

Minutes
Yellowstone River Compact Commission
Technical Committee Spring Meeting
4622 W. Hwy. 14, Burgess Junction
Dayton, WY
May 19, 2009

The meeting was called to order at 8:35 am by Sue Lowry.

1. Introductions - Those present introduced themselves to the group. A copy of the sign-up sheet is attached to these minutes.
2. Hydrologic Update
 - a. MT and WY USGS
Wayne Berkas gave the group [handouts](#) on different gages in the basin and discussed each one briefly. Each handout shows the daily discharge from October 2007 to May 2009.
 - Yellowstone River at Corwin Springs, MT
 - Clarks Fork Yellowstone River at Edgar, MT
 - Bull Lake Creek above Bull Lake, WY – currently, the flow is close to what is expected.
 - Shell Creek above Shell Creek Reservoir, WY– the flow at this gage has been higher than normal. The peak also occurred later.
 - South Fork Shoshone River near Valley, WY – the peak occurred later than expected and there was above average flow at the end of April.
 - Little Bighorn River near Hardin, MT – the flow last year was higher than average and in April it was higher again.
 - Big Horn River above Tullock Creek near Bighorn, MT – this is a Compact station gage near the mouth. Bighorn Lake filled and flows at this gage have been higher than average.
 - Tongue River near Dayton, WY– the flows at this gage did well last year and have been higher than normal this year. There was a little rise at the end of April and it is coming back up this month.
 - Tongue River at State Line near Decker, MT – the flows at this gage have been recording higher than average from last year.
 - Tongue River at Miles City, MT – the flows at this gage came up at the end of April.
 - Middle Fork Powder River near Barnum, WY – there has been good flows past this gage in April.
 - Little Powder River above Dry Creek, near Weston, WY – last year the flows past this gage were fairly normal. Currently, flows are running above normal.
 - Powder River at Moorhead, MT –last year, flows past this gage were higher than average. This year, the melt started in April.
 - Powder River near Locate, MT – last year, there were higher than normal flows past this gage. This year, the peak occurred in April.

b. Update on indicator gages

Kirk Miller passed [3 handouts](#) to the group.

Location of proposed indicator gages, Yellowstone River Compact Commission (YRCC) – this handout shows the location of the current YRCC Compact gages as well as the name and location of those gages which are proposed to be supplemental indicator gages.

The second handout shows the proposed indicator gages as well as two other gages, Tongue River at State Line near Decker, MT and Powder River at Moorhead, MT. This sheet shows the annual mean departure from average, in percent. The statistics are based on water years 1973 to present. Powder River at Moorhead, MT shows a peak during the 1970s. A large flow event in the late 1970's influenced the distribution for the Little Powder River above Dry Creek near Weston, WY gage.

The third handout shows the 25th and 75th annual mean percentile for those same gages for the same period of record as above.

Sue and Chuck expressed their appreciation to Kirk for his analysis of these long-term gages.

3. 2009 Runoff forecasts and estimates

a. NRCS – Terry Gonzales passed out [4 handouts](#) to the group.

Wind River Basin – as of May 17th, 2009 the basin SNOTELs are at 108% of average, varying from 3% to 166%. The average snow water equivalent (SWE) for this basin is 12.2 inches. Presently, the SWE is at 13.2 inches.

Bighorn River Basin - as of May 17th, 2009 the basin SNOTELs are at 101% of average, varying from 94% to 117%. The average snow water equivalent (SWE) for this basin is 12.9 inches. Presently, the SWE is at 13.0 inches.

Terry also reported that new SNOTEL sites are planned in the Wind, Bighorn, Powder River and Tongue River drainages. The State Engineer's Office requested 3 sites: Little Goose, Soldier Park and Castle Creek. Soldier Park and Castle Creek will replace manual snowcourse sites. Another site was planned on the Wind River Indian Reservation to be funded through the Wyoming Water Development Commission Weather Modification Program, however, that funding fell through.

The NRCS is working with the Desert Research Institute (DRI), taking snow samples and doing research on these samples. Some researchers are thinking the early runoff might be from dust and soot on the snow which increases thermal capacity. Volcanoes, fires, etc. can cause this soot in the air. They have some preliminary findings on this research and will be publishing them soon. DRI was originally testing the snow samples for the existence of silver iodide from cloud seeding. DRI is finding that the signature from cloud seeding it is so small that it can't be detected.

The NRCS will be shifting the 30 year average for their computations. Loren asked Terry if they have looked at how things will shift with the 30 year average moving to 1980-2009. Terry stated they have not, but the new average won't be computed until 2011. Wayne asked if NRCS is thinking about changing the average to 40 years instead of 30 years. Due to internal NRCS decisions, Roy stated that they will stay with the 30 year averages, moving every 10 years.

Roy Kaiser – ([PowerPoint presentation](#))

Yellowstone River Basin – all SNOTEL sites are currently at 122% of average. This year has been very comparable to last year. This year, the peak was above average and came at about the average peak date, which is April 15th.

Upper Yellowstone River Basin – the Snotel sites in this basin are all out of the Park and reach to the confluence with the Bighorn River. Currently, all Snotel sites are at 132% of average, much improved over 2007 and slightly higher than 2008. Recent warm weather has increased some of the melt.

The May forecast for the Upper Yellowstone River Basin is currently looking to be near average to above average.

Lower Yellowstone River Basin – all Snotel sites in this basin are currently at 110% of average, slightly lower than last year. The melt occurred in a similar time frame to last year. Currently, May is at 66% of average precipitation.

The Lower Yellowstone forecast is above average for May through September.

Tongue River Basin – all Snotel sites are reporting 114% of average, which is quite a bit lower than last year. The May precipitation so far is 51% of average.

The forecast for the Tongue River Basin is looking like it will be slightly above average to near average.

Powder River Basin – the Snotel sites in this basin are currently at 108% of average. Last year at this time, they were at 135% of average.

Powder River forecast – the forecast for this basin is slightly below average to near average.

- b. NOAA – NWS (Jim Fahey, Keith Kerbel) – Sally Springer was not present at the meeting; however, she emailed a [PowerPoint presentation](#).
 - c. Other Federal agencies (Reclamation, others?) – no report. Patrick Erger was at the meeting and available to answer questions on Yellowtail operations.
4. Reservoir operations and storage (MT and WY)
- a. Reservoirs of special interest (brief reports):
 - 1. Bighorn Reservoir operations

Loren Smith reported that Bighorn Reservoir is currently at 876,000 acre-feet, which is 67% of capacity. Currently, the release is set at 4,100 acre-feet. Yesterday, the inflow was around 3,500 acre-feet.

2. Buffalo Bill/Boysen Reservoirs (USBR or Loren Smith, WY SEO)
Loren further reported that, as of yesterday, Buffalo Bill Reservoir was at 416,000 acre-feet. The forecasted inflow to this reservoir is 750,000 acre-feet. The North Fork of the Shoshone will be interesting to watch with the fires that occurred last year. The fear is that trees could block the reservoir spillway. There is a boom in place up there, ready to pick logs out of the reservoir as they float down.
Boysen Reservoir is currently at 576,000 acre-feet. The forecasted inflow is 700,000 acre-feet. Current releases are at 1,600 cubic feet per second (cfs), which is 129% of normal.
Bull Lake Reservoir – Bull Lake is currently sitting at 89,612 acre-feet. Minimal releases will probably be resumed today.
3. Lake DeSmet (Carmine LoGuidice, WY SEO)
Carmine reported that there is an extensive repair job going on at Lake DeSmet. Currently, the water level in the reservoir is being lowered and is now at elevation 4608 feet, or 195,000 acre-feet. By July 1, the reservoir should be down to elevation 4606. They are preparing for a major rip-rap project on the South dam and there will be no storage this year.

Water will be released from the mountain reservoirs in the Big Goose drainage as they contain 40- 50% carryover which is a little higher than average. Bill Horak asked what the municipal demand was of the system. Carmine stated the average annual 12-month diversion for the city of Sheridan, which also includes Sheridan Area Water Supply or SAWS water, is 5,482 acre-feet from Big Goose Creek, which includes direct flow, Twin Lakes Reservoir releases and Park Reservoir releases. He also stated that the municipal demand is quite a bit lower than the irrigation demand. Pat Tyrrell added that to meet the demand for municipal use, petitions for changes in water rights from irrigation to municipal have come in to the Wyoming Board of Control (BOC). Loren Smith stated that consumptive use studies are done by the engineer and these studies accompany the BOC petition. There was a short discussion on the effect of change in irrigation practices and how that changes return flows to the drainage. It was pointed out that many projects that the NRCS Environmental Quality Incentives Program is funding is for systems that go from flood irrigation to sprinkler irrigation.

4. Tongue River Reservoir (MT DNRC)

Chuck Dalby reported that as of April 30, Tongue River Reservoir was at 62,000 acre-feet which is 67% of capacity and 112% of average. Through late April and the early part of May, water was drafted from the reservoir in anticipation of high inflows. They have been monitoring and measuring high electrical conductivity (EC) below the reservoir and at the Montana state line. The rise of EC has been noted during high flows. Art Compton stated that high EC values were first noticed in 2007 and occurs in mid-March to mid-April. The rise in EC seems to be an increasing trend independent of flow and could be a temporal issue. MT DEQ is meeting with WY DEQ (John Wagner) on June 1 and 2 to establish a road map for the future on how to handle this phenomenon.

5. Cooney and Glacier Reservoirs; Rock Creek drainage to Clarks Fork Yellowstone (MT DNRC)

Chuck Dalby reported that they have not been into Glacier Reservoir as it is still snowed in. Keith Kerbel reported that some repair work will be done on Glacier Reservoir and water will be evacuated to do work on the inlet and spillway. There is debris in the spillway that needs to be removed.

The capacity of Cooney Reservoir is 28,000 acre-feet and current storage is 22,000 acre-feet, with still a foot of snow sitting above the reservoir. Keith stated the reservoir operators do a good job of running this reservoir. Both Cooney Reservoir and Glacier Reservoir are state projects.

5. Reservoir discussion (reservoir inventory assignment given to Tech Committee)

Sue Lowry briefly described what brought the Committee to this discussion of reservoirs. Historically, the Technical Committee members reported on Tongue River Reservoir and other significant reservoirs. The Commission asked if any other relatively good sized reservoir were being missed and hadn't been discussed with the technical group. Montana and Wyoming agreed to produce a list of reservoirs greater than 1000 acre-feet. Wyoming has compiled that list and is prepared to distribute it at this meeting. Jen Wilson has worked with Keith Kerbel and the Montana GIS folks to develop a listing of reservoirs in MT. Keith suggested that the Technical Committee wait until the full Commission meeting in December to discuss these reservoirs so that Mary Sexton could be present for the discussion. Montana and Wyoming will develop a GIS map showing the location of the reservoirs on each of their spreadsheets. Montana will add Tongue River Reservoir to their list and expand the uses column to include all uses.

6. Coalbed Natural Gas
a. Montana

1. MT Department of Environmental Quality (DEQ) update – litigation and development

Art Compton reported that on the development side, the same 3 permits are still active in Montana for direct discharge to the Tongue River. The monthly average discharge is 1,455 gallons per minute (gpm), from the Fidelity site which has no treatment prior to discharge. Another discharge point, which has a Higgins loop treatment, is producing 1,100-1,200 gpm. Pinnacle has a treatment loop below a reservoir, but no discharge is allowed from this point. Fidelity has withdrawn their permit for the Deer Creek treatment unit. A new application has been received from a landowner to discharge treated water to the mainstem of Hanging Woman Creek. A draft permit from the MT DEQ will be issued in June or July. The permit will be scaled back considerably from what was requested as there are concerns over discharge potentially making Hanging Woman a perennial stream. The limits that the MT DEQ took the permit down to might affect the economics of the project. The ranch, on which this project lays, the OW Ranch, is for sale.

On the litigation side, the state litigation is complete; however, the federal litigation is ongoing. Briefs are due May 29th and there will be oral arguments on the four consolidated federal cases on July 9th.

A bill was introduced to MT legislature, HB 575, which proposed issuing water right permits for beneficial use of CBNG water. The bill did not pass.

2. MT Bureau of Mines and Geology - monitoring and studies

John Kilpatrick reported that there is a new report out on water level monitoring for 2008. This report can be found on the Bureau of Mines and Geology website.

b. Wyoming

1. WY State Engineer's Office (SEO) update – permitting development; legislation (Pat Tyrrell, WY SEO)

Pat Tyrrell passed out a copy a graph showing the coalbed natural gas applications that the State Engineer's Office, Groundwater Division has received from January 1997 to the present. He noted that zero applications were received in December of 2008. Natural gas prices are depressed and drilling has slowed considerably. (See [groundwater handout](#).)

Next, Pat handed out a copy of a table showing the number of reservoirs that are in a temporary filing status or permitted status in the Tongue River, Little Powder River and Powder River drainages. (See [surface water handout](#).)

Pat pointed out that this year, the total of all permits and filings is 2,909; in December of 2008, Wyoming reported filings and permits

totaling 3,083. This decline might be due to cancellations, eliminations, auto cancellations and the gas play finishing up in watersheds.

Operators have been inquiring as to what to do with reservoirs now that drilling is completed in a particular area. The reservoirs are no longer needed due partly as a function of economy, partly as a function of the play in basin being completed. The surface water division of the SEO is doing some research on how much drainage area is needed above a reservoir to maintain a 20 acre-feet capacity in the reservoir.

Pat described to the Committee the “show cause effort” which the SEO implemented. A question arose concerning CBM wells that are producing water but no gas for five consecutive years. After conducting some research, it was found that approximately 1100 wells met this criteria, however, it was also discovered that a majority of the wells had already been plugged and abandoned. The SEO established a policy that wells which are permitted for coalbed methane production and are producing water but no gas for five consecutive years must be cancelled and abandoned. Clear Creek and Crazy Woman Creek are two drainages that have been examined for existence of these types of wells.

During this year’s Wyoming legislative session, a water management bill was introduced which stated that discharges in excess of the natural capacity of the drainage could result in the operator being limited to discharging not more than the natural capacity of the system. The bill died because the landowners that requested bill in the first place opposed the bill once it was in front of legislature. Some landowners stated that the bill did not do enough.

Two lawsuits of interest to the Committee: West and Turner suits – two landowners in Powder River Basin sued the SEO over permitting practices. They complained that no public notice practice exists for permits that are not adjudicated. The case was dismissed at the District Court level and the Supreme Court upheld the decision with a suggestion that a future case be brought forward to address the procedural question of the timing of public notice. The Supreme Court stated that relief was never sought for plaintiffs and mitigation cannot occur for damage that was not proven.

Second lawsuit: Conjunctive management and regulation of groundwater and surface water - Bates Creek, tributary Platte River, south of Casper, WY. Two studies showed that these particular groundwater wells and the surface water are interconnected. The SEO suggested that the users find a way to solve problem. No solution was suggested and the hydrographer was forced to

regulate. The wells were shut off to satisfy the surface water users. The groundwater users appealed the decision to the Division Superintendent. The Division Superintendent agreed with the hydrographer's decision, so the users appealed that decision to the State Engineer. The State Engineer upheld the Division Superintendent's decision. The users then appealed the decision to the District Court and the District Court upheld the State Engineer's decision.

2. WY DEQ update – any rulemaking being done?

No report. Sue Lowry mentioned that WY DEQ was attempting to do watershed management plans instead of TMDLs. This effort was not as successful as anticipated and now TMDLs are scheduled to be completed on certain drainages in WY.

7. Tongue River USGS monitoring network (MT USGS) – John Kilpatrick

John passed out a handout showing funding for water quality monitoring sites in the Tongue River Watershed. Kirk Miller also added that there is a new site, 06306020, Tongue River below Youngs Creek near Acme, WY. The water quality information for this site can be found online.

The MT DNRC and the USGS proposed a study to use a parametric time-series model to analyze water quality data at all USGS sites in the Tongue and Powder River watersheds in MT. The MT legislature recently approved funding for the study which will begin in the fall of 2009 and be completed by the fall of 2011. The study will be conducted by the USGS Montana Water Science Center.

8. State Adjudication and Water rights

a. Montana

1. MT Tongue River adjudication – Keith Kerbel

Keith reported that in the Tongue River the objection stage has been completed. The Judge held two public meetings regarding the objections that were filed. Most of the objections were filed by the BIA and the Forest Service. A water master was assigned and she will hear the cases. This process will begin three months from now. The Water Master will start on Hanging Woman drainage first and start moving through the region. Pryor Creek is finishing up as long as the Judge agrees with the summary report. We are working on the summary report for both Rosebud Creek and Big Horn River. Decrees could be issued in the next year or so. Sage Creek still needs to be examined and there are 120 claims. The next big basin to be done will be Lower Yellowstone. The Glasgow and Helena offices will be working on that together.

2. Crow Compact update – Keith Kerbel

Nothing new to report. The Compact has been introduced to the 111th session of Congress and there are lots of federal dollars tied to this Compact. The Crow Tribe has yet to approve the Compact with the final step in the process being approval from the Water Court. Keith also reported that Cedric Blackeagle has just been elected as the new tribal chairman.

a. Wyoming – Loren Smith

Loren reported that the ceremonial passing of last permit to court, had taken place and then two more were found to adjudicate. The last inspection will be done tomorrow on Owl Creek. Some objections still exist and hearings are scheduled through the summer. Certificates of Appropriation have been issued on Permit No. 7300 which covers nearly 100,000 acres of lands served by three irrigation districts.

b. Tribal gages

Negotiations with the BIA and the Department of Interior have taken place to reactivate 5 gages on the Wind River Indian Reservation. The SEO felt these gages were critical to water administration. The SEO was successful in their request and the gages were funded for this year by the BIA. A meeting is scheduled for the first week of July to negotiate funding for the future. The gages include Wind River at Red Creek, Left Hand Ditch, Upper Wind A, Johnstown Creek, and Dry Creek Canal.

c. Doug Davis left the BIA to work for the BOR as their Indian Affairs Director.

9. Discussion of website for the Commission and archiving of meeting minutes and PowerPoint presentations – Bill Horak

Scott McEwen has been placing items on the YRCC website. Scott advised Bill that he will continue to be the webmaster for this year, but the Commission will need to check on the status of Scott's availability to do this year by year. Bill asked if the Committee would like to have links to the PowerPoint presentations and handouts on the website. The Committee indicated that they would, therefore, the handouts that were passed out in hard copy will be provided in an electronic format so that they can be placed on the website. Bill asked about the 2008 YRCC Commission report. The 2005-2007 reports are posted on the website. Wayne Berkas reported that for the 2008 report, he is waiting on minutes from the December meeting. Wayne requested that the revisions to the minutes be completed and sent back to him by the end of May. There was a short discussion on revisions to the transcript. Wayne stated that the original transcript is not in the possession of the USGS. Wayne suggested that revisions be made to the paraphrased version of the minutes. A short discussion concerning approval of final minutes took place and Bill Horak suggested that a public notice of the minutes take place followed by a conference call with any comments. Bill stated that he would like finalization of the minutes before the next full commission meeting. Wayne also

requested that if comments are emailed, that both WY and MT be included in the email.

10. Public comment – no public comment

11. Other reports - Kirk Miller

Kirk stated that he has hard copies of some new reports for the Yellowstone River Basin. Also, several USGS cooperative gaging sites have been put on NWIS web. Kirk further reported that two Coney Creek sites will be discontinued and the keys will be handed over to City of Sheridan.

The USGS has been funding a gage through NSIP on Shell Creek which contains 54 years of record and this is not an NSIP gage. USGS is looking for partners in funding this gage.

Kirk has been working with Jim Fahey with the National Weather Service on the use of data from NSIP gages and their application in forecast models.

Approximately \$15 million has been appropriated to upgrade infrastructure. WY got less than 1% of this money, but it will bring WY up to 100% of high data rate. Sue Lowry asked about stimulus money for cleaning up equipment/hazards at discontinued gaging sites. Kirk stated that there is a prioritized list but they still don't know which sites were selected because station numbers were not attached to the list received from USGS headquarters. About 4-5 sites look to be funded.

12. Next meetings

a. Full commission meeting in Nov. – Dec. (WY host)

The next full Commission meeting will be held in Powell, WY on December 1, 2, or 3rd.

b. Next technical committee meeting (MT host) – not scheduled

1. Recap and work assignments from this meeting

Reservoir list – Both WY and MT agreed to refine their list of reservoirs and provide a GIS coverage of the same at the full Commission meeting in December.

The meeting adjourned at 1:10 pm.

Attendees
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Technical Committee Spring Meeting
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Dayton, WY
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