

Meeting Notes: Discussion of Ten Groundwater Studies for SNL/NM

The meeting was held on **January 16, 2013** at the NMED Regional 1 Office.

Attendees:

John Weckerle, DOE/NNSA
 William Moats, NMED HWB
 Brian Salem, NMED HWB
 Sid Brandwein, NMED HWB
 David R. Miller, SNL/NM ER
 John Cochran, SNL/NM ER

Mike Skelly, SNL/NM ER
 Clinton Lum, SNL/NM ER
 Robert Ferry, CE2 Corporation
 Tom Berry, CE2 Corporation
 John Copland, CE2 Corporation (recorder)

Groundwater issues were discussed for ten groundwater studies in the following order:

1. SWMU 154

- Clinton Lum distributed a 13-page handout. SWMU 154 is located in the Travertine Hills.
- The eight supplemental rounds of groundwater sampling required by NMED/HWB in their April 2010 letter have been completed at the single well (CTF-MW2) at SWMU 154. DOE/Sandia believe that the elevated concentrations of arsenic in groundwater from monitoring well CTF-MW2 are naturally occurring. Deep-sourced groundwater is apparently mixing with shallower groundwater, as evidenced by general chemistry parameters that are quite different from other wells in the area. Trace concentration of RDX have been detected. Spurious detections of toluene for the last two sampling events are mostly due to pipes/fittings in the new sampling truck.
- Because well CTF-MW2 is located about 300 feet from the HE seepage pit, Brian Salem questioned whether the well was located at an effective monitoring location.
- Will Moats explained the rationale that was used by NMED and DOE/Sandia to select the well locations at the various Drain and Septic Systems (DSS) sites. The rationale was based upon topography, the regional potentiometric-surface configuration, and anticipated time-delay effects. Because a well would be installed several years after a potential release had occurred, the well needed to be located far enough downgradient to intercept any possible plumes. Installing a well near an inactive seepage pit would have been pointless because no ongoing water release was occurring there.
- Will Moats suggested that DOE/Sandia consider excavating the soil near the seepage pit. Even though the soil already passes risk assessment criteria, NMED upper management might be more inclined to approve a Corrective Action Complete (CAC) Proposal knowing that the potential source term had been removed. Source-term removal was mentioned several times by NMED staff. No additional well installations or groundwater sampling is anticipated.
- NMED requested more time to study the handouts before providing a response.
- Clinton needs to submit groundwater analytical data for barium to NMED. Barium is a constituent in some HE compounds.
- As needed, Brian will request more information from Clinton.
- Brian will need to do a presentation to upper NMED management. NMED will then submit a letter to DOE/Sandia that lays out the best course of action.

2. SWMU 149

- Clinton Lum distributed a 13-page handout. SWMU 149 is located in the Travertine Hills.
- The eight supplemental rounds of groundwater sampling required by NMED/HWB in their April 2010 letter for the single monitoring well (CTF-MW3) at SWMU 149 have just been completed. Analytical results are available for seven rounds. Spurious occurrences of toluene at very low concentrations have been reported for the last two sampling events. DOE/Sandia believes that the toluene values are due to pipes/fittings in the new sampling truck. Analytical results for event 8 will be available soon.
- Will Moats noticed that the selenium concentrations in groundwater appeared to be slightly elevated. He requested that DOE/Sandia supply the analytical results for sediments in the seepage pit. DOE/Sandia also need to check to see whether or not selenium was used in testing activities.
- Clinton will submit the requested information to Brian.
- Brian will need to do a presentation to upper NMED management. NMED will then submit a letter to DOE/Sandia that lays out the best course of action.

3. Burn Site Groundwater

- Mike Skelly led the discussion for DOE/Sandia.
- Monitoring well CYN-MW1D was recently plugged and abandoned. Replacement well CYN-MW13 was installed nearby in the same fracture zone. The P&A/Installation report is currently being prepared.
- Well CYN-MW3 is dry because the water level dropped below the screen in 2012. Because this well is located on the margin of the nitrate plume and much historical analytical data is available, the need to replace the well was not immediately apparent. Will Moats will talk with his upper management to determine if DOE/Sandia should replace this well.
- Well CYN-MW6 (a “player” well with nitrate above the MCL and perchlorate above the 4 ppb screening level) is nearly dry. Brian Salem said that this well definitely needs to be replaced.
- Wells CYN-MW3 and CYN-MW6 will remain (not be P&A’d) in case water levels recover enough to re-submerge the screens.

4. Tijeras Arroyo Groundwater

- Mike Skelly led the discussion for DOE/Sandia.
- Well WYO-4 (the perched, “player” well for TCE) is almost dry. DOE/Sandia questioned if the well needs to be P&A’d and replaced. Will Moats recommended that the ownership for this well be transferred to KAFB because that well is not located at a SWMU and does not monitor any known Sandia activities. Before transferring the well to KAFB, DOE/Sandia should submit a letter to NMED if the water level at well WYO-4 drops below the bottom of the screen and the well can no longer be sampled.

5. Technical Area V Groundwater

- Mike Skelly led the discussion for DOE/Sandia.

- The eight quarters of groundwater sampling at the four new wells has been completed. DOE/Sandia proposed that the four new groundwater wells be sampled at a frequency using a strategy consistent with the existing well network: (1) if TCE is detected in a well, continue to sample quarterly; (2) if no TCE is detected in a well, sample semiannually. Moats responded that the four new wells should continue to be sampled quarterly (maintain the current frequency). Will requested that a comprehensive data set be prepared and sent to NMED so that they can evaluate the proposed change in sampling frequency.
- Mike Skelly will compile the groundwater data package for the four new wells and submit to NMED for review.
- Seven of the eight soil-vapor sampling events have been completed at the three soil-vapor monitoring wells. Will requested that DOE/Sandia submit a data package to NMED when soil-vapor results are available for all eight events. This does not need to be a formal report. Will stated that soil-vapor sampling can be discontinued after the eighth event is completed in March 2013.
- When the analytical data is available, Mike Skelly will compile the soil-vapor data package and submit to NMED for review.

6. SWMU 8/58

- Clinton Lum led the discussion for DOE/Sandia.
- SWMU 8/58 is located at the western end of Lurance Canyon.
- Five of the eight required sampling events have been conducted for the two new monitoring wells (CCBA-1 and CCBA-2). No groundwater contamination above MCLs has been detected, except for possibly fluoride. The elevated fluoride concentrations in one well are most likely naturally occurring. Will said that land-use controls maybe needed for that well.
- DOE/Sandia anticipate submitting a CAC Proposal after the eighth sampling event if analytical results are consistent. Groundwater sampling would cease, but water levels would continue to be measured.

7. SWMU 68

- Clinton Lum led the discussion for DOE/Sandia. SWMU 68 is located in the Coyote Test Field.
- Five of the eight required sampling events have been collected from the three new wells (OBS-MW1, OBS-MW2, and OBS-MW3). No groundwater contamination above MCLs has been detected.
- DOE/Sandia anticipates submitting a CAC Proposal after the eighth event if the analytical results are consistent. Groundwater sampling would cease, but water levels would continue to be measured.

8. SWMU 49

- Mike Skelly led the discussion for DOE/Sandia.
- SWMU 49 is located on the western edge of the Withdrawn Area in Lurance Canyon.
- Well CYN-MW5 is sampled annually and is reported as a separate section in the Annual Groundwater Monitoring Report (AGMR). No groundwater contamination has been detected.

- Will Moats wants to see the entire data set before providing a response.
- Mike Skelly will compile the groundwater data package and submit to NMED for review.
- If warranted, HWB-required sampling could be discontinued and no land-use controls needed. If deemed appropriate, DOE/Sandia may continue sampling at this location as part of the Groundwater Protection Program.

9. SWMU 116

- Mike Skelly led the discussion for DOE/Sandia.
- SWMU 116 is located in the foothills just east of the EOD Range.
- Well CTF-MW1 is sampled annually and reported as a separate section in the AGMR. No groundwater contamination has been detected.
- Will Moats wants to see the entire data set before providing a response.
- Mike Skelly will compile the groundwater data package and submit to NMED for review.
- If warranted, HWB-required sampling could be discontinued and no land-use controls be needed. If deemed necessary, DOE/Sandia may continue sampling at this location as part of the Groundwater Protection Program.

10. Monitored Natural Attenuation (MNA) Study for the Burn Site Groundwater (BSG) Area of Concern

- Bob Ferry led the discussion for DOE/Sandia. Currently, CE2 is preparing a new CME Report that will be submitted to NMED in September 2013.
- Groundwater analyses for the MNA and age-dating constituents should be available in February 2013. The data will be used to determine if denitrification is occurring and will be presented in the forthcoming Current Conceptual Model (CCM).
- A consensus was reached to reduce the list of six alternatives previously presented in the approved Work Plan to just three: (1) MNA, (2) In-situ Bioremediation [ISB], and (3) Pump & Treat. MNA may also be a remedy component for ISB and Pump & Treat to address low concentration areas of the nitrate plume. A Monitoring-Only alternative will not be included. However, monitoring will be a component of all alternatives.
- NMED said that if groundwater re-injection is a component of a remedial alternative, pre-injection treatment must reduce nitrate concentrations to below the nitrate MCL of 10 mg/L. There was discussion of re-using extracted groundwater (e.g., watering landscaping) as opposed to re-injection, but the consensus was that there was not a practical application for this at the Burn Site and offsite locations were too distant.
- Will stated that nitrate is the only contaminant of concern (COC). Perchlorate concentrations (detected only in CYN-MW6) have already passed the risk-assessment screening in compliance with the Order as discussed in the approved 2008 CME Work Plan. A stable nitrate plume would be acceptable. A reasonable time frame for reaching remediation goals, say 25 years or so, needs to be evaluated.
- The consensus was that, from a practical standpoint, ISB or groundwater extraction elements of remedial alternatives should be focused on the higher concentration portion of the plume (i.e., within the 20 mg/L contour) with MNA being used to address nitrate concentrations between 10 and 20 mg/L.
- Bob stated the remedial alternatives presented in the CME Report will incorporate enough flexibility to optimize the cleanup as the remedy progresses without the need to

formally modify the decision document. A contingency plan will be included in the subsequent Corrective Measure Implementation Plan.

- An updated CCM is also being prepared. The CCM will incorporate data from the newest monitoring wells and the MNA/age-dating constituents. The CCM will also be submitted in September 2013.

Next Meeting:

- Another meeting will be held in three to four months.

Electronic attachments:

SWMU 149 Handout

SWMU 154 Handout

Distribution:

John Weckerle, DOE/NNSA
William Moats, NMED HWB
Brian Salem, NMED HWB
Sid Brandwein, NMED HWB
David R. Miller, SNL/NM ER
John Cochran, SNL/NM ER
Mike Skelly, SNL/NM ER
Clinton Lum, SNL/NM ER
Robert Ferry, CE2 Corporation
Tom Berry, CE2 Corporation
John Copland, CE2 Corporation