

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

This report summarizes Los Alamos National Laboratory (LANL) activities completed during October of fiscal year (FY) 2009 on the CMS/CMI for Consolidated Unit 16-021(c)-99, the 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 09/08/99), and other related activities are described herein.

**Description of Activities and Contacts** – No NMED interactions in October.

**Best Management Practices (BMPs)** – BMPs are inspected quarterly and following significant precipitation events. There were several small precipitation events in October, one was greater than 0.5 in.; none required repair of BMPs 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 and 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. Sampling of all locations containing water occurred in October.

The hydrologic system in Cañon de Valle is moderately wet due to the monsoonal rains of August. Martin Spring is flowing at ~ 0.06 L/sec; Burning Ground Spring is flowing at a rate of ~ 0.2 L/ sec; SWSC Spring continues flowing at a rate of ~ 0.005 L/sec.

The 90s Line Pond remained wet throughout October, 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 were purged dry during sampling. 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 (MDA) P.

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

**CMS Bench and Pilot Studies** – Write-up 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 focused on two DOE sites: LANL and Pantex. Ongoing studies, mainly consisting of monitoring in support of the previous studies, include the following.

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 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 RFI Report was completed and submitted in September 2003. A response to the NOD on the RFI report was submitted on January 28, 2004, and an addendum to that NOD 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 in December 2004 and submitted to NMED. An NOD on the CMS report was received May 16, 2005. A response to that NOD 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/IR and CMS/CME for Deep Groundwater*** – The investigation report (IR) for Technical Area 16 (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 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 NOD 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, 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. The drilling work plan for R-25(c) was submitted in February 2008 and approved in a letter dated March 11, 2008. Drilling of R-25(c) was completed in September and the well was constructed. The well is not producing water. Well R-25(b) was drilled and the well constructed in October. The draft well completion report for R-25(c) was submitted in September, and the draft well completion report for R-25(b) 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 October

### **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. This work includes all drilling activities.

### **Problems Encountered/Actions to Rectify Problems**

Well R-25(c) is not producing water.

**Key Personnel Issues** – No personnel issues in October

### **Projected Work for November 2008**

#### ***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 Bench and Pilot Studies*** – No projected work in November

#### ***CMI***

- Contracting for CMI
- Initiation of lab scale tests to finalize media selection for permeable reactive barrier

***Public and Stakeholder Involvement*** – No projected work in November