Meeting Notes

Agency: State of Wyoming Department of Environmental Quality District 3 Office (DEQ)

Location: Sheridan, WY

Date: January 14, 2009

Attendees:
Irene Yu, NRC
Behram Shroff, NRC
Nancy Barker, VHB
Tracy Hamm, VHB
J. Stewart Bland, Chesapeake Nuclear Services
Brian Kuehl, The Clark Group
Lori VanBuggenum, The Clark Group
Mark Rogaczewski, District 3 Supervisor, DEQ Land Quality Division District 3
Don Fischer, North District Geologic Supervisor, DEQ Water Quality Division
Glenn Mooney, Professional Geologist, DEQ Land Quality Division District 3

Purpose:

To better understand DEQ's process for permitting deep well injection, discuss any concerns or issues over Nichols Ranch and Moore Ranch applications, understand what licensing and permitting responsibilities they have, talk about being a commenting vs cooperating agency

Discussion:

- DEQ has a 2 tier process
  - o Completeness review – Moore and Nichols Ranch deemed complete
  - o Technical review (150 days to complete) – Moore and Nichols Ranch both in process, Moore Ranch to be reviewed ahead of Nichols Ranch
- DEQ's initial assessment of both applications
  - o Moore Ranch application does not contain enough data, geologic data doesn't match up
  - o Nichols Ranch application slightly better although still has inconsistencies
- Numerous applications coming in for mines – coal, bentonite, gold, ISL – DEQ doesn't have enough staff to review all of these applications
- DEQ's review not tied directly to BLM's review
- DEQ does believe that CBM, ISL, and O&G can all occur in sync
- Leaks, spills, breaks happen and the applicant has reporting requirements they have to adhere to
- DEQ will be looking closely at the applications to see that there are confining layers and drawdown so as to limit excursions
- DEQ's permit will dictate monitoring well sampling, frequency, depths, MCLs, construction, MITs
  - o Key parameters for excursions are total alkalinity, chlorides, pH, conductivity
- Unconfined aquifer
  - o Glenn was concerned if they can even do ISL under this condition
  - o Can arrange wells to try and better pull in excursion

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- o Problem is during restoration – may have a hard time returning to baseline or class of use designation
- o And even if restored to baseline or class of use, having an unconfined aquifer could have restored water flow out to better quality water
- o Reno Creek – operated in the late 1970s
  - 2 patterns
    - 1st pattern – used acid lixiviant, got few pounds of yellowcake, didn't account for calcium in ground and created gypsum, DEQ signed off on restoration
    - 2nd pattern – used bicarbonate leach, successfully restored, DEQ signed off
- Underground injection wells
  - o In past, DEQ has seen applicants drill into the Lance formation, Cogema had hard time drilling into Lance
  - o Madison Formation underlies PRB – deep in some areas, shallow in other areas
  - o DEQ would like to see applicants drill deep wells into Middlusa formation
- Regarding water use, ISL is a small user of water by comparison to CBM
- Use of evaporation ponds
  - o Glenn likes them because they are easy to retrieve the water if a mess up occurs
  - o Concern is with the accumulation of metals – pH monitoring necessary
- CBM operations ongoing for Nichols, tapering off at Moore Ranch
- No coal mining on horizon for Nichols or Moore – too deep and no rail line for transportation of coal
- DEQ would like to standardize applications to applicants don't have to submit different documents to NRC, DEQ, and BLM

Questions:
- What is the impact if restored water in an unconfined aquifer flows out of the unconfined aquifer into better quality water?
- What is DEQ's class of water near and around both sites?
- Are the groundwater standards being proposed in the new rulemaking different from EPA or DEQ's standards? (Gary Comfort)
- Can NRC standardize its source materials license applications to conform more to what DEQ and BLM require?

Action Items:
- Review Reno Creek information on docket (Ron Linton)
- Look at DEQ's guidelines for mining permits for possible standardization of applications