]	2,105	457,718
Actual Irrigated Acres (1997 – 2007)		**Irrigated Acres**
Dry Year	N/A	308,705
Wet Year	N/A	363,568
Maximum Extent	N/A	419,962

[1] – Permit area shows any amount of irrigation within its boundaries
[2] – Permit area shows no irrigation within its boundaries
[3] – Permits with a priority date on or before November 24, 1922

In addition to the mapping project described above, program personnel have been assessing how best to utilize the assortment of high quality imagery available for consumptive use purposes. This primary sources of imagery comes from the National Agriculture Imagery Program (NAIP; 2001, 2005, 2009 and proposed for 2011) and Landsat satellites. In 2010, we purchased ERDAS Imagine 2010 software has the primary tool for imagery assessment.

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. Standard practice has been to try and place measurement and recording devices at the inflow to a reservoir and on the reservoir itself. Currently, there are seven reservoirs which have or will soon have measurement devices on them. More reservoirs and inflows will be instrumented as funds allow.

Ground Water: 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 ground water information in the Green River and Little Snake River basins. This report is now essentially complete and will be included as part of the Final 2011 Green River Basin Plan. This work product serves as the basis for any needed ground water assessments as part of this program. When and if additional ground water 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".

One ongoing activity related to the development of tools is the Water Development Commission's "Green River DSS Feasibility Study" being conducted by Leonard Rice Engineers. The Colorado River Coordinator has been the SEO liaison for this project. The project was initiated to identify specific data and tools needed to develop a DSS for the basin, and ultimately lead to a better decision making process relative to the planning and management of the basins water resources. Leonard Rice Engineers has done a very good of coordinating with and involving numerous SEO personnel throughout the project. The final report should be completed by the end of 2010.

Interagency Coordination & Outreach: Coordination with other agencies as well as outreach to water users and others 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. With that in mind, we try and share data and general program information with whoever has a need or an interest. Some examples of interagency coordination and outreach activities engaged in during the past year include:

- Ongoing coordination with the Water Development Office – River Basin Planning staff on the Green River basin plan update and related matters

- Working with personnel from the Colorado River Basin Forecast Center on data exchange and other efforts which could be mutually beneficial
- Working with National Integrated Drought Information System group on the Upper Colorado Pilot Project
- Assisting the Bureau of Reclamation in updating Wyoming data inputs for their Colorado River Simulation System
- Made a presentation at the annual meeting of the Wyoming Water Development Association
- Talked to the Rock Springs Chamber of Commerce, Sweetwater County Commissioners, "Communities Protecting the Green River" and the Green River Chamber of Commerce

2009 Consumptive Use Estimates: Since over 80% of the consumptive use of water in the Green River basin is due to irrigation, the vast majority of time and resources of this program to date has focused on estimating and/or measuring agricultural uses. In early 2010, consumptive use parameters of irrigated lands were "calculated" based on 2009 growing season conditions. Estimates were made using three different methodologies, which included; 1) an energy balance approach based on the University of Idaho's METRIC model (Allen et al., 2007; conducted by University of Wyoming), 2) application of Colorado's State CU model using crop coefficients from Pochop (conducted by Leonard Rice Engineers) and supply-limited conditions, and 3) using REF-ET (University of Idaho) to obtain ASCE standard ET_o, also using crop coefficients from Pochop. Estimates were made only for irrigated lands above Fontenelle Reservoir, primary weather data was obtained from the SEO's Ryegrass station and the growing season was considered to be from May 1 thru September 15. Computed depletions from the Green River system due to irrigation (crop irrigation requirement) is shown in the table below.

METHOD	**CIR (acre-feet)**
1. Energy balance – METRIC	188,553
2. State CU	185,880
3. REF-ET – ASCE Standard ET_o	199,815

The above values should not be considered as final or approved data. The point of this exercise was to assess what level of agreement we might obtain between various methodologies. Although some refinement is still necessary, it was favorable to see reasonable agreement.

Allen, R. G., Tasumi, M., and Trezza, R. 2007. "Satellite-based energy balance for mapping evapotranspiration with internalized calibration METRIC - Model." *J. Irrig. Drain. Eng.*, 133(4), 380–394.

ASCE—EWRI. 2005. "The ASCE standardized reference evapotranspiration equation." *ASCE-EWRI Standardization of Reference Evapotranspiration Task Committee Rep.*, ASCE Bookstore.

Bear River Basin

The Bear River Commission met November 17, 2009 and April 20, 2010. Although Bear Lake continues to hover around the compact defined elevation of 5911' which dictates whether Amended Compact storage may take place in the upper basin, carryover storage was sufficient such that all Wyoming reservoirs could completely fill in 2010. 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) were flown in 2009 as a part of the USDA-National Agricultural Imagery Program (NAIP), so that photography will be used as the standard base layer among the states. Each state then has their secondary sources of information for verifying if a specific parcel is currently being irrigated, and if it was also in production in 1990. After the acreage changes are determined by the 3 states, the consumptive use value will be multiplied by the new acres in production. Bob Hill from Utah State University and Rick Allen from University of Idaho have been asked to give the Commission their recommendation for the updated factors to use by sub-basin. Preliminary acreage numbers should be ready for presentation to the Commission in April, 2011.

The Commission looked into their options for the hosting of the real-time diversion data that are being collected by the 3 states and PacifiCorp. The Commission ultimately decided to stay with Stonefly (Moeki) for the next couple of years, although Stonefly required the upgrade to a new software system. Jack Barnett told the Commission that he was ready to step back from full time consulting and his son, Don, was retained as the Engineer-Manager for the Bear River Commission.

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 2009-10 were maintained between 450-500 cfs. Spring of 2010 started out dry, but heavy snows and rain were received throughout May and June, resulting in flood evacuation releases out of Palisades Reservoir in May and June. The fall agency meeting was held September 15, 2010 and the winter releases for 2010-11 are set for 375 cfs.

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. Meetings have been held with the federal agencies to offer SEO help in filing for the water rights as required in the Act.

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 Weather Modification by the Water Development Office to a presentation on the Wyoming Game and Fish Department's aquatic invasive species program, "Don't Move a Mussel". 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. The notices from the Army Corps of Engineers are notices of applications for Section 404 permits. During this last reporting period, 13 notices were received from the Governor's Planning Office and none 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 National Environmental Policy Act (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).

Representatives from these organizations met with the new Office of management and Budget analyst for the USGS in July, 2010. The analyst did not have prior experience with state governments and it was good to educate her on how the states interact with the USGS on gathering streamflow information and who pays which costs.

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. The Salazar team in the Department of Interior responded positively to ICWP's suggestion that the ACWI is underutilized and should be called upon for more "advising" and less being reported to at the annual meeting. Assistant Secretary Anne Castle came prepared at the July meeting to ask for the ACWI to review the WaterSMART implementation plan.

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". One of the top 3 recommendations of the WGA report was Integrated Water Planning between the states and federal programs. The Council worked with the Corps of Engineers as they completed their survey of the states' water planning programs. In conjunction with the WSWC meeting in Lincoln, Nebraska in October, 2009, a one day drought workshop was held to discuss how the National Integrated Drought Information System could better serve the water user community. The WSWC and the ICWP met jointly in Washington, DC March 22-25, 2010. On March 25, the 3rd national USGS Streamgaging Forum was held. The WSWC coordinated comments back from the water users on the importance of the bandwidth utilized by the GOES satellite system for collecting water data at remote sites. The Federal Communications Commission was considering freeing up some of the bandwidth reserved for the GOES system to the cell phone industry, but the FCC received many comments on the importance and potential growth for the GOES system and is not moving forward with the proposal.

Upper Missouri Water Association

The Annual Congressional Briefing to Upper Missouri states was held in Washington DC on March 23, 2010 in conjunction with the National Water Resources Association meeting. The 2009 Annual Meeting was held on October 28-29 in Sheridan, WY in conjunction with the Wyoming Water Association annual meeting. Sue Lowry continues to Chair this organization. Kris Polly, former Deputy Commissioner for the Bureau of Reclamation and former deputy Assistant Secretary of Interior has been retained by the Upper Missouri Water Association to provide Washington DC "insider" news on water topics.

National Water Resources Association

The summer meeting for the National Water Resources Association was held in Jackson, at Snow King on July 28-30, 2010. The division presented a powerpoint on current water topics in Wyoming.

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. This update began during the 2008 reporting period and continued through this reporting period. WWC Engineering (WWC) of Laramie, WY, the consultant chosen to complete the Green River Basin Plan II Study, has completed all of the work on this plan and a final draft will be available in January of 2011.

Along with the surface water portion of the study, a ground water 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 ground water 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 process, the Basin Advisory Group (BAG) played an important role in this update. The BAG is made up of stakeholders from throughout the basin. During this reporting period, the BAG met in January of 2010 in Rock Springs and May of 2010 in Pinedale. These meetings provided the BAG with an opportunity to discuss important issues with each other as

well as with WWC, the WWDC and the SEO. Presentations were also made on issues pertinent to the basin as well as progress reports from WWC. Additionally, these meetings gave the SEO the opportunity to keep stakeholders updated on the Green River Consumptive Use Plan and other activities in which the SEO participates as part of the Colorado River Basin.

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 ground water 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 surface water project updated portions of the 2002 plan. Some of the portions updated include irrigated lands mapping, a tabulated summary of Tribal Futures Awards, available surface water information, population changes and projections and socio-economic data. The update also concentrated on some additional planning aspects that could help local and state decision makers. These planning aspects include looking at water use issues and topics that could influence water management strategies and water use opportunities in the basin.

Along with the issues mentioned above, MWH was also charged with recommending strategies to meet the needs of the basin as they were identified throughout the study. A chapter titled "Program Strategies" is included in this update.

The ground water project is being led by the WSGS with the USGS and WRDS providing technical support. This team will focus on gathering all available data relative to ground water. They will identify aquifers present in the basin and their associated quality and quantity and attempt to determine recharge areas, recharge rates and safe yield. Any information in existing reports, models and other studies that is pertinent to this study will be gathered into a bibliography. All of this information will then be synthesized into a report that lists the team's findings along with any data gaps and future needs that have also been discovered. The ground water portion of the study is scheduled to be completed in the spring of 2011.

The BAG played an important role in this update as well. During 2009, a meeting was held November 12 in Worland, and in 2010, meetings were held March 11 in Thermopolis and May 20 in Riverton. At these meetings, the BAG received updates on information on which the consultant team was working. These updates also gave the BAG the opportunity to provide their input into the plan. In addition, at each of the BAG meetings, BAG members gave presentations, providing the consultants with specific insight into issues in their particular area.

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.

The update will include a review and evaluation to determine if there have been any significant changes in the basin since the 2000 plan. The Water Planning team is reviewing the previous water plan report, technical memoranda, as well as the spreadsheet model and the irrigated lands

mapping. Other reports that have been completed in the basin will also be reviewed for any additional and relevant information.

During this last reporting period, the team met monthly to discuss and evaluate different parts of the Bear River Basin Plan. Each team member is working on updating the technical memoranda from the 2000 plan. This information will then be used to update the final report.

A BAG meeting for the Bear River Basin Plan II was held May 27, 2010 in Evanston. At this meeting, the planning team updated the BAG on the technical memoranda that has been reviewed and also presented some information on other projects that are ongoing in the Basin. Other presentations to the BAG included a presentation by Trout Unlimited on "Partnering for the Future of Wyoming's Working Ranches and Trout Fisheries" and an update from the Wyoming Game and Fish Department on aquatic invasive species.

The Water Planning team will hold BAG meetings periodically to keep the basin informed and to solicit information from the group. The final report for the Bear River Basin Plan II is scheduled to be completed in 2011.

In the months of May and June 2010, the Water Planning team met with the other BAGs around the state. The team met with the Platte River Basin BAG on May 19th in Wheatland, the Snake/Salt BAG on May 26th in Alpine, the Powder/Tongue BAG on June 16th in Sheridan and the Northeast WY BAG on June 17th in Gillette.

At the Platte River BAG meeting, the group discussed the Platte River Basin Plan Ground Water 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 2011.

At the Snake/Salt BAG, presentations were made by the Teton County Conservation District on the Fish Creek Ecosystem Evaluation and Protection Project as well as an update from the Wyoming Game and Fish on the Salt River Fisheries. The BAG also discussed the potential Snake/Salt Basin I ground water update. The WWDC is requesting $250,000 to perform the ground water update on this plan. As with the other ground water updates, this update will be performed by the Wyoming State Geological Survey as the lead with the U.S. Geological Survey and the Water Resources Data System providing technical support. The Legislature will decide during the 2011 session if this project will receive funding.

At the Powder/Tongue BAG meeting, the group enjoyed a presentation from Mike Wachtendonk, Wyoming Department of Environmental Quality – Water Quality Division on the Goose Creek TMDL (total maximum daily load) 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 Mike Wachtendonk on the Belle Fourche River Watershed TMDL (total daily maximum load) as well as an update from Pete Michael, Attorney General's Office, 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.

An additional study initiated during this reporting period by the Water Development Commission is the Basin Planning Environmental and Recreation Level I Study. 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.

In May of 2010, three firms were interviewed for this project. Harvey Economics out of Denver, CO was awarded this contract, which is scheduled to be completed by 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's goal is to improve communications between irrigators, state water officials, conservation districts, the Natural Resources Conservation Service (NRCS) and the Bureau of Reclamation to use limited resources as efficiently as possible. The group mainly provides an information sharing forum among the signatory groups during its quarterly conference calls.

SUPPORT SERVICES DIVISION

By

Martin Zimmerman and Staff

General

The Support Services division has a total of thirteen 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 – 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 new copier installation. The group supported and monitored Agency servers and infrastructure for proper operation.

Application Programming and Databases

The group continued to enhance the fiscal system to better meet the needs of the Fiscal group and allow for integration with the ePermit system. 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

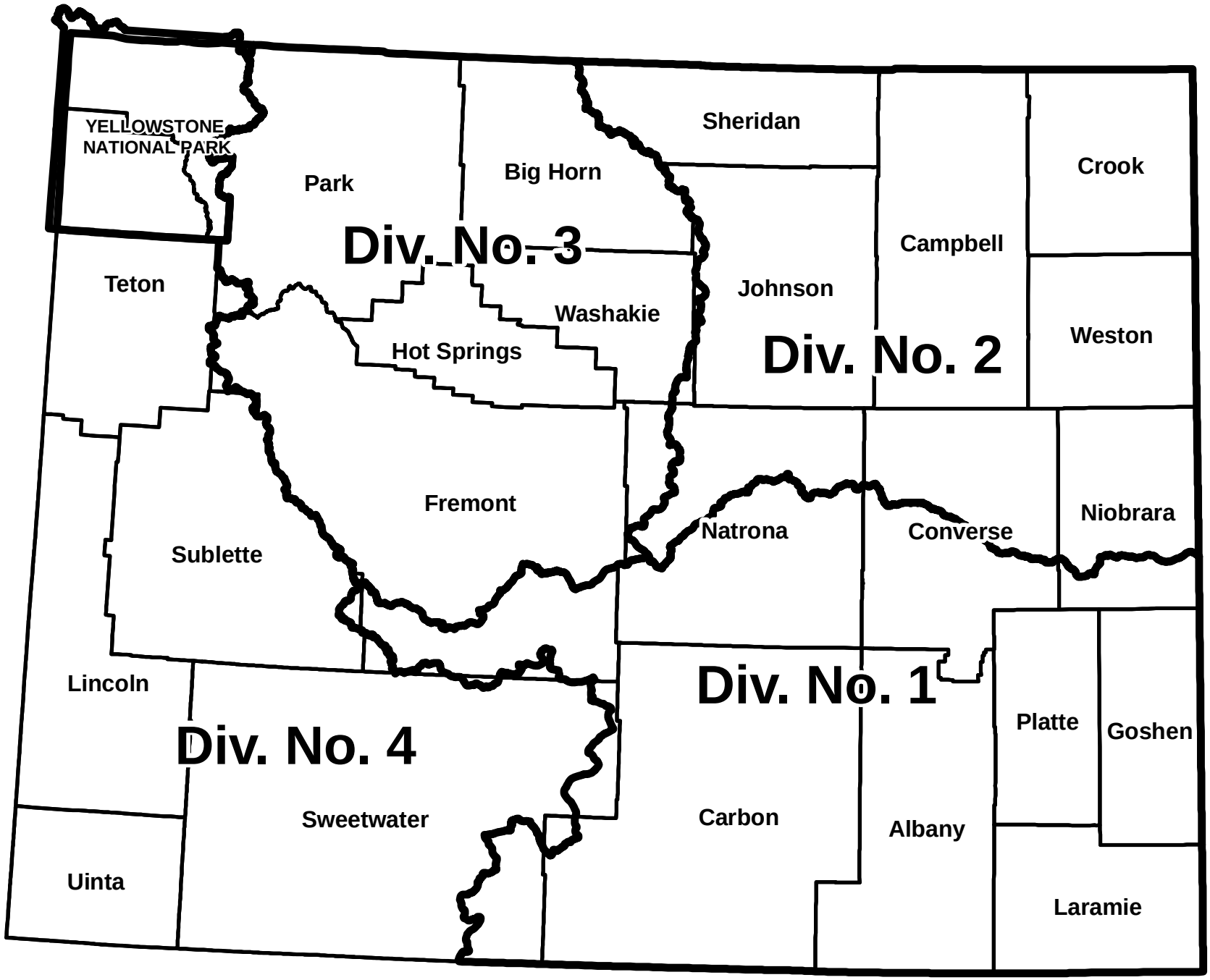
GIS continues to create, update and maintain spatial information for SEO staff as well as the general public. A big effort was made to obtain parcel data from all 23 counties from each Assessor's office. Similarly, cooperation between other state and federal agencies as well private vendors still takes place to share our data as well as receive data useful to our agency. We conducted several Microsoft trainings in addition to our usual GIS software training. We upgraded our core technology to ArcServer 10. One major project was working with the Bear River Technical Advisory group to update the acreage assessment of irrigated lands in the Basin. Another major project had to do with the new interest in oil and gas in southeastern Wyoming. Many maps and data were established for this effort to monitor progress. Collaboration with other local agencies on this project has taken place in hope to avoid redundancy.

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 scanning procedures and 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 Year 2010

Water Division I

Randy Tullis, Torrington, Wyoming

This report is a summary of water related activities and trends within Water Division No. I for the period of October 1, 2009, to September 30, 2010. Water Division No. I is comprised of the North Platte, South Platte, Niobrara, and Little Snake River drainages of southeastern Wyoming.

General and Climatic Conditions

I am please to report that Water Year 2010 was a year with abundant water supplies in southeast Wyoming, along with all the advantages and challenges those above average run-off years present. There was improvement in basin wide storage accruals as well as end-of-year carryover, abundant natural flow available for longer irrigation opportunities, and improved riparian and shallow aquifer recharge. These water abundant years do not always present the best of conditions for agricultural or riparian homeowners' interests, and the water year was characterized by probably only average growing conditions due to cold springtime temperatures and hail events, and considerable stream channel degradation or property damage due to record or near record streamflow stages. Water Year 2010 was the third consecutive year of improved hydrologic conditions and puts the difficult drought of 2000 to 2007 just another year in the past. I am continually reminded that the start of the next drought is but a day away, but I am excited to report that I do not forecast that "day" occurring for at least a while now.

The water year began with what would be considered an overall average to above average carryover in the basins' major reservoir facilities. An early and wet snowstorm did improve the soil moisture profile before the ground froze, but the winter would be considered unremarkable with a fairly "open" low to mid elevation snow cover and steady snowpack accumulation in the higher elevations. Similar to the previous two water years, the spring was characterized by cold temperatures that again delayed the runoff to late May and early June, a time frame several Hydrographers remarked to me was the "old normal time frame." The major difference this year was the above average precipitation that occurred in late April and May resulting in increased snowpack, streamflows, and super-saturated areas, all before the expected main runoff even began. The timing and magnitude of the May through June main runoff event would probably be considered well above average in volume and stage, and many reservoir managers were

challenged with bypassing inflows, managing flood stage river channels, and limited demand for natural flow diversion.

Drainage Highlights

Mainstem North Platte River storage ownership carryovers continued to improve – "improve" may be a misnomer in that not only were the ownership carryovers vastly improved, it required a late season release of about 175 KAF of ownership to get to what the Bureau of Reclamation (Reclamation) considered a safe end-of-season total system storage of 2.0 MAF, and preparing for an "average" next water year. On October 1, 2009, the North Platte Project ownership (basically Pathfinder and Guernsey Reservoirs) was 555 KAF (139% of 30 year average) and end-of-season carryover was 695 KAF (174%). Kendrick Project (Seminoe and Alcova Reservoirs) began the water year with 1,014 KAF (116%) and ended with 1,113 KAF (127%). The Glendo Project ownership began with 121 KAF (98%) and ended with 176 KAF (142%). All mainstem ownerships had filled by May 29 and a peak stage of 16,500 CFS at the North Platte River near Sinclair gage did not hit until June 14. Combine that peak flow with a concurrent Medicine Bow River peak of about 4,600 CFS and it is easy to appreciate the challenge of reservoir management when dealing with daily accruals of over 40 KAF! Of note is that Glendo Reservoir Evaporation and Power Head pools filled, and the flood pool was utilized to a peak total reservoir storage of 717 KAF on June 29; this flood storage capability is largely responsible for minimizing downstream flood flow damage. Pathfinder Reservoir was the only mainstem reservoir that physically spilled water and that occurred from June 15 to July 13. As can be expected, this resulted in emergency bypass of flood stage flows down the drainage and I must compliment the management and cooperation between numerous city, county, state (my staff in particular), and federal agencies that coordinated day to day updates to minimize the inevitable damage and challenges those conditions presented.

The February through April North Platte Project supply forecasts were well above the 1.1 MAF comparison mark and no administration during that time frame was necessary for Modified Decree compliance. It seemed as if normal operations were occurring when Inland Lake ownership was transferred starting on April 15, but by early May the basin-wide above average precipitation resulted in limited demand and started the chain reaction of either storing in flood pool or surcharge space, or bypassing natural flows. Luckily there were no major precipitation events in June or early July that would have compounded the existing runoff management challenges. Also of note is that all irrigation diversions downstream of Guernsey Reservoir were satisfied with exclusively natural flow, except for minor amounts of storage for two (2) Nebraska districts due to their State's non-recognition of allowing surplus supply diversions. The end result of this abundant natural flow supply was that, even though Wyoming had secured and was prepared to release replacement supplies for the previous year's "triangle" wells depletions, no replacement water was required and the previously secured supply was carried over for next year's potential obligation.

A major factor in the bypass or storage management of North Platte flood flows was the addition of the Big Laramie supplies below Guernsey Reservoir. The Big Laramie and its tributaries also experienced substantial runoff streamflows, and the short-lived advantage here was that there was considerable storage capacity still to be filled in major reservoirs. Starting at the bottom end of the drainage, Gray Rocks Reservoir began the water year with over 45 KAF, filled its ownership to about 104 KAF, and still bypassed over 140 KAF during the runoff period. Wheatland Reservoir #2 began the water year with about 51 KAF, filled its ownership by late April to 98 KAF, and carried over about 42.5 KAF . Wheatland Reservoir #3 began the water year with about 15 KAF and ended the season with about 78 KAF. And finally at the upper end of the drainage, the Pioneer Canal Co. diverted considerable direct flow and storage supplies and resulted in Lake Hattie Reservoir peak storage of about 76 KAF on July 4. These improvements were unexpected and are remarkable! Priority administration was enforced and eventually lifted in the Laramie River drainage and ranged from a late 2009 in-channel 1882 stock call on the Little Laramie, to Wheatland Reservoir No. 2 call for 1898 water, to a June 9 one-day request for regulation for Wheatland Reservoir No. 3 call for 1929 water – one day because the District also quickly determined that inflows were increasing higher than anticipated and they soon were trying to evacuate rising stage water from the Wheatland No. 2 Reservoir spillway gates.

One of the bright spots in the Division was the improvement in storage and natural flow availability in the Horse Creek and Crow Creek drainages. These districts have had some supply improvement the past year or two, but this year's improvement was above expectations. In addition to above average and extended streamflows for direct flow and storage diversion, the riparian and shallow aquifers have again been well recharged and the benefits of this improvement continue to be enjoyed into the 2011 Water Year. I am pleased to report that all major reservoirs in these districts filled their ownerships, and for some that has not occurred since the 1990s. Hawk Springs Reservoir filled ownership on April 26 and combined with natural flow, the Horse Creek Conservation District delivered about 1.2 AF/acre to their members. Goshen Hole Water Users (Springer Reservoir) filled on May 14 and delivered about 1.1 AF/acre. Goshen Mutual Water Users (Bump Sullivan Reservoir) had no storage to begin the water year (the reservoir has been bone dry since about 1999) and filled ownership to 1929 AF on June 12, and used some storage with ample direct flow to supply their members.

North Platte tributaries between Pathfinder and Guernsey Reservoirs had abundant supplies well into the irrigation season and there were no requests for regulation. Both Bates Creek Reservoir and LaPrele Reservoir filled to capacity, and combined with ongoing natural flow provided above average supplies for their water users. These high runoff and storage supplies have greatly improved both the quantity available for diversion and the late season base flows that have been below average for many years.

The upper North Platte, Medicine Bow, and Little Snake River drainages all experienced high streamflow stages during the spring runoff, and also enjoyed the benefits of those high flows with the filling of all major storage facilities and sustained late season base flows. There

were a few major canals or ditches that had "blow-outs" and needed emergency repair but most measuring devices and diversion structures remained usable. The Wheatland Irrigation District's Canon Canal was not utilized the entire season due to sloughing debris from an adjacent hillside at the head end of the canal, and as it turned out this major transbasin diversion from the Rock and Dutton Creek drainages to the Big Laramie was unnecessary due to the abundant supplies in the latter basin.

Accomplishments and Challenges

As a member of the Wyoming Board of Control, statutory duties of petition and proof evaluations, field inspections, conducting hearings, discussions at quarterly meetings, and final decisions and Orders were completed as necessary. In no way comprehensive, the following is a status update of some controversial Board or water administration decisions that occurred during the water year. The Board's decision on the protested Wagonhound/VenJohn change in place of use petition on the North Platte River in the Douglas area was upheld by the District Court and has since been appealed to the Wyoming Supreme Court. A hearing was held in Laramie for the Goodwater Group change in place of use petition in the Fox Creek area wherein the protesting neighbors finally signed consent. The hearing for the C.C. Davis petitions in the upper Horse Creek drainage before the full Board was finished with two (2) more days of testimony and evidence in October with a field inspection in February. At the May 2010 Board meeting one of the petitions was granted in part and denied in part, and has since been appealed to District Court. The November 2010 Board's decision in the Wagonhound/Stinson change in place of use petition on the North Platte River near Douglas was to grant in part and deny in part, and this decision was appealed to District Court but then withdrawn. In the matter of Wilson v. Lucerne and State Engineer, originating with an administrative decision of this Superintendent that was upheld by the State Engineer, I briefly testified at the appeal hearing before District Court and that court later upheld the State Engineer's decision. That Order has since been appealed to the Supreme Court with arguments having been presented and we await their decision. In the Sedman Declaration of Abandonment petition on lower Horse Creek near Huntley I had scheduled a contested case hearing for December, but the parties mediated a subordination agreement that was recognized by the Board. In the Geringer v. Runyan/Willson Declaration of Abandonment petition in the Wheatland area, the previous "denial for lack of standing" decision of the Board was upheld by the Wyoming Supreme Court and those parties will need to cooperatively and proportionately share those well appropriations.

Reporting requirements for Modified North Platte Decree compliance has continued to be completed in a timely manner. On-the-ground acreage inspections have continued to be improved in timing and landowner cooperation, with final reporting map products accurate and defensible. I would like to compliment Rob Foreman, Connie Kersting, Chad Pickett, J. Scott Haskamp, and Tracy Brown for their continued efforts in this important compliance task. The data they compile has been complete and will aid in Water Year 2011 in another important compliance issue of determining a split of the 226,000 acres above and below Pathfinder Dam.

Kelly Mehling has continued to providing accurate and defensible data to support Wyoming's compliance related to the number of active "triangle" irrigation wells, selected individual well pumping volumes, as well as total triangle area well pumping estimates. Brian Pugsley and Tracy Brown, along with other field staff, has completed new installations and continued maintenance of the telemetered instrumentation of major irrigation reservoirs above Pathfinder Dam and these improvements will support accurate reporting of annual accruals in relation to the 18,000 AF allowed annually by the Modified Decree. Other compliance issues were ably handled by Matt Hoobler and may be reported in the Interstate Streams section of this publication.

A new development in the southeast part of Wyoming is the Niobrara shale oil and gas development that began in earnest near the beginning of the water year. As will be reported elsewhere in this publication (Surface and Ground Water Sections) numerous permits or agreements for temporary water have been granted by the State Engineer and compliance issues have been challenging. The State Engineer has appropriately issued several Policy Memorandums to allow interested parties to better understand the options available for acquisition of temporary water supplies, and I assisted with several public meetings to discuss these options. As is the case with many water related compliance issues, I would estimate that the majority of temporary permits are being utilized appropriately, yet field inspections have also determined some violations that have required regulation administration. I would expect this compliance verification challenge to increase over the development of the "play" and this Division will continue to coordinate with the Cheyenne Office personnel, and appreciates their support, to meet this challenge.

Two major technology advances were utilized for the first time this water year. The WyoLink radio system has greatly improved radio communications statewide, particularly in areas where the previous two-way frequency channel was useless. My compliments to the Wyoming Department of Transportation radio tech staff in programming, training, and support of this valuable safety and communication option. Also, an Acoustic Doppler Current Profiler was delivered after the high streamflows, but was still tested in several river or canal cross-sections and found to be accurate, consistent, and safe. Division No. I staff looks forward to fully utilizing this state-of-the-art discharge measuring tool during next year's high flow events.

It is with sincere appreciation that I again thank staff that help settle the disputes of conflicts between water users, collect and compile the data for professional publication, continue to assist the general public with water rights administration and questions, and application/paperwork assistance and completion. Water Year 2010 will be remembered as the third consecutive year of abundant supplies (it seemed a little too much at times) and hopefully we will continue to be blessed with the increasingly important natural resource of surface, ground, and storage of water.

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.

GENERAL CONDITIONS

The 2010 water year began with 44% reservoir carryover in the Tongue River drainage, 76% in the Powder River drainage including Lake DeSmet (54% excluding Lake DeSmet) and 53% of the total storage in Keyhole Reservoir in the Belle Fourche drainage.

As of April 1, 2010, the snowpack conditions in all of Division II's major drainages were below average. The Tongue River drainage average was 71% of normal with both the Upper Tongue and the Goose Creek drainage being 71%. The entire Powder River drainage had an average snowpack of 84% with its three major sub-basins being as follows: Clear Creek 80%, Crazy Woman Creek 84%, and the Upper Powder at 88% of normal. The Belle Fourche drainage had an average snowpack of 72%. Additionally, as of April 1, the average year to date precipitation was 75% of normal in the combined Powder and Tongue River basins and 104% in the Belle Fourche River basin.

With the advent of May there was a continuation of these meager snowpack conditions and precipitation totals throughout Division II and it appeared an early, dry spring was upon us. Irrigation diversions started up as usual in mid-May and water users were gearing up for a possible below average water supply. With the coming of late May and early June fears of a long, dry summer quickly vanished. Late spring temperatures plummeted and along came the rain and snow.

As of June 1st, snowpack conditions in the Big Horn Mountains rose dramatically with the Tongue River basin reaching close to 200% of normal and the Powder River basin approaching 180% of normal. The lower elevation Belle Fourche drainage was totally melted out but the average year-to-date precipitation rose to 121%. All major storage facilities filled and spilled during the month of June with the exception of Lake DeSmet and Keyhole Reservoir. Lake DeSmet peaked at 211,871 A.F. or 90% of total capacity and Keyhole Reservoir peaked at 116,508 A.F. or nearly 62% of total capacity.

The peak flows in the combined Powder/Tongue basins were very consistent in timing, duration and stage. The main stems and their tributaries all peaked during the second week of

June with the higher stages lasting for extended periods of time. Estimates by Division II hydrographers, who are currently working on the stream data, seem to be indicating stream flows of about 132% of normal in the Tongue River basin and 150% in the Powder River basin. River flows on the Belle Fourche peaked twice this year, once on May 11 from annual snow melt and again on June 23 from a major precipitation event. During the course of the water year the Belle Fourche River ran approximately 170% of average.

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. Reservoir releases coincided with the scattered calls for regulation with the earliest calls coming in mid-July on some of the smaller tributaries and on the main stem of the Powder River above Kaycee, Wyoming. The main stem of the Tongue River never did go into regulation nor did the Belle Fourche River. There were no releases for either Wyoming or South Dakota irrigators from Keyhole Reservoir in 2010.

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 2010 water year releases were terminated and storage began for the 2011 water year. Carryover totals for the Tongue River basin averaged 34% of total storage and 83% for the Powder River basin including Lake DeSmet (53% excluding Lake DeSmet). Keyhole Reservoir had a carryover for 2011 of 109,315 A.F. of total storage. This results in a 58% carryover as compared to 53% a year earlier. It is nice to see this large storage facility gaining ground which is heavily used by recreationists in the N.E. corner of Wyoming.

Our coal bed natural gas (CBNG) reservoir inspection program continued during the 2010 water year and 522 reservoirs were inspected. Of those, 326 were approved. Of the 196 reservoirs not approved, 194 of them will require further permitting or construction work to bring them into compliance, and the remaining 2 were too small to consider. We will continue the program into the 2011 water year with our one remaining CBNG reservoir inspector with additional help from our hydrographers as their time allows.

In addition to the CBNG reservoirs, an additional 281 reservoir permits were inspected by Division II hydrographers and the dam inspector. Of those, 197 were approved and 84 were not approved. Of those 84 reservoirs, 58 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, 127 were scheduled for inspection in the 2010 calendar year. To date 108 of the inspections have been performed with hopes that the remaining 19 will be completed by year's end.

This past year 47 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 107 stock reservoir inspections not to be adjudicated, but included in the Tab Book. In addition, 37 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. One public hearing was held with the petitioner ultimately requesting a withdrawal of the petition.

SUMMARY

The 2010 water year brought some interesting twists in regards to water supply with the end result being a very good year for agriculture and all other beneficial uses. The late spring precipitation in the dryland areas produced a lot of forage for livestock and irrigators had abundant water to grow crops with. Municipalities within the division had no reported shortfalls and stock watering facilities all seemed to have adequate supply. CBM development in the division saw a sharp decline in 2010, but this was a function of a poor national economy and the price of natural gas. Despite the cool, wet spring we did unfortunately see a large number of grasshoppers again this year, but in most areas the increased forage compensated for their abundance. We hired a new hydrographer for District 8 this year and he did a great job of learning the many skills needed to perform his duties. Field staff installed one new automated measuring site this fall and it will ready to go online in 2011.

REPORT OF THE SUPERINTENDENT

WATER DIVISION III

OCTOBER 1, 2009 –SEPTEMBER 30, 2010

LOREN SMITH
RIVERTON, WY

This report will summarize Water Year 2010 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, one division secretary and one superintendent.

Reservoir carry over storage going into WY2010 was about as close to average as could be expected. Many reservoirs across Division III were not drafted hard in the fall of 2009 leaving them in decent shape heading into the winter months. Christina Lake on Little Popo Agie, Worthen Meadows on the Middle Fork Popo Agie and Shoshone Lake on the North Fork of the Popo Agie all filled to capacity but regulation requests for delivery of storage were never filed this year. The table below has been expanded for reporting purposes as it now includes all non-stock use reservoirs in the water division with a permitted capacity greater than 1000 acre-feet. This is similar to what is now being reported to the Yellowstone River Compact Commission on an annual basis. The results are slightly skewed in that Greybull Valley Reservoir was drained to facilitate repairs to the dam as a result of Dam Safety concerns. The reservoirs across this water division were typically drafted quite hard during 2010 to make up for the lack of any late season precipitation. This is especially evident when looking at Bull Lake Reservoir, Big Horn Reservoir and the GVID reservoirs Lower Sunshine and Greybull Valley Reservoir carry-over numbers.

District	Reservoir or Lake Name	Capacity	Usable Contents on Sept. 30, 2010	% Capacity Sept. 30, 2010	Usable Contents on Sept. 30, 2009	% Capacity Sept. 30, 2009	Change in Contents (AF)
7	Adelaide Reservoir	4,764	980	21%	2,270	48%	-1,290
5	Anchor Reservoir	8,795	339	5%	325	5%	14
15	Bighorn Lake	1,312,000	959,907	73%	1,052,000	80%	-92,093
3	Boysen Reservoir	757,851	639,049	84%	588,800	78%	50,249
9	Buffalo Bill Reservoir	644,540	485,528	100%	484,000	100%	1,528
3	Bull Lake	151,951	65,846	85%	83,800	109%	-17,954
8	Greybull Valley Reservoir	33,169	4,158	13%	7,940	24%	-3,782
3	Pilot Butte Reservoir	34,600	17,428	50%	8,430	24%	8,998
16	Upper Sunshine Reservoir	52,987	52,339	99%	45,560	86%	6,779
16	Lower Sunshine Reservoir	58,748	25,058	42%	33,920	57%	-8,862
1	Christina Reservoir	3,860	3,500	91%	3,500	91%	0
16	Corral Reservoir	1,027	576	56%	N/A		
9	Diamond Creek Dike	18,378	445	2%	N/A		

	Reservoir						
1	Enterprise Reservoir	1,698	42	2%	150	9%	-108
8	Fairview Extension Reservoir	1,411	1400	99%	N/A		
8	Harrington Reservoir	1,202	600	50%	N/A		
3	Lake Cameahwait Reservoir	6,683	6683	100%	N/A		
5	Lake Creek Reservoir	1,373	1370	100%	N/A		
9	Newton Reservoir	4,525	2000	44%	N/A		
9	Perkins and Kinney Reservoir	1,202	1150	96%	N/A		
9	Sage Creek Reservoir	2,785	2683	96%	N/A		
7	Shell Reservoir	1,949	75	4%	N/A		
1	Shoshone Lake Reservoir	9,740	140	1%	N/A		
3	Teapot Reservoir	1,578	0	0%	0	0%	0
6	Ten Sleep Reservoir	3,509	3217	92%	N/A		
9	Wiley Reservoir	1,020	1020	100%	N/A		
1	Worthen Meadow Reservoir	1,504	397.5	26%	500	33%	-103

Snow pack in the basin was nearly non-existent through the later part of the winter accumulation period leading to very meager runoff forecasts. The April first Streamflow forecasts for the Big Horn Basin were dismal at best. The Upper Wind River basin and the Western side of the Big Horn basin including the drainages of the Shoshone River, Greybull River and South through Cottonwood and Owl Creek all were in the 57-60% range for May –Jul runoff forecast. The Eastern side of the Big Horn Basin was a bit better sitting in the 70% of normal range. Precipitation began to fall through May in the Upper Wind River area raising the Boysen inflow forecast to a respectable 80% of Normal while the other basin drainages only increased slightly from the April numbers. Then came June, heavy wet upslope storm patterns in the Wind River Basin dumped significant snow in the Popo Agie drainages of the Southern Wind Rivers, lots of rain in the basin floor area as well as good snows in most other mountain valleys across the Big Horn Basin. Streamflow forecasts by the first of June had risen to normal levels basin wide and the heavy spring precipitation continued to fall for two more weeks.

As the runoff got started in earnest upslope storm conditions following a few seasonably warm days created some exciting streamflows in the in the Little Wind River drainages. On June 7, 2010 the Middle Fork Popo Agie reached a stage of 7.50 ft at 3895 cfs, the Little Popo Agie reached a stage of 5.76 ft and 1773 cfs on June 8 while these two peaks actually only occurred about 4 hours apart they contributed to the peak of record being recorded at the Little Wind River near Riverton on June 9th at over 12000 cfs. There was significant flooding in the Lander and Hudson areas as well as rural flooding along most of the Little Wind River drainage. The Big Wind River did not see the extremes witnessed on the Little Wind as the upslope snows didn't occur as in those tributaries to the same level. Even with the lower flows in the Big Wind River the inflows to Boysen were impressive with a daily accumulation of storage on June 9 being over 30,350 AF. By the first part of July the precipitation had nearly ceased to exist, National Weather Service in Riverton recorded less than a half inch of precipitation during the July through September time period.

Early snow storms across the basin in October led to many problems with the 2009 harvest of what looked like a great sugar beet crop. The early snows melted and froze hard, quickly forcing

many producers to just leave the beats in the ground; reports of up to 40% loss have been circulating. The heavy spring rains in 2010 resulted in many plantings being fairly late as well as some problems with the germinating plants getting washed out or even rotting due to the heavy moisture. Eventually things dried out and temperatures climbed to comfortable levels and most crops were harvested in near normal levels. Sugar beets were reported to be down a bit in sugar content but the tonnage was good, beans were late being harvested due to late start and cooler summer temps but the quality was good. Barley came off the fields at about the normal time and from the sounds of it the barley crop was better than expected.

Even though this year we received a fantastic late spring snow pack and a whale of a good runoff in most of Division III, administrative regulation occurred on many drainages throughout the season. The table below is a tabulation of the requests for regulation received this past year in Division III. Pre-runoff regulation was quite normal and expected in most locations and the post runoff requests followed a bit later than normal. There was no regulation request on Middle Popo Agie this year as irrigators worked together to move water around as a few of the key diversion structures had been damaged or completely washed away in the June floods. The Little Popo Agie Irrigation District never released water from Christina Lake this year which is what typically triggers regulation of that drainage.

Date of Call	District	Stream System	Calling Facility	Calling Party	Action
3-23-2010	13	Gooseberry Creek	Holland Ditch	Mark Nogle	Approved
4-21-2010	10	Bennett Creek	Berry Ditch	Jim Cox	Approved
4-26-2010	5	Owl Creek	Hale Ditch	Reese Jackman	Approved
4-26-2010	13	Gooseberry Creek	Blake-Denton Ditch	Dan Madden	Approved
7-15-2010	8	Greybull River	Sandstone Ditch	Lee Adams	Approved
7-15-2010	13	Gooseberry Creek	Blake-Denton Ditch	Dan Madden	Approved
7-23-2010	5	Owl Creek	Kirby Ditch (Exchange)	Landis Webber	Approved
7-28-2010	14	Cottonwood Creek	Brassington Ditch	Jim Butterfield	Approved
8-5-2010	7	South Beaver Creek	London	John Anderson	Approved
8-19-2010	12	Medicine Lodge Creek	George and Bayne Ditch	Martin Mercer	Approved
9-24-2010	13	Gooseberry Creek	Holland Ditch	Mark Nogle	Approved

Accomplishments:

The normal Board of Control duties that are completed in accordance with statute and rule take a large amount of time throughout any 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 50 surface water petitions and 23 groundwater petitions were disposed of in some manner. Petitions for changes in water rights can be completed in many ways ranging from a full grant to a dismissal or withdrawal of the proposal. Seven public hearings were held either in regards to 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 188 surface water permits for adjudication, 43 ground water permits were adjudicated and 39 stock reservoirs were presented for recordation within the terms of the permit by the Board. This hard work is in an effort by the division staff to achieve the highest numbers possible toward compliance with the Agency Strategic planning goals.

The recurring problem of funding for important administrative gages on the reservation again needed attention in Division III. For years the Bureau of Indian affairs has struggled to maintain funding for four canal and one stream gage that are of critical importance in properly administering the available water supply on the Big Wind River. This past year the SEO entered into a Memorandum of Understanding with the BIA under which the BIA would supply equipment and the SEO would supply the manpower and expertise to operate these gages on the SEO real-time network. We started up and operated the four canal gages during for the 2010 season on temporary equipment provided by Division III, while we await the delivery of equipment from the BIA. There remains some concern over the one stream gage that the BIA continues to contract with the USGS for operation of. At this writing the BIA equipment is beginning to be delivered and it is hoped that all should be able to be installed prior to the 2011 irrigation season.

Issues are still taking time to sort out in regards to the operation of Big Horn Reservoir and dealing with the Bureau of Reclamation (Burec). The Montana recreational interests and Dept. of Fish Wildlife and Parks continue to lobby the Burec for releases in the neighborhood of 2500 to 3000 cfs during the winter months. The Wyoming contingent has worked hard over the last few years to get the Burec to recognize that the level of the lake is just as important as the downstream fishery and it should all be managed in concert. The reality of the situation is that with release levels as high as Montana would like, the reservoir is too low to access at the only boat ramp in Wyoming during all but a month or two during the summer. New draft operating criteria came out in September and the State of Wyoming will be commenting on these when that time comes. The draft criteria appear to lead us down a path intended to manage both interests equally but time will tell if they do that in practice.

The Montana v. Wyoming lawsuit before the U.S. Supreme Court continues into its third year. To date this case has not taken much time or effort on the part of this superintendent and the field staff of division III. Some review and long conference calls have taken place over the years but most all of the heavy lifting has been completed by the Attorney General's Office. As the close of the 2010 water year we now have in hand a report of the Special Master with issues to be argued in front of the U.S. Supreme Court early in 2011.

The turnover bug has affected Water Division III this past year. After a year of no turnover in 2009, Division III is faced with the departure of some good hydrographers. Forest Sentinella left the employ of the State Engineer's Office in February leaving a void in coverage in districts 6 and 12. Mr. Phillip Beamer, a Ten Sleep native was hired in July to fill her shoes. After a couple of years on the job Chance Fulk the district 3 hydrographer has left for greener pastures of California and the private sector and a replacement is expected to be appointed early in the 2011 water year. Also, Tiffany Searcy has left us with a vacancy in district 5 as she pursues the married life and a reclamation position in Idaho. These vacancies have allowed a slight restructuring of positions making the district 6 & 12 position full-time while downgrading the

district 5 position to seasonal. This should assist us in better covering those areas with later season water use and having year around employees responsible for more of the gaging stations.

One more time 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 final files were reported to the court this past year but objections to the state's recommendation continue through the court process and at the time of this writing we are awaiting the disposition of an appeal to the District Court regarding the recommended adjudication under Farmers Canal on the Greybull River. Remaining to be completed is the final State recommendation on Permit 1694E Taylor extension of the Dutch Flat Ditch near Lander.

The field staff of Division III continued to work on staying current with dam safety inspections and the snow survey program this year. A few dam safety inspections remain to be completed as the water year wound down but they will all be complete prior to winter setting in. After three 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 are adequately covered 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.

Area Highlights:

Good water makes for memorable water years. The flooding that occurred in the Lander area in June was quite impressive. Mr. Myron Smalley the hydrographer in that area was always available to everyone involved with the numbers and always ready to jump in with whatever help he could lend. We measured water levels that no one in our office has ever witnessed firsthand. Myron spent most of August and September chasing around trying to make sure everyone had what they needed as they moved water through various channels to get it those in need who may have lost their diversion in the floods.

The Greybull River Irrigation District is fairly deep into 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. As can be expected there are some individuals in the drainage that have some pretty sincere concerns about the project and it's possible effects on their water rights. These concerns will need to be addressed as the District moves forward on this proposal if they elect to.

The Shoshone drainage was blessed with a third good water year in a row. The abundance of water is inversely proportionate to the amount of administrative regulation that must take place. With only a bit of pre-runoff administration being necessary, much time was available for field inspection work to take place on some rather large scale proofs in the basin. Supplemental supply permits under both the Shoshone Irrigation District and Cody Canal were worked through this season. It is good to get these large proofs cleaned up and done. The first petition was received in the Board of Control late this past year in which someone under the Heart Mountain

Canal that has been getting water via a Water Service Contract. Essentially these contracts were to allow the irrigation of unpermitted lands with Buffalo Bill Reservoir storage. The problem is that the lands were being irrigated during the times of year when the reservoir was not releasing any storage water. The District has been noticed that this is unacceptable and they seem to be making an effort to comply.

The Nowood and Ten Sleep drainages both faired quite well. This was very necessary as we were without a hydrographer until the first of July when Mr. Phillip Beamer took the reins. The good water allowed Phil the opportunity to learn the basics of the job and with him having grown up in Ten Sleep he already was familiar with many of the faces on the streams. Phil did get to taste regulation in the later part of the season on Medicine Lodge Creek.

Only the regulation of Red Canyon Creek was needed in the Shell Creek drainage this year. Shell Reservoir was drafted to near empty as the lack of late season moisture was quite evident in that area. Last year's report mentioned the efforts of the District 5 hydrographer in upgrading records and accounting sheets used to track 1868 and exchange water deliveries in that complex drainage. These efforts paid dividends all season for better accountability, efficient delivery and accounting the meager water supplies on that drainage.

Summary:

A few years ago we used to have some time in the winter months to complete some of those time consuming research and long needed projects that just don't rise to the top of the heap during the busy irrigations season, not anymore. Even with our third good water year in a row we just cannot get around everything that we want to. With the addition of new gaging and real-time telemetry etc. we continually do more with less but we never get caught up as the public continues to ask for more of our time. Speaking engagements, meetings, travel and the like all take time from our busy schedules as we continually try to improve what we do and what we give to our constituents. I know this division seems to experience its fair share of turnover and it has been said many times that it is related to the inability of new hires to quickly become comfortable in their positions. Again in district 3 we find ourselves starting the training over. The past hydrographer often said he could never get it all done, we realize that, and everyone steps in to help cover as needed, where needed but too many people don't want to ask for that help as they are afraid it doesn't make them appear capable. We will be drafting our next budget over this next water year and I will once again be asking for additional positions to get this division properly staffed to cover the vast area. With the additional work load and issues that is realized in dealing with the heavy Burec and Wind River Indian Reservation presence within District 3 that leads to the huge learning curve, as well as getting Districts 5 and 7 up to full time year round status is going to be at the top of my list. I have an excellent core staff who all work hard each and every day carrying out the mission of this agency. I want to thank them all, and those in the Cheyenne office for their assistance and tolerance to our always immediate needs as well a huge thanks to my fellow Board members and the State Engineer for their continued assistance and guidance.

REPORT OF THE SUPERINTENDENT

WATER DIVISION NO. IV

By

Jade Henderson, Cokeville

This annual report is a summary of Water Year 2010 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 ended the Water Year losing David Orzel in our Pinedale office, a significant loss as they moved back East. After losing a part-time contract position to last year's economic slowdown in State revenues, at the end of this year we swapped this full-time Pinedale vacancy for the part-time Jackson position where backlog and demands are heavy. We are now faced with closing the Pinedale office while having the part-time position there on-call from their home. The budget began paying rent to Teton County for office space & services in their Road & Levee Department, and the Division office in Cokeville was relocated for more space. We are investigating a new office in Big Piney, since our landlord there wants to reclaim their building.

Incidents continue that require proper but problematic permitting for ponds, and the Surface Water Section has accepted our request to question applications for in-channel ponds in most areas of Division IV. When Trout Unlimited plans to rebuild appropriators' diversions for fish barriers, they need to be reminded to file petitions if changing Points of Diversion. The Board of Control's invoking of the statute – requiring recent historical use in order to change the use or place of use on existing water rights – is educating consultants and users seeking such changes, particularly in areas of subdivisions and expansion of towns or joint powers. Education is similarly advancing on hasty voluntary abandonment of pre-Compact rights, and on tighter scrutiny and caution to limit misuse of "Authorizations for Detachment" now that the form and rules are being clarified. The Board's rule-changing review through public comment proceeds without more flexible wording on reservoir carryover and orders-to-fill, although flexible interpretation and application of these was accommodated. PacifiCorp's request for more flexible BOC wording on storage of direct flow water rights came too late to be reviewed by advertising, and will have to be considered in a future rules revision.

The Superintendent's extra hours were high again this year, with demands making it difficult to take opportunities important for the top 5 water officials of the State. Examples of extra initiatives include suggesting streamlined and softened Surface Water rules on storage of direct flow water rights, defending water research topic recommendations, writing newsletter articles, and influencing legal briefs against judicial activism. We also reinforce staff and educational tools that help resist pressures for government water administrators to preempt private (civil law) prerogatives. Water Division IV advocated Wyoming perspectives at the nearby Western States Adjudication Conference as the Water Year began, and as it ended the Superintendent guest-taught a "Controversial Water" series to the local Environmental Science class of Cokeville High School. These are in addition to giving adequate attention to the quasi-judicial responsibilities on the Board of Control (such as careful review of case law precedent to compose adequate conclusions in the Order Records of its final actions after each water right hearing, which decisions are then appeal-able to the courts). This member appreciates the synergy from the rest of the Board in usually reaching better decisions

We have seen the third year of an "El-Niño" reversal from the 2000-2007 drought. Snowpack was still below average through winter (February precipitation this year was abysmal – around 50% for most of western Wyoming, and snowpack dismal until May). But it then climbed higher when springtime came late and wet. The delayed streamflow peaks came suddenly when warmth plus rain-on-snow caused high-water flooding on north-slope Uinta Mountain streams. A few headgates were lost, a streamgage left high & dry from eroded channel change, and replacement of electronics required on a couple washed-out telemetry sites. The late runoff again delayed the subsequent streamflow decline until later in the summer, closer to when the growing season's irrigation demand was winding down for harvest anyway. The wet and cold spring with frost had slowed crop growth until the warm and dry summer finally arrived. In some cases reservoirs filled early because of high carryover, in others from late spring rains; and delayed natural flow kept most of them from being drafted too heavily. Late summer was extremely dry, though; so some reservoirs were drafted heavily at the end of summer as some streamflows set record lows after a spring of some historic highs. The fall pattern and predictions are now for a change to a "La-Niña" heavier winter. Co-operative SnoTel installations with NRCS are now including soil moisture sensors, which is a big factor in predicting runoff. With "climate change" suggesting deeper or earlier curtailment of junior water rights, studies need to explore new "green" claims that cheaper microbial soil treatments reduce the healthier plants' water requirements while also increasing the soil's water holding capacity. Federal studies have instead tried to discredit prior-appropriation water law as over-appropriating.

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 are frustrated that we haven't yet released our Green River "telemetry" data to public access. Both of these technologies are helping to promote significant progress on installations of accurate and timesaving measuring devices in the upper Green area. But the basin's change from

a StoneFly contract website to our own intranet has reduced the accessibility and usefulness even for our own staff. Followup and enforcement for compliance on extensions for the remaining measuring flumes, and any of the old headgate repair Notices, is the responsibility of the local hydrographer/water commissioners.

"Orders" requiring measuring flumes on the remaining diversions on Pine Creek below Fremont Lake Reservoir and on Ham's Fork (including inflow-outfow computations on Viva Naughton Reservoir) are largely fulfilled. The co-operative contract between PacifiCorp's Viva Naughton Reservoir and the Ham's Fork Water Users Association was renewed again this year. Senior irrigation there refrains from calling-out junior storage fill, trading for some later storage release to keep appropriations whole as the stream declines.

While Utah remains unable to find staff time for delineating the remaining sole-supply acreages of their own over-filings in the rest of the Henry's Fork drainage, adjudicating newer Wyoming proofs is presently restricted to areas that have no duplicate or overlapping water rights. The Utah State Engineer's office is supportive of telemetry on real-time flow data in this shared drainage under a joint water commissioner.

Unity between the newer hydrographer/water commissioners and the Lead Hydrographer in Bridger Valley has reduced problems in the annual regulation of Black's Fork and Smith's Fork Creek for springtime storage and for delivery from Meeks Cabin and Stateline Reservoirs. This improvement has also been aided by better communication (including cell phones) and stricter protocol with the regulated users. The extra-dry fall resurrected competition for stockwater releases without stock use designations or stock water rights for the hydrographer/water commissioners to honor, complicated by a few reservoir supply rights that begin filling perhaps prematurely right after September 30th. The misguided Berman legal action in Utah did not even 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. But he has appealed to the Utah Supreme Court their district court's refusal to impose itself inside Wyoming. New reciprocity passed in Utah allows agreements with Wyoming's law on cross-border water issues, as un-compacted priorities make further headway in reaching across state lines. A Safety of Dams incident was handled southeast of Mountain View when the District 3 Water Commissioner discovered flow around the outlet and a sinkhole in the dam from Reed Reservoir's rusted-out pipe.

Even though the upper Green area had the poorest snowpack, only South Piney and Cottonwood Creeks from the Wyoming Range experienced the usually widespread regulation on District 10 tributaries. Perhaps the respite allowed us time to further adjust to the reduction in field staff experienced in Sublette County. Bureau of Reclamation's forecasting of inflows to Fontenelle Reservoir, which now takes into consideration data we provide on empty reservoir space in the Wind River Mountains, is becoming a good indication of summer flows in the upper Green basin. We also provided to the National Integrated Drought Information System low-threshold trigger points at some USGS gage stations in the Upper Colorado River Basin for signaling shortages in Wyoming.

Efforts by Eden Valley Irrigation & Drainage District and its members toward amending irrigated lands from squares to circles are becoming steadier, even though progress is slow on the discussed comprehensive petition by the Bureau of Reclamation for those remaining. To avoid more project-acre shortages, the District agreed henceforth to have its members submit NRCS "Water Rights Verification Forms" to us before proceeding with further pivot-sprinkler installations. Though some pivots are funded privately, the NRCS administers this federal Colorado River Salinity Control Project for U.S. treaty obligations to Mexico. Internal calls within irrigation district boundaries are first deferred to district authority, including on drain ditches inside this one-of-a-kind "irrigation & drainage" district.

Snake River

Even outside irrigation districts we decline continued calls for internal policing and distribution or division of permitted water, whether down their source's side-channel or down-ditch. But that is generally after time-consuming interactions inside corporate systems like Hardman Canal and Central Bedford Sprinkler Pipeline lateral, and other times investigating complaints against unpermitted use which we should promptly enforce. The Board outvoted this Superintendent's resistance to allow Afton's Rockbridge Addition to suddenly insert itself into the record Halling Ditch. At the beginning of the Water Year, the Board accepted his persuasion for denying only the protested future alternate point of diversion proposing to come back into the Kirkbride Ditch after moving out. Private disputes 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.

Fine-tuning the operation of newly refurbished hydropower dams on Swift Creek has also resulted in the water users finally recognizing the need for moving the overflow of Afton Canal's pipelines intake so that it discharges excess diversion above the downstream headgates. For the one interstate-regulated stream in this drainage (the Roxana Decree), we linked the Teton Creek streamgage by Raven cell phone to our telemetry system. Though Teton Creek fell below the 90-cfs Roxana trigger again this year, Wyoming demands were less than our full half, so no curtailment was imposed. Proof-taking, diversion data collection, and reconnaissance for proper permitting and petitions are on the increase in District 16.

Bear River

Again this summer, interstate regulation was imposed in neither of this compacted river's Central or Upper Divisions. Instead, 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 restrictive 5911 elevation this year in time to still allow upstream junior storage to fill, even Amended Compact shareholder accounts in Sulphur Creek Reservoir were made whole with no transferred allocations from carryover and un-built storage. After decades of operation, users above Evanston have complied with our deadline letters for filing storage exchange on their storage deliveries upstream. Sulphur and Whitney reservoir companies have also begun making their own releases and tracking shareholders' use. The

remote Whitney Reservoir's telemetry can now show the amount of their release without the long trip into the Uintas by the Water Commissioner. Good streamflow and careful operations of Woodruff Narrows Reservoir Company (particularly at their majority Utah diversions) resulted in high carryover for another year as they released little storage to supplement shareholders' plentiful direct flow. Potential delivery into the Central Division of Woodruff Narrows Reservoir Company shares across Pixley has been assigned for review to the Technical Advisory Committee by the interstate Bear River Commission. This Water Superintendent had emphasized that the Company need not defer to the Commission a decision on their extent of honoring points of diversion for water-share distribution.

Pixley West's cleaning down-ditch over the last couple years has kept their measuring flume un-submerged. We are beginning to further monitor 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. Further north on Raymond Creek, the central offices of the State Engineer and Board of Control responded to a protest against Wilde Reservoir by detailing the agency's ability to administer against such ponds, particularly once the downstream protestor's water rights are in order.

While we expand and improve radio telemetry & headgate-automation on the compacted Bear, downstream Idaho (with PacifiCorp) continues following the Utah and Wyoming lead to include measuring devices on its diversions. They are using similar cost-share from federal Bureau of Reclamation grants for telemetry on some, as the 3-state interstate Commission extended its webpage hosting contract with StoneFly through the end of the 2010 Water Year.

Conclusion

Each of our full-time hydrographers now has one USGS-published co-operative streamgage to operate for expert training on flow measurement & record-keeping. Purchase of the budgeted acoustic Doppler "River Surveyor" has saved time, as this new substitute technology is needed for safer measurement during high flow periods without expensive and dangerous cableways or bridges. Participation in NRCS Snow Surveys and WG&F Instream Flow proofing is included in our winter workload without funding for our own snow-machines.

Delay continues in compiling, from the agency's comprehensive e-Permit development, an updated Tabulation Book and the Hydrographers' Annual Report. The latter forces 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 relearn each year's sophisticated upgrades, which may eventually also provide direct publishing.

SPOT trackers were made available to the field staff as an emergency locator for their increased safety. A motivated and ambitious team is critical and valued as we look at old challenges and new opportunities for protecting the rule of law in water rights. We have gifted staff; and the appreciation for integrity, work ethic, and attention to accuracy and follow-through are important values for the agency'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 investigate 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, 2010				
		RESIDENT	NON-RESIDENT	TOTAL
PROFESSIONAL ENGINEER	INDIVIDUAL	1,122	4,572	5,694
	CORPORATION	97	538	635
	TOTAL	1,219	5,110	6,329
PROFESSIONAL LAND SURVEYOR	INDIVIDUAL	129	196	325
	CORPORATION	16	14	30
	TOTAL	145	210	355
PROFESSIONAL ENGINEER & LAND SURVEYOR	INDIVIDUAL	71	43	114
	CORPORATION	38	30	68
	TOTAL	109	73	182
ENGINEER-IN-TRAINING		1,407	771	2,178
LAND SURVEYOR-IN-TRAINING		60	11	71
GRAND TOTAL		**2,940**	**6,175**	**9,115**

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 09-10

by

Lynn Ritter, Executive Director
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Riverton, Wyoming 82501
307-857- 4169
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Report Period:

October 1, 2009 through September 30, 2010

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

The initial mission of the Board was to administer a voluntary certification program. The purpose of the certification program was 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.

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 licensing program.

Licensing provides the public with a level of protection they did not previously have from a health and safety perspective. With licensing, water well owners that have experienced poor or inadequate performance by a water well contractor may file a complaint with the Board. 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 WY-10 there were six new licenses issued from October 1, 2009 to September 30, 2010. To date there are a total of 277 license holders to include: 86 Well Drilling Contractors (WD), 83 Pump Installation Contractors (PI) and 108 with both a Well Drilling and Pump Installation Contractors (WDPI) license.

The first tri-annual license renewal deadline is December 31, 2010. Licensed contractors will have to supply the board with the renewal applications, renewal fees and continuing education requirements of 18 hours for each licensee.

Budget

The State Engineer's Office was successful in obtaining funding for the Board. The 2008 Legislature created a new statutory provision, W.S. §9-1-904(b), allowing the State Engineer's Office to deposit 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.

Rulemaking within Chapter 1 was required to allow the Ground Water Division of the State Engineer's Office to increase the fees for permit applications for domestic, stock, irrigation, municipal, industrial, and miscellaneous use wells within the statutory limits provided by W.S. § 9-1-904 (a) (v) (A) and (D). The new rules increased fees for domestic and stock well applications from $25.00 to $50.00, and fees for irrigation, municipal, industrial, and miscellaneous use wells from $50.00 to $75.00.

Increasing the permit fees for wells and depositing up to $25.00 per permit in the Water Well Contractors Account, provides the necessary funding needed to operate and manage the *State Board of Examining Water Well Drilling Contractors and Water Well Pump Installation Contractors*, and administer W.S. §33-42-101 through W.S. §33-42-117. Rulemaking was completed in WY-09.

Board Meetings

In WY-10, the Board met three times with a quorum.

- November 30, 2009, Cheyenne, Wyoming
- January 11, 2010, Casper, Wyoming
- April 12, 2010, Riverton, Wyoming

New Staff

Rodney Wilhelm the former Board Administrator resigned June 4, 2010.

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

Bountiful precipitation provided well above average flows in the North Platte drainage in water year 2010. Nevertheless, construction commenced on the expansion of Pathfinder Reservoir. This office continued to advise the State Engineer and Water Development Commission on issues associated with that project and with the Platte River Recovery Implementation Program.

Colorado River

Litigation in the United States District Court in Phoenix, Arizona between the Grand Canyon Trust and the United States continued in 2010. 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. The court has dismissed many of the Trust's allegations, and the court held in abeyance motions to dismiss the remaining claims while the federal defendants formally re-evaluated the effect of dam operations on fish recovery. This office represents Wyoming in that case.

The United States Department of the Interior, together with the International Boundary Waters Commission, negotiated an agreement with the Republic of Mexico to allow Mexico to delay deliveries of Colorado River water through storage in reservoirs in the United States pending Mexico's repair of irrigation structures damaged by a major earthquake in the Mexicali area. Together with attorneys who represent the other six Colorado River Basin states, this office monitored the negotiations and advised the State Engineer on legal issues related to those negotiations.

The Million Resource Conservation Group has 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. This office has advised the State Engineer regarding the permitting of the diversions and has also provided a memorandum to the legislature regarding the potential application of Wyoming's export water statute to the project. Such issues will remain in play for at least several more years pending completion of an environmental impact statement by the Army Corps of Engineers.

Yellowstone River Compact

In early 2007, Montana sued Wyoming in the United States Supreme Court regarding water use on the Tongue and Powder Rivers, and the Court later appointed a special master to administer the case. On February 3, 2009, this office argued its motion to dismiss all of Montana's claims based on various legal issues. After that hearing, the Special Master generally denied Wyoming's motion, but in doing so, made several significant rulings in Wyoming's favor. He held that Wyoming water users in the Tongue and Powder drainages 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. The Special Master also has recommended conditions on any calls that Montana pre-1950 irrigators may make against post-1950 Wyoming water rights, consistent with general rules of prior appropriation law.

Montana filed a bill of exceptions in the Supreme Court taking issue with the Special Master's recommendations. This office filed its brief opposing Montana's bill of exceptions in June of 2010 and the Supreme Court scheduled oral argument in Washington for January 10, 2011.

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 ultimately ruled in the State Engineer's favor.

Coal bed methane development continued to create issues requiring this office's advice to the State Engineer. Also, 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 fracking operations.

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. The case remained pending as of the end of the water year.

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 2010 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.

Other Matters

Another issue involving the Big Horn River that required significant attention from this office in 2010 was the State of Montana's effort to pass federal legislation confirming its water rights settlement with the Crow Tribe. This office supported the efforts of Wyoming's congressional delegation to protect Wyoming's interests in the waters of both the Big Horn River and Big Horn Lake, so that those interests were not unfairly affected by the legislation. A bill which contained provisions that Wyoming demanded was close to passage as of the end of water year 2010.

PERSONNEL LISTS
STATE ENGINEER'S OFFICE
(As of September 30, 2010)

Tyrrell, Patrick T. .....Agency Director
LaBonde, Jr., Harry C.. ..... Deputy Agency Director

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
Rayburn, Nathan	Computer Technology Business Application Analyst
Vacant	Records & Data Management Technician
Vossler, Steve	Geospatial Technical Principal
Wickham, Brent	Senior computer Technology Systems & Infrastructure Analyst

GROUND WATER

NAME	TITLE
Lindemann, Lisa	**Natural Resources Program Manager**
Christie, Lou	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, Cindy	Office Support Specialist I
Manley, Jeremy	Nautral Resources Analyst
McDonald, Doug	Office Support Specialist II
Miller, Linda	Office Support Specialist II
Moser, George	Natural Resources Analyst
Neely, James	Natural Resources Analyst
Vacant	Natural Resources Analyst
Running, Ben	Natural Resources Analyst
Tebben, Beth	Natural Resources Analyst
Trujillo, Roxanne	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.	**Agency Administrator**
Water Division No. I	Torrington
LoGuidice, Carmine.	**Agency Administrator**
Water Division No. II	Sheridan
Smith, Loren.	**Agency Administrator**
Water Division No. III	Riverton
Henderson, Jade	**Agency Administrator**
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, 2010)

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	=	Trib 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, clogui@seo.wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
Assistant Superintendent	William (Bill) Knapp, bknapp@seo.wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
Office Support Specialist II	Deborah Reed, dreed@seo.wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
CBNG Res. Inspector	Kim French, kfrenc@seo.wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801

DIVISION II: WATER ADMINISTRATION PERSONNEL

DISTRICT	TITLE	NAME	ADDRESS
1,7,10	HC	Kody Steinbrecher, kstein@seo.wyo.gov	113 S. 21st St. Sundance, Wyoming 82729
2,3,7,8,9,10 ,11	LH	David Pelloux, dpello@seo.wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
8	HC	Robert Furnival rfurni@seo.wyo.gov	214 Ritter Ave. Kaycee, Wyoming 82639
5,6	HC	Pat Boyd, pboyd@seo.wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
1,8	HC	Roger Ralph, rralph@seo.wyo.gov	2020 Fairgrounds Road Ste 104 Casper, Wyoming 82601
8,9,10,11	HC	David Schroeder, dschro@seo.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, jhende@seo.wyo.gov	PO Box 277 Cokeville, Wyoming 83114
Assistant Superintendent	Kevin Payne, kpayne@seo.wyo.gov	PO Box 277 Cokeville, Wyoming 83114
Office Support Specialist I	Carol Reed, creed@seo.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, jyarbr@seo.wyo.gov	PO Box 1208 Lyman, Wyoming 82937
2	HC	Mike Johnson, mjohns@seo.wyo.gov	PO Box 277 Cokeville, WY 83114
3	HC	Zach Rasmussen, zrasmu@seo.wyo.gov	PO Box 1471 Lyman, WY 82937
4	HC	Don Shoemaker, dshoem@seo.wyo.gov	343 Ninth Street Evanston, Wyoming 82930
7,10,11	HC	Jeff Davis, jdavis@seo.wyo.gov	PO Box 1080 Big Piney, Wyoming 83113
7,10,11	HC	David Orzel, dorzel@seo.wyo.gov	PO Box 689 Pinedale, Wyoming 82941
5,6,7,10,11 ,13,16	LHC	Ed Boe, eboe@seo.wyo.gov	PO Box 1080 Big Pine, WY 83113
8,12	HC	Ed Bruce	142 Allred Road Afton, Wyoming 83110
9	HC	Bill Marchione, bmarch@seo.wyo.gov	PO Box 605 Kemmerer, Wyoming 83101
13	HC	Jim Wilson, jwilso@seo.wyo.gov	275 Yellow Rose Drive Alta, Wyoming 83422
14	HC	Todd Covolo, tcovol@seo.wyo.gov	PO Box 1165 Lyman, WY 82937
3,14,15	HC	DeLynn Saxton, dsaxto@seo.wyo.gov	PO Box 1208 Lyman, Wyoming 82937
16	HC	Bodean Barney, bbarne@seo.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
Stanton J. Abell, Jr.	P.E. Grosch Construction, Inc.	Vice President	307-347-3332	sjabell@tribcsp.com	3-31-11
Patrick T. Tyrrell	State Engineers Office Herschler Bldg. 4th Fl. Cheyenne, WY 82002	Secretary-Treasurer	307-777-6167	ptyrre@seo.wyo.gov	Indefinite
Thomas V. Anderson	Steel Structures, Inc. 1020 Sussex Casper, WY 82609	Member Public	307-472-7381	tvander@bresnan.net	3-31-13
Roger L. Jacobson	Engineering Associates P.O. Box 1900 Cody, WY 82414	Member	307-587-4911	rogerja@eaengineers.com	3-31-11

Scott R. Pierson	Pierson Land Works, Inc. P.O. Box 1143 Jackson, WY 83001	Member	307-733-5429	spieron@piersonlandworks.com	3-31-11
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	Knelso3@state.wy.us

NAME	POSITION
Christine Turk	Executive Director
Krista M. Wilson	Asst. Executive Director
Troy A. Niesen	Licensing Officer

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

NAME	ADDRESS	PHONE NO.	E-MAIL	TERM EXPIRES *
Lisa Lindemann	Herschler Bldg. 4E Cheyenne, WY 82002	307-777-5063	llinde@seo.wyo.gov	3/31/2013
Kevin Frederick,	Herschler Bldg. 4W Cheyenne, WY 82002	307-777-5985	kfrede@wyo.gov	3/31/2011
Jack Weber	1305 Gregory Lane Jackson, WY 83001	307-733-3343 307-413-1596 (cell)	jackweber@qwestoffice.net	3/31/2011
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	3/31/2011
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	ADDRESS	TERM EXPIRES	PHONE NO.
DIV. I	Ben Jordan	1050 North 3rd Street, Suite E Laramie, WY 82072	9/30/10	745-6118
	Michael Sweat	USGS Attn: Mike Sweat 2617 E. Lincolnway, Suite B Cheyenne, WY 82007	9/30/12	778-2931
	Vacant			
	Harvey Crowe	587 South Buffalo, WY 82834	9/30/10	684-7477
DIV. II	Jerry Bush	P.O. Box 297 Beulah, WY 82712	9/30/12	
	Vacant			
DIV. III	Dan Wychgram	214 N Ninth St. Thermopolis, WY 82443	9/30/12	864-3811
	Ken Schreuder ees@wyoming.com	40 Meandering Way Lander, WY 82050	9/30/10	332-1528
	Doyle Ward tward@wyoming.com	P.O. Box 1841 Riverton, WY 82501	9/30/14	856-9014
DIV. IV	Vacant			
	Vacant			
	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 Hosue Cheyenne, WY	2011	DIST.4
	Dale Martin	P.O. Box 391 Carpenter, WY 82054	2012	DIST.2
	Mike Romsa	5260 Hwy 216 Albin, WY 82050	2011	DIST. 5
	Shane Burrell	8841 Heavenly Dr. Cheyenne, WY 82009	2012	DIST.3
PLATTE COUNTY ESTAB. 10/7/81	Josh Graves	14 S. Antelope Creek Rd. Wheatland, WY 82201	2011	DIST.5
	Doug DeRouchey	P.O. Box 457 Wheatland, WY 82201	2012	DIST.1
	Richard Johnson	251 E. Johnson Rd. Wheatland, WY 82201	2012	DIST.2
	James Rietz	418 Kittell Wheatland, WY 82201	2012	DIST.3
	David Hinman	62 Ferguson Rd. Wheatland, WY 82201	2011	DIST.4
PRAIRIE CENTER ESTAB. 12/2/77	John Ellis	12852 Road 51 Torrington, WY 82240	2010	
	Greg DesEnfants	5557 Road 118 Torrington, WY 82240	2011	
	Elden Baldwin	North Star Route Torrington, WY 82240	2011	
	Angie Babcock	13008 Rd. 43 Torrington, WY 82240	2010	
	Steve Roth	5170 Rd. 118 Torrington, WY 82240	2010	

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
Dave Freudenthal, 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