Monthly Progress Report
Corrective Measures Study (CMS)/Corrective Measures Implementation (CMI) for Consolidated Unit 16-021(c)-99
December 2008

This report summarizes Los Alamos National Laboratory (LANL) activities completed during December of fiscal year (FY) 2009 on the CMS/CMI for Consolidated Unit 16-021(c)-99, the Technical Area 16 (TA-16) 260 Outfall. Activities outlined in the CMS plan ([LA-UR-98-3918], approved by 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–LANL, the U.S. Department of Energy (DOE), and NMED-HWB representatives met on December 22, 2008. Topics included (1) NMED queries on the supplemental work plan for Consolidated Unit 16-021(c)-99 submitted on June 30, 2008; (2) the schedule for upcoming corrective measures evaluation (CME)/CMI activities; and (3) upcoming LANL needs for NMED help with expediting the CMI progress.

Supplemental Work Plan Queries: NMED, DOE, and LANL discussed the proposed location for well CdV-R-15-1. NMED suggested moving it west of the currently proposed location. A site visit to discuss this topic further will be scheduled for January 2009. NMED, DOE and LANL discussed the potential plug and abandonment of R-25(c) and CdV-16-2(i). With respect to the former, NMED expressed concerns about "leakage" from upper contaminated zones to lower zones along the filter pack. LANL personnel will examine the drilling logs to evaluate this issue further. LANL explained that both screens 4 and 6 of CdV-R-15-3 appeared to be producing adequate data, so plugging the lower screen and replacing the upper screen are probably unnecessary. Other aspects of the hydrology of the TA-16 perched zone were also discussed.

Schedule: LANL noted that the CMI was scheduled for later this year, with fieldwork planned to start in early summer. LANL also noted that drilling the CdV-R-15-1 and CdV-16-3(i) wells was planned to be moved in to the FY2009 schedule in a baseline actions.

LANL Needs for NMED Help: LANL and DOE identified the need for a "no-longer-contained-in" determination for springs and alluvial groundwater to implement the CMI. In addition, help with the 401/404 permit application and designation of an "area of concern" to support the CMI would be desirable.

Best Management Practices (BMPs)–BMPs are inspected quarterly and following significant precipitation events. There were several precipitation events in December: one was greater than 0.5 in., and no BMP repair was required in the 260 Outfall area.

CMS Hydrogeologic Investigations–Hydrogeologic investigations include periodic water sampling as outlined in the Phase II RFI as well as continuing investigations delineated in the CMS plan. The ongoing spring sampling program, currently focused on capturing high-flow events, includes biannual sampling at Martin, SWSC, and Burning Ground Springs; these

activities are now conducted under the auspices of the interim facility-wide groundwater monitoring plan.

The hydrologic system in Cañon de Valle is moderately wet as a result of the August monsoonal rains. Martin Spring is flowing at <0.06 L/sec; Burning Ground Spring is flowing at a rate of ~0.25 L/sec. SWSC Spring is dry.

The 90s Line Pond remained wet throughout December; this is the first year in many the pond did not dry out. Downgradient surface locations in Martin Spring Canyon and Cañon de Valle remain wet. The alluvial wells in lower Cañon de Valle and lower Martin Spring Canyon are wet, but wells 16-06293, 16-02655, and 16-02657 are dry. Alluvial wells in Fishladder Canyon are now dry. Surface water in Cañon de Valle is present from Burning Ground Spring to the location of Material Disposal Area P and intermittently is frozen.

Ecological Risk Pilot–The ecological risk pilot study is complete; results are presented in the Phase III RFI report.

CMS Bench and Pilot Studies–Writeup of bench and pilot studies, many of which were conducted under the auspices of the Innovative Technology Remediation Demonstration (ITRD) program, have been completed. The ITRD high explosives (HE) program was focused on two DOE sites: LANL and Pantex. Ongoing studies, mainly consisting of monitoring in support of the previous studies, include

1. A study of the passive barrier technology of Stormwater Management, Inc., potentially useful for removing HE and barium from waters (LANL);
2. A study of in situ anaerobic bioremediation of HE using gas-phase carbon additions (Pantex);
3. Oxidation, reduction, and in situ bioremediation studies of groundwater contamination (Pantex).

The CMS Report from Pantex detailing these studies has been reviewed and results are incorporated in the CME report submitted to NMED on August 31, 2007.

RFI and CMS/CME for Surface System–The surface system CMS report was completed and submitted to NMED on November 26, 2003; the Resource Conservation and Recovery Act facility investigation (RFI) report was completed and submitted in September of 2003. A response to the notice of deficiency on the RFI report was submitted on January 28, 2004, and an addendum to that response was submitted on February 25, 2004. An approval with modifications for the RFI was received June 23, 2004, and a response to the approval was submitted to NMED on July 23, 2004. The RFI text modifications were completed during December 2004 and submitted to NMED. A notice of disapproval on the CMS report was received May 16, 2005. A response to that notice was submitted on June 15, 2005.

NMED issued the "Intent to Public Notice Remedy Selection for the Solid Waste Management Unit 16-021(c)" on May 15, 2006. Public comments on this notice were due to NMED by July 14, 2006. LANL provided comments on this public notice. The remedy was approved by NMED in a letter dated October 13, 2006.

RFI/Investigation Report (IR) and CMS/CME for Deep Groundwater–The IR for TA-16 groundwater was completed and submitted to NMED on August 31, 2006; an approval with direction, dated November 29, 2006, was received by e-mail the same day. This approval required an additional report assessing the quality of the wells in and around TA-16. Additional information, including borehole videos and X-ray diffraction data, requested in this approval letter was provided to NMED in a letter dated January 17, 2007.

The TA-16 well evaluation report was submitted to NMED on April 30, 2007, and an NOD was received on August 17, 2007. The response to that notice of disapproval and a revised report were provided to NMED on September 30, 2007. NMED approved the revised TA-16 well evaluation report on February 11, 2008. A response to this approval was submitted on March 15, 2008. Two drilling work plans [CdV-R-15-1 and CdV-16-3(i)] were submitted as part of this approval response and were approved in an NMED letter dated March 28, 2008. An approval of the drilling work plan for the R-25b well, which was submitted in June 2007, was received in November 2007. A letter from NMED requiring completion of the CdV-16-3(i) as a regional well by July 30, 2008, was received in December 2007. The drilling work plan for R-25c was submitted in February 2008 and approved in a letter dated March 11, 2008. Drilling of R-25c was completed in September 2008, and the well was constructed. The well is not producing water. Well R-25b was drilled and the well was constructed in October 2008. The draft well completion report for R-25c was submitted in September and the draft well completion report for R-25b was submitted in October 2008.

The groundwater CME report was submitted to NMED on August 31, 2007, and an NOD requiring submittal of a supplemental investigation work plan was received on April 22, 2008. The supplemental investigation work plan was completed and submitted on June 30, 2008.

Corrective Measures Implementation (CMI)–The CMI plan was submitted to NMED on May 10, 2007. An NOD was received on June 29, 2007; the response was submitted on July 30, 2007. NMED approved the CMI Plan in a letter dated August 17, 2007.

Public and Stakeholder Involvement–No public or stakeholder involvement in December.

Percentage of CMS Completed

LANL estimates 100% of both the surface CMS and the groundwater CME have been completed. This estimate does not include additional work covered by the work plan submitted on June 30, 2008.

Problems Encountered/Actions to Rectify Problems

R-25c is not producing water.

Key Personnel Issues–The new NMED regulator supporting this project is Michael Dale, who is very familiar with hydrologic issues at TA-16.

Projected Work for January 2009

BMPs

- Continuing inspection of existing BMPs following significant precipitation events

CMS Hydrogeologic Investigations

- Site maintenance at the TA-16 trailers
- Checking for presence and levels of water in Cañon de Valle alluvial system
- Precipitation monitoring

Groundwater CME/CMI

- Site restoration at the R-25b and R-25c site

CMS/CME Bench and Pilot Studies–No projected work in January

CMI

- Contracting for CMI
- Lab scale tests to finalize media selection for permeable reactive barrier

Public and Stakeholder Involvement–No projected work in January 2009