

TA-16



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Date: January 16, 2003
Refer to: ER2003-0029

Mr. John Young, Corrective Action Project Leader
Permits Management Program
NMED – Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building 1
Santa Fe, NM 87505-6303



SUBJECT: DECEMBER 2002 CORRECTIVE MEASURES STUDY (CMS) PROGRESS REPORT FOR POTENTIAL RELEASE SITE (PRS) 16-021(c)

Dear Mr. Young:

Enclosed are two copies of the December 2002 CMS Progress Report for PRS 16-021(c), the 260 Outfall. This report is being submitted as part of the reporting conditions outlined in Section R, Scope of work for Resource Conservation and Recovery Act CMS at the Laboratory, Task IV, Reports, Part A, Progress Module VIII of the Laboratory's Hazardous Waste Facility Permit.

If you have any questions, please call Dave McInroy at (505) 667-0819 or Lance Woodworth at (505) 665-5820.

Sincerely,

David McInroy, Acting Program Manager
Remediation Program
Los Alamos National Laboratory

Sincerely,

Everett Trollinger, Project Manager
Department of Energy
Office of Los Alamos Site Operations

DM/ET/NR/dv



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Enclosure: December 2002 CMS Progress Report (ER2003-0028)

Cy (w attach.):

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Monthly Progress Report
Corrective Measures Study (CMS) for Potential Release Site (PRS) 16-021(c)
December 2002

This report summarizes Los Alamos National Laboratory (LANL) activities completed during December of fiscal year (FY) 2003 on the CMS for PRS 16-021(c), the 260 outfall. Both the activities described in the CMS plan ([LA-UR-98-3918]), approved by NMED-HWB on 9/8/99), and other related activities are described herein.

Description of Activities and Contacts

High Performing Team (HPT) Activities – The 260 HPT met on December 2, 2002.

Agenda items included an update of ongoing 260 activities, a review of screening assessment issues for the upcoming RCRA Facilities Investigation (RFI) Report, a discussion of both human health risk assessment issues and an update on ecorisk investigations, and a discussion of monitoring points for the CMS.

LANL representatives provided updates on the CMS sampling investigations, including quarterly sampling and geophysical investigations, the CMS bench and pilot studies, and the CMS Addendum DQOs. Additional details on these projects are provided below in this monthly progress report and in the November 2002 progress report.

It was agreed that the screening assessment in the upcoming RFI Report would focus on data generated since the last RFI Report in 1998, but that the data from the latter report would be used in the data interpretation. Water data would be screened against health based levels (Region VI drinking water values). A detailed comparison between the screening assessments in the two reports would be completed

NMED agreed, as long as No Further Action was not being requested, the site-specific risk assessment and derived media cleanup standards could use a site-specific exposure scenario. This would be done for several distinct subsets of the CMS data including the canyon bottom and source region. It was suggested that a 'worst case' residential assessment be done in order to address public concerns, similar to that which was done for MDA-P. After further discussion, NMED reiterated that the media cleanup standards proposed in the CMS should use a cancer risk level of 10^{-5} and a hazard index of 1. NMED stated that site-specific bioavailability for Ba could be used in the risk assessments provided the determinations of Ba speciation were quantitative and not qualitative.

LANL personnel reviewed recent ecorisk results in Canon de Valle. It was noted that rodent samples would soon be submitted to the laboratories and that resampling to support the Chironomus tentans testing was needed. This occurred in December 2002.

It was agreed that the monitoring points (points of compliance) for the CMS would be the same as those that had been proposed in the CMS Plan. This implies monitoring at most of the same locations that are currently being sampled quarterly in the CMS plus an additional couple of sites selected from the stream profile locations.

The next HPT meeting is not scheduled pending resolution of the endangerment order issued on November 26, 2002. Agenda items and topics requiring resolution include the CMS addendum and its final well locations, CMS bench and pilot results, ecorisk, and a data update and presentation formats for the RFI Report.

RCRA Facility Investigation (RFI) Report and CMS Plan– The peer review of the revised CMS addendum was completed.

Best Management Practices (BMPs)– BMPs are inspected quarterly and following significant precipitation events. No BMP repairs were required in December.

CMS Hydrogeologic Investigations– CMS hydrogeologic investigations include ongoing Phase II RFI sampling as well as continuing investigations outlined in the CMS plan.

The ongoing Phase II RFI sampling program includes collecting samples at Martin and Burning Ground spring every other day for stable isotopes. SWSC spring remains dry.

The alluvial and deep wells were checked for presence and level of water. All five alluvial wells in Canon de Valle contained water. Water was present in the lower two of the three alluvial wells in Martin Spring Canyon. All of the intermediate depth boreholes were dry.

The winter quarterly sampling was completed. Samples were collected at all of the prescribed localities containing water. No flow-integrated samples were collected. The system remains dry, although the Steam Plant drainage alluvial well continued to contain water. The long-term seep in the headwaters of Canon de Valle was dry but the new seep in the headwaters (see September CMS Monthly) continues to flow. This locale was sampled. Canon de Valle was wet from Burning Ground spring to MDA-P, dry to beyond the well pair, then wet for approximately 20 yards at the zone of alluvial discharge.

One sample from each of four precipitation events was collected and archived for analysis during this reporting period.

Further results from the controlled source auto-magneto telluric investigation (CSAMT) were received. The major feature of interest in these results is the presence of finger-like zones of high conductivity that extend from the surface to the deep groundwater

Ecological Risk Pilot–

Data analysis to support the combined MDA-P and TA-16-260 ecorisk evaluations continued. Rodent samples were shipped to Paragon analytical laboratory. Resampling of the last round of ecotoxicological analysis locations was completed.

CMS Bench and Pilot Studies—Bench and pilot studies continued (formerly in collaboration with the Innovative Treatment Remediation Demonstration (ITRD) Program. The ITRD HE program is focused on two DOE sites: LANL and Pantex.) Studies include:

1. A study of the passive barrier technology of Stormwater Management, Inc., which is potentially useful for removing HE and barium from waters.
2. A study of chemical treatment of HE-contaminated soil using zero-valent iron (ZVI). The LANL portion of this study has been completed.
3. At Pantex, a study of in situ anaerobic bioremediation of HE using gas-phase carbon additions.
4. A study of ex situ anaerobic bioremediation of HE-contaminated soils using the W. R. Grace process, which combines anaerobic bioremediation with a ZVI treatment. The LANL portion of this study has been completed.
5. A study of HE composting. Amendments appropriate to northern New Mexico were tested on both clean and contaminated soils. The LANL portion of this study has been completed. The internal report was completed on these studies.
6. A study of immobilization of barium-contaminated sediments from Cañon de Valle. A preliminary study has been completed and further investigations are ongoing.
7. Phytoremediation studies in Cañon de Valle. Native plants were being evaluated for their ability to remove HE from surface waters. Results suggest that low levels of phytoremediation occur in the Burning Ground spring area.
8. Oxidation, reduction, and in-situ bioremediation studies of groundwater contamination at Pantex.

Barium stabilization studies were continued in December.

Interim Measure (IM) –

No activities. The IM Report is in review by the regulators.

RFI and CMS Report –

Work continued on sections of these reports.

Public and Stakeholder Involvement— Two presentations of data from the TA-16-260 CMS were made at the fall meeting of the American Geophysical Union (AGU) in San Francisco.

Percentage of CMS Completed

LANL estimates 92 % of the CMS has been completed to date. Note that this percentage does not reflect the deep and potential intermediate wells that will be drilled per the CMS plan addendum.

Problems Encountered/Actions to Rectify Problems

General Problem: The inability of the HPT to meet regularly during the past few months, continues to slow progress on the CMS.

CMS Hydrogeologic Investigations

None.

CMS Bench and Pilot Studies

None.

IM

None.

Key Personnel Issues

None

Projected Work for January 2003

RFI Report and CMS Plan

- A site visit will be completed.
- Revision to the CMS Addendum for intermediate depth boreholes will be submitted.

BMPs

- Inspection of existing BMPs following significant precipitation events will continue.

CMS Hydrogeologic Investigations

- Completion of field analyses for winter quarterly sampling.
- Maintenance of autosamplers
- Checking for levels and presence of water in alluvial and deep wells.
- Continued precipitation monitoring and sampling for stable isotopes.

- Quarterly sampling at CDV-R-15-3 and CDV-R-37-2.
- Data analysis
- Writing of RFI and CMS reports
- Modeling groundwater and natural attenuation

Ecological Risk Pilot

- Continued evaluation of data from macroinvertebrate studies. Write-up of ecological risk assessment results.

CMS Bench and Pilot Studies

- Evaluation of data from Stormwater units. Evaluation of Stormwater barrier system media based on literature and contacts with TA-50 personnel.
- Stabilization studies

IM

- Task complete.

Public and Stakeholder Involvement

None anticipated.

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