Monthly Progress Report
Corrective Measures Study (CMS)/Corrective Measures Implementation (CMI) for
Consolidated Unit 16-021(c)-99
November 2010

This report summarizes Los Alamos National Laboratory (LANL) activities completed during November of fiscal year 2011 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 the New Mexico Environment Department [NMED] Hazardous Waste Bureau on 9/8/99) and other related activities are described herein.

Description of Activities and Contacts – None.

Best Management Practices (BMPs) – BMPs are inspected quarterly and following significant precipitation events. Two small precipitation events occurred in November; none exceeded 0.5 in.

CMS 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 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 LANL's interim facility-wide groundwater monitoring plan.

Flow in the TA-16 canyons was very low in November. Water levels have decreased by several inches in the wells and piezometers located near the permeable reactive barrier (PRB). 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 is not flowing over the weir-box exit.

The 90s Line Pond remains wet. Surface water is present in Cañon de Valle from upstream of the outfall channel to beyond the former location of Material Disposal Area P.

RFI/Investigation Report and CMS/Corrective Measures Evaluation (CME) for Deep Groundwater – Well R-25c, completed in September 2008, is not producing water.

Well R-47i at TA-14 was completed to a depth of 895 ft in November 2009 (NMED complete on November 15, 2009).

Drill pad preparation at R-63 (the R-25 regional screen replacement well) was completed.

Well CdV-16-4ip was drilled to a depth of 1150 ft in August 2010 (NMED complete on August 23, 2010). In October, based on pressure measurements of the two screens, it was determined that cross-communication between screens occurred during development. Elevated RDX (hexahydro-1,3,5-trinitro-1,3,5 triazine) was found in the lower screen. The drilling contractor returned to the field in late October and continued to develop the lower screen. This

effort continued into early November. Field parameters (including the RDX screening analysis concentration) stabilized, suggesting most introduced water had been removed.

Planning for the CdV-16-4ip pump test continued. Key November efforts focused on (1) contracting for the pump test, (2) developing a waste treatment and disposition strategy for the pump test, and (3) refining the details of the duration and pump rates for the test. Current plans are to treat the pump test water using a granular activated carbon system, sample the water using rapid-turnaround analysis to ensure it meets relevant land-application standards, and discharge the water under a notice of intent to discharge.

CMI – Permitting for CMI activities continues to proceed slowly. It was determined the storm-filter systems in the springs required National Pollutant Discharge Elimination System (NPDES) permits because of elevated levels of aluminum. The basic problem is that naturally occurring levels of aluminum in the spring water exceed current water standards.

TerranearPMC continued water-level monitoring and sampling activities in November. Manual water-level measurements were collected from the alluvial monitoring wells; several wells more distant from the stream channel remain dry. Water levels in all the alluvial wells are down several inches. Flow into the PRB is low but is balanced by outflow. By the end of the month, the three PRB vessel ports had frozen.

PRB screening data from samples collected in October were received. These data suggest that the PRB is removing RDX (to nondetect status) and barium (to ~1-ppm concentration). Most other screening constituent variations within the PRB are consistent with (1) cation removal in the zeolite media, (2) constituent reduction in the zero-valent iron (ZVI) media, and (3) precipitation of carbonate and a silica-rich phase in the ZVI media. The latter observation is of concern because such precipitates may clog the ZVI media. Additional screening samples were collected in late November from ports that were not frozen. Quarterly off-site laboratory sampling of the PRB was completed. Waste from the soil removal in the Consolidated Unit 16-021(c)-99 outfall source area continued to be processed for off-site shipping.

Public and Stakeholder Involvement – None.

Percentage of CMS Completed

LANL estimates 100% of the surface CMS has been completed.

Problems Encountered/Actions to Rectify Problems

The status of aluminum under potential NPDES permits for the storm-filter systems is problematic, as noted above in the CMI section.

Key Personnel Issues – None

Projected Work for December 2010

BMPs

- Continue inspection of existing BMPs following significant precipitation events

CMS Hydrogeologic Investigations

- Maintain site at the TA-16 trailers
- Check for presence and levels of water in Cañon de Valle alluvial system
- Continue rainfall monitoring

Groundwater CME/CMI

- Continue planning for the R-25b and CdV-16-4ip pump tests
- Initiate CdV-16-4ip pump test (pending approval of permits by NMED)
- Drill at R-63

CMI

- Continue NPDES permitting discussions with the U.S. Environmental Protection Agency
- Continue monitoring water levels and field parameters in PRB wells
- Continue waste management activities at CMI remedy sites

Public and Stakeholder Involvement – Continued interaction with NMED personnel concerning the PRB and pump tests.