

Summary of CBM Hydrology Task Group Meeting

3/31/05

Teleconference

(Notes taken by Andy Bobst, BLM-Miles City)

Participants:

Andy Bobst - BLM, Miles City FO

Mike McKinley – BLM, Buffalo FO

Rick Schuler – BLM, WYSO

Jim Gazewood – BLM, WYSO

Tom Reid – MDEQ

Pat Potts – MDEQ

Jim Lloyd – MDEQ

Don Fisher - WDEQ

Dan Hengle – WDEQ

John Lambing – USGS, MT

Melanie Clark – USGS, WY

John Barnes – WSEO

John Wheaton – MBMG

Jason Whiteman – Northern Cheyenne Natural Resources Department

Sam Vance - EPA Denver

John Reber – NPS

Brad Rogers - USFWS

Proceedings:

0830

Round Robin Agency Updates (Information Sharing)

Andy Bobst gave an overview of the injunctive relief hearing in Billings, and informed the group that the MT-BLM had approved the Powder River Gas' Coal Creek POD, and Fidelity's Dry Creek, and Coal Creek PODs since September. Jim Gazewood asked if any injunctive relief would extend into Wyoming due to the hearing. Andy indicated that he did not think so.

As an add on to this, Judge Anderson ruled on injunctive relief on 4/5/05, and accepted the BLM proposal for allowing limited interim CBNG development in MT (<500 total wells per year) within a defined geographic area (near Decker), with some additional mandatory mitigation measures. (ALB)

Dan Hengle asked what the status of Fidelity's existing permit to the Tongue River is. Tom Reid indicated that this permit has expired; however it continues to be in effect until a determination is made. This permit is under review at this time and must be reworked to address flow based standards.

Tom Reid indicated that Powder River Gas had been issued a discharge permit for the discharge of treated CBNG water to the Tongue River below the dam in December, and they should be up and running soon. As noted above, Fidelity's existing permit is

currently under review to address flow based standards. This flow based approach will probably allow for more discharge during high flows. Fidelity has also applied for a permit to discharge up to 1700 gpm of treated CBNG water to the Tongue River.

Jason Whiteman inquired further into the status of the permits, in particular concerning if the permits were full permits, or interim permits. Tom Reid indicated that the MDEQ did not have the authority to issue interim permits. Either a permit is issued or it is not. There is the ability to re-open a permit for modification if needed.

Tom Reid also indicated that TMDL work is ongoing in the Rosebud, Tongue and Powder watersheds, with ongoing coordination between MDEQ, WY-DEQ, and the EPA. The EC and SAR impairment listings have been lifted for the Tongue River; however the lower 12 miles is still listed as impaired due to dewatering (flow modification). They are unsure how the models prepared for the TMDL will play into permitting. Alternative models are being used at this time.

Dan Hengle indicated that WY-DEQ is starting to work with watershed based permitting on a couple of streams (Pumpkin Creek and Willow Creek), and that they are getting a contractor tied in at this time to assist in the process. They hope to soon kick off this approach in the Fence Creek and Clear Creek watersheds. WY-DEQ has invited a variety of stakeholders to be involved in this process, and they are holding facilitated meetings. Dan indicated that if anyone who thought they should be included had not been that they could let Dan know and he would add them to the list.

Dan Hengle indicated that the WY-DEQ permit writers are staying quite busy with both permit renewals and new permits. Dan also indicated that WY-DEQ continues to work on issues relating to assimilative capacity with the MT-DEQ. There are several types of models which may be used.

Don Fisher indicated that new language was being looked at to deal with pits and impoundments. Don indicated that basically the new policy would require classification of the waters which exist beneath proposed impoundment sites prior to discharge into the impoundment being allowed. If the underlying water is class 1, 2, or 3, monitoring will be required. They have seen a change in the class of use at one impoundment site. Since Wyoming law is protective of the class of use for all groundwater, and not just for useable aquifers, there is some question as to if impoundments can be allowed at all. It was suggested that the duration of impacts and the geographic extent of impacts should play a role in this determination. Don indicated that there was an ongoing project looking at the extent of impacts that were occurring from impoundments.

Industry has indicated that impoundments are the only option they have for water management in some areas, since injection zones are deep and NPDES permits are not likely to be forthcoming. Some operators are looking at injection into the Madison.

Jason Whiteman asked how the siting of impoundments was dealt with since improper siting can cause major problems, including blowouts. On the Northern Cheyenne

reservation only 2 reservoirs of 22 damaged during a storm were determined to be sited well enough to be worth rebuilding.

Don Fisher indicated that for off-channel impoundments setback distances from waters of the state were required; however for on-channel impoundments there is not an analysis of siting relative to hydrologic setting. There needs to be monitoring to deal with the potential groundwater impacts if class 1,2 or 3 waters underlie the site, therefore industry tries to site them where the groundwater is class 4. John Barnes indicated that the location of impoundments is often primarily a function of where the surface owner wants it.

Andy Bobst asked if there was such a thing as a "non-use" aquifer classification that could be worked out for groundwater that was not being used, and would not affect surface resources. Don indicated that the class 4 designation, which is based on water quality, was the only "non-use" type concept for Wyoming. For classes 1,2, and 3 protection applies to the intended use, not the actual use, and a change in the class of use is not allowed.

Rick Schuler inquired if the WY-DEQ had completed guidance to industry relating to well completion and sampling. Don indicated that the well completion guidance was out, and the sampling guidance was being prepared. Mike McKinley indicated that they had seen some problems with well construction techniques and problems with the samples not being representative of the water in the aquifer. Don indicated that the guidance would address sampling by using a turbidity standard (high turbidity = filtration required). Don is hoping to get this out soon, however some issues still need to be worked out between DEQ and BOGC.

Jim Gazewood indicated that the Buffalo BLM office and the WY-DEQ had met on the issue of Water Management Plans which are submitted to BLM with PODs. This meeting was to develop a better understanding of the BLM process for evaluating WMPs; particularly with regard to downstream concerns and areas of overlapping jurisdiction.

Don Fisher brought up the topic of bonding for on-channel impoundments. Mike McKinley indicated that BLM was bonding off-channel impoundments but thought that DEQ was bonding the on-channel. Jim Gazewood indicated that BLM should use the same bonding formulas and that they are working to get this figured out. The BLM can work this out on Federal surface and Federal minerals. Mike asked how this would relate to impoundments which allow surface water to run into them, and are used for stock water. Don was not sure how that would work out.

John Barnes indicated that the WY-SEO surface water division had gotten supplemental budget from the WY legislature to help clear the backlog of water rights applications. They are now working mandatory 50 hour weeks to try to catch up. With this they are clearing ~300/month off of their 2500 application backlog. WY-SEO has also hired consultants to do monitoring. This monitoring has shown that there are many un-permitted impoundments in the areas looked at; thus they plan to use consultants more to

do inspections in other areas. WY-SEO has also added a dam inspector in Sheridan who will look at all sites; not just SW3s.

Jim Gazewood indicated that the WY-BLM had issued ~2750 APDs in FY04, and that they hit their FY04 target of 3000 in the first week of December. For FY05 their target is 2000 APDs. So far in FY04 ~600 APDs have been issued, 1400-1500 are being worked on, and ~150 are waiting to be worked on. Jim also indicated that there was concern that the number of conditions of approval (COAs) that were being applied to the APDs were getting excessive. In order to reduce these they are trying to get industry to work with BLM early in the process so that more complete PODs are submitted and the COAs are not needed. The BLM is also trying to get their geospatial database up and available to industry so that issues can be resolved in advance. Need to get "**complete**" PODs.

Status of SW Monitoring network (USGS)

Surface Water Monitoring Summaries:

Tongue River Watershed (JL):

All 11 of the sites identified by this group are being monitored. 12 sites are being monitored in the Tongue River Monitoring Network. 7 are main stem sites and 5 are tributary sites. These include the 11 sites monitored in the past plus an additional station on the Tongue River main stem above the T&Y diversion dam. The new site was established in November 2004.

Powder River Watershed (JL&MC):

9 of the 11 sites that this group identified area being monitored. The station on the Powder River at Moorhead also has a real-time specific conductance (SC) monitor. The Powder River at Powderville, and Mizpah Creek at Mizpah are not active at this time.

Rosebud Creek Watershed (JL):

Only one site of the 3 identified by this group is being monitored. This is the site on the southern boundary of the Northern Cheyenne reservation. It is planned that SC will be monitored in real time at this site.

Belle Fourche Watershed (MC):

Six of the seven sites identified by this group are being monitored. The site below Rattlesnake Creek is not active at this time. The site at the state line only has flow data, not water quality.

Cheyenne Watershed (MC):

All six of the sites identified by this group are being monitored. There are some issues with the sites at Riverview and Spencer due to beaver activity.

Surface Water Monitoring Discussion:

The new station on the Tongue River above T&Y diversion dam should be more representative of the total quantity and quality of outflow from the Tongue River watershed. The dam causes much of the flow to be diverted to the Yellowstone valley during low flows, thereby significantly impacting the flow and water- quality data

collected at the mouth of the Tongue River at Miles City . This station has been added to the Tongue River Monitoring Network webpage. Details of the Tongue River network can be found at <http://tonguerivermonitoring.cr.usgs.gov>.

Water quality data is being compiled now and should be available in the USGS annual water data reports “Water Resources for Montana, 2004” and “Water Resources for Wyoming, 2004” in the next few weeks. The data books will be published in book form (limited numbers), on CD, and via the website <http://water.usgs.gov/pubs/wdr> . The data should be loaded on the USGS national database by July, which is accessible via the website <http://waterdata.usgs.gov/nwis> . Provisional and final approved data also are available on the USGS Tongue River webpage. The USGS plans to put together a general summary of the 2004 water-quality data for the Tongue River network that will be posted on the Tongue River website. The summary will include a comparison of data among sites and to surface water standards and guidelines.

Sampling at sites in the Tongue River network has been modified somewhat due to funding reductions. The sampling frequency on the main stem Tongue sites has been changed from 20/yr to 18/yr by eliminating the January and one of the February sampling events, since these months are typically hydrologically inactive periods. Sampling for most metals and nutrients has been reduced from 12/yr to 6/yr. Mercury (Hg) has been a non-detect for most samples at the routine detection limit of 0.02 ug/L; however on Pumpkin Creek concentrations are typically 0.3-0.5 ug/L regardless of flow. Therefore, Hg sampling will be reduced to 2/yr, but will be analyzed using a very low detection limit method (about 0.05 nanograms/liter, or 0.00005 ug/L). It is thought that the Hg is related to the sediment, but these lower detection limit methods should help to clarify this and to possibly reveal spatial patterns within the basin that cannot be observed with standard detection limits. Seasonal SC (generally about April – October) is still being collected in real time at all 11 sites in the Tongue River network, plus at the new site on the Tongue River above T&Y diversion dam.

The regression equations used to estimate provisional real-time SAR in 2004 are being updated by incorporating the 2004 analytical data for the water-quality samples. The new equations will be used to recalculate the daily SAR values for 2004. In most cases, the adjustments will be very minor. However, review of the relations indicate a notable shift in the historical relation at two sites that precludes estimation of real-time SAR for Tongue River at Dam and Tongue River at Birney Day School in 2005 until sufficient data have been collected to develop a current, reliable regression relation. Estimates of SAR for the Tongue River at Monarch and Goose Creek near Acme can now be done. The revisions of these equations will be described on the Tongue River website. Information on these revisions for estimating SAR should be posted on the network website by about mid-April.

Jason Whiteman asked why the narrow range of flows was an issue for 2004 data if it is a relationship between SAR and SC. John Lambing indicated that since SC and SAR vary with flow, a statistically significant relationship that can predict SAR (from high to low values) needs to have a range of flows in order for a range of SC and SAR values to be

observed. In addition, historical data for the site below the dam indicate distinct seasonal variations that may be due to processes within the Tongue River Reservoir and which are not yet clearly defined for the newer data. Recent data have clustered within a very narrow range of values that only represent low-flow conditions and are not adequate to estimate what SAR would be at higher flows. After samples are obtained at higher flows, the new data will be used to develop a current relation that can be used to estimate SAR over a broad range of conditions. In the interim, the laboratory analytical data obtained from periodic water-quality samples will be available to track SAR conditions at Tongue River at Dam and at Birney Day School.

It is hoped that the real-time SAR analyzer will be up and running at the Tongue River at State line station in May. This instrumentation will actually analyze Ca, Mg, and Na in-situ. If this first unit works, a second unit will probably be installed below the Dam or at Birney Day School. Andy indicated that he thought that the Birney Day School site would be good since there may be issues relating to the Northern Cheyenne standards if Treatment as a State is granted.

Melanie Clark gave an update of the monitoring being conducted in Wyoming (see summaries above). She indicated that data is being finalized for WY as well, and that data is available through early March at <http://wy.water.usgs.gov/data.htm#Water-Quality>. Most of this monitoring in WY is funded through the WY-DEQ. The WY-DEQ is also monitoring ~35 other sites which are not part of the regional plan, but are available through the WY USGS website above.

Rick Schuler asked if the WY monitoring was just data at this point, or if there were plans to interpret this data and prepare reports. Melanie indicated that right now it was raw data, however they are hoping to get some funding from EPA in ~April to do some interpretive work, particularly in the area of SC-SAR relationships.

The Cheyenne and Belle Fourche monitoring plans, which the EPA and USGS have been working on should be near completion.

The Aquatics task group has also developed a monitoring network to look at aquatic life. USGS will do this sampling, with Dave Peterson being the contact. There will be ~20-30 sites in WY, and ~12 in MT. There was some concern that there may be the need to coordinate more closely with the aquatics group so that the monitoring ties in well. It was felt that this could be resolved by making sure that the minutes from our meetings were sent out to the aquatics group, and that the aquatics group sent out their minutes to us. Andy Bobst and Joe Platz (both from BLM-MCFO) will coordinate this exchange.

Status of Impoundment Regulations (DEQs)

Tom Reid indicated that similar to WY it is "groundwater" that is protected in MT, not aquifers. Per the Hadden decision (CBNG water = pollutant) permits are needed to discharge CBNG water into impoundments. The protection of groundwater applies to protection of its class of use (1,2,3,4). There are existing impoundments both on and off channel along Squirrel Creek.

Don Fisher asked if there was some sort of de minimus determination that could be made, particularly with regard to thin water bearing zones (i.e. they do not produce enough water to be "useful"). Tom indicated that there have been several attempts to work this out; however there has been no success as yet. It would be nice to have some sort of minimum value (gpm) to work with. Don indicated that he thought that for WY-DEQ to go in that direction they would probably need direction from the legislature, or possibly major regulation changes. Tom noted that MT law did allow for mixing zones, so degradation could be allowed; however change in class of use could not. They must protect the potential uses.

John Wheaton indicated that monitoring of impoundments had shown a decrease in TDS with time, and that it appeared to be mainly due to flushing of salts with time. Mike McKinley asked how this compared to the rate of infiltration from the impoundments, and if a change in this rate may be what is causing this change rather than a lack of salts. John indicated that he could not say for sure, however the ponds did continue to have water in them, and so unless they had sealed there should still be water infiltrating. It could be partly due to change in flows, but it really "looks like" flushing. Analytical results will be needed to define this better.

WY Govs. Streamlining & Strengthening Initiative (Jim Gazewood)

Starting in May 2003 the WY-Governor instructed agencies that they needed to monitor activities better. In order to achieve this the Streamlining and Strengthening Initiative was started. This was to include DEQ, SEO, Oil&Gas, BLM and Forest Service. The focus was to be on areas of split estate. One of the identified funding needs was for web-data dissemination. Through this the DEQ and Oil&Gas got funding for databases and a web presence.

One survey that this group put out was for the top 5 data needs for permitting. Water quality data was a top contender. Need to be able to share data between agencies and industry. Need to bring all the data together. Jim indicated that he could send out a summary of the sites, and the results of the studies.

It was clear that the monitoring data being collected at the surface water stations identified by this group should be pulled in as well. There is currently an attempt to attain ~\$80-90K to get the different data pulled together. There is also movement to get a "proof of concept" (beta test) of this system up. In April they hope to get the go ahead for the proof of concept work.

It seems that this effort, if successful, may fulfill the data dissemination needs for this group. We will need to coordinate closely with them to see how that would work. It was agreed that this should be discussed in more detail on another call.

Groundwater Monitoring Network (MBMG/BLMs)

Due to time constraints this was not discussed in detail.

1030 – End of meeting – End of Bridge reservation.