Monthly Progress Report
Corrective Measures Evaluation (CME)/Corrective Measures Implementation (CMI) for Consolidated Unit 16-021(c)-99
September 2011

This report summarizes Los Alamos National Laboratory (LANL) activities completed during September of fiscal year (FY) 2011 on the CME/CMI for Consolidated Unit 16-021(c)-99, the Technical Area 16 (TA-16) 260 Outfall. Activities outlined in the corrective measures study (CMS) plan ([LA-UR-98-3918] approved by the New Mexico Environment Department [NMED] Hazardous Waste Bureau [HWB] on 9/8/99) and other related activities are described herein.

Description of Activities and Contacts – A meeting with NMED Surface Water Quality Bureau and HWB personnel was held on September 16, 2011, to discuss the pending draft National Pollution Discharge Elimination System (NPDES) permit for the three spring storm filters issued by the U.S. Environmental Protection Agency (EPA) on August 27, 2011. The key issue addressed was the effluent limits for inorganics such as silver, thallium, and copper. Because the proposed limits are so low (at or near the method detection limits) and existing data for these constituents suggest the limits will be exceeded occasionally, LANL cannot risk turning on the storm filters and incurring the associated fines. LANL suggested it would comment on the draft permit to request these constituents be evaluated using monitoring and reporting only—similar to the relief provided for aluminum, which is also present in the springs. NMED personnel were somewhat receptive to this proposal but noted EPA was the final arbiter on the permit and had little leverage in this area. NMED suggested LANL resample the springs with lower detection limits and submit these data in its response to the draft permit. NMED also suggested that LANL request an extension on the permit to implement this strategy. Based on this meeting, LANL requested an extension from EPA, which was granted, and resampled the springs using more sensitive analytical methods.

Surface CME/CMI

Best Management Practices (BMPs) – BMPs are inspected quarterly and following significant precipitation events. Over a dozen rain events occurred in September, and two exceeded 0.5 in.

CME Hydrogeologic Investigations – Hydrogeologic investigations include periodic water sampling as outlined in the Phase II Resource Conservation and Recovery Act facility investigation (RFI) work plan as well as continuing investigations delineated in the CMS plan. The ongoing water sampling program, conducted under the auspices of LANL's interim facility-wide groundwater monitoring plan, includes biannual sampling at Martin, SWSC, and Burning Ground Springs.

Sampling within the Cañon de Valle watershed was completed in September, except for those alluvial wells destroyed by flooding in August and those locations containing no water.

Flow in the TA-16 canyons increased in September from the intense monsoonal rains. Martin Spring is flowing at a rate of ~ 0.1 L/s, Burning Ground Spring is flowing at a rate of ~ 0.3 L/s, and SWSC Spring continues not to flow over the weir-box exit. Of the remaining

alluvial wells, those in Cañon de Valle and Fishladder Canyon are wet, but only the farthest downgradient well in Fishladder Canyon contained enough water to sample. The lowermost well in Martin Spring Canyon is also wet.

The 90s Line Pond has refilled and is near its maximum extent. Surface water is present in Cañon de Valle from upstream of the 260 Outfall channel to beyond the former location of Material Disposal Area P.

CMI – Progress was made on NPDES permitting for the storm filter systems at three springs. The EPA issued a draft permit for public comment on August 27, 2011. This permit requires monitoring of aluminum concentration but does not prescribe effluent limits for it. However, effluent limits for other constituents such as silver, thallium, and lead may be problematic. A meeting to discuss this issue with NMED personnel was held on September 16, 2011 (see above). LANL sampled the springs using methods with low detection limit.

Replacement of the zero-valent iron (ZVI) with granular activated carbon occurred in July. Severe damage to the permeable reactive barrier (PRB) occurred in August as a result of fire-induced flooding. On August 3, 2011, flooding damaged monitoring wells associated with the project. Then, on August 21, 2011, a second flood severely damaged the capture wall and many of the monitoring wells. The central portion of the capture wall was breached down to bedrock. LANL and the U.S. Department of Energy will consult with NMED personnel in the coming months to determine how best to proceed. The 2010/2011 Monitoring Summary Report for the Technical Area 16 Permeable Reactive Barrier and Associated Corrected Measures Implementation Project was submitted to NMED on September 30, 2011. Appendix C of the report contains the 2011/2012 CMI monitoring plan.

Subsurface CME/CMI

RFI/Investigation Report and CME for Deep Groundwater – Well R-25c, completed in September 2008, has not produced water since it was completed.

Well CdV-16-4(ip) was drilled to a depth of 1150 ft in August 2010 (NMED complete on August 23, 2010).

Public and Stakeholder Involvement – None.

Problems Encountered/Actions to Rectify Problems

The draft NPDES permit for the storm filters may be problematic; further evaluation is needed of naturally occurring constituents slated for monitoring and effluent limits.

The hydrologic system in Cañon de Valle was strongly perturbed by the August flooding resulting from severe damage to the watershed caused by the Las Conchas wildfire; baseline contaminant levels within the canyon system will almost certainly need to be reevaluated. Two long-term alluvial wells were destroyed in this flooding and the PRB capture wall was severely

damaged by these same floods. A path forward for this pilot project must be determined in consultation with NMED personnel.

Key Personnel Issues – None

Projected Work for October 2011

Surface CME/CMI

BMPs

- Continue inspection of existing BMPs following significant precipitation events

CME Hydrogeologic Investigations

- Maintain the TA-16 trailers
- Check for the presence and levels of water in Cañon de Valle alluvial system
- Begin planning for replacement of destroyed alluvial wells
- Begin planning for reevaluation of contaminants within the canyon
- Continue precipitation monitoring

CMI

- Further evaluate the draft NPDES permit for the storm filter systems and generate response comments
- Meet with NMED personnel to determine a path forward for PRB and storm filters

Subsurface CME/CMI

- Analyze data from latest watershed aggregate sampling

Public and Stakeholder Involvement

- Continue discussions with NMED personnel regarding PRB flood damage and a path forward for the storm filters