

TA-16



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Date: May 20, 2003
Refer to: ER2003-0356



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

**SUBJECT: APRIL 2003 CORRECTIVE MEASURES STUDY (CMS) PROGRESS REPORT
FOR POTENTIAL RELEASE SITE (PRS) 16-021(c)**

Dear Mr. Young:

Enclosed are two copies of the April 2003 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,

David Gregory, Project Manager
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DM/DG/NR/am



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Enclosure: April 2003 CMS Progress Report (ER2003-0355)

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Monthly Progress Report
Corrective Measures Study (CMS) for Potential Release Site (PRS) 16-021(c)
April 2003

This report summarizes Los Alamos National Laboratory (LANL) activities completed during April 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 April 7, 2003.

Agenda items included an update of ongoing 260 activities, a discussion of the springs dataset including several different types of plots, and a review of the draft outlines for the upcoming RFI and CMS Reports and issues that have arisen during the writing of the reports.

LANL representatives provided updates on the CMS sampling investigations, including March quarterly sampling, deep well sampling, the CMS bench and pilot studies, and the CMS Addendum. Additional details on these projects are provided below in this monthly progress report and in the March 2003 progress report.

Updated plots of element concentration vs. time, element vs. element, element vs. flow/flux, and 3-D element-element plots for springs, seeps, and the 90s Line pond were discussed. A focus of these discussions was what constituents might need to be cleaned up at different localities. It still appears that RDX is the principal cleanup driver for the springs. For the RFI Report it was agreed that: 1) LANL could focus on key indicator elements (RDX, Ba, Ca, Cl, Fe, and NO₃ were suggested) in the RFI discussions; 2) the focus would be more on spatial and temporal data plots rather than on detected analyte plots; 3) 3-D element plots would not be used; 4) correlation plots (e.g. RDX vs. HMX) could be provided in an Appendix; 5) the 90s Line Pond data and the Fishladder seep data were optional (LANL currently plans to present these data); 6) non-detects should be plotted on time-series, but could be left off of plots such as element vs. flow and element vs. distance; 7) LANL would focus the stream profile plots on 2 high flow, 2 medium flow, and 2 low flow regimes; 8) field parameters could be presented in plots and would not need to be tabulated within the document; and 9) LANL should try to limit the number of statistical calculations in the Appendix to those that were utilized in the data discussions. Risk assessment issues were deferred to a future meeting.

For the CMS Report it was agreed that: 1) qualitative rather than numeric evaluations could be used in the development of threshold screening criteria; 2) vadose zone cleanup technologies could be minimally discussed; 3) LANL would review the Order to determine whether the threshold screening criteria proposed in the CMS outline were consistent with the Order; and 4) monitoring points could initially be discussed in the

Media Cleanup Standards/Point of Compliance chapter. Whether to address vadose-zone contamination in the surface CMS or in the groundwater CMS was deferred until the next meeting.

The next HPT meeting was scheduled for May 12, 2003. Topics will include a 260 update, a discussion of alluvial data, risk assessment discussions, and a discussion of issues that have arisen during the writing of the RFI and CMS reports including whether to address vadose-zone contamination in the surface or the groundwater CMS.

RCRA Facility Investigation (RFI) Report and CMS Plan– The revision to the CMS addendum was approved by NMED.

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

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 headwaters of Canon de Valle, Fish Ladder seep, and 90s Line pond all contained water. The new seep in the headwaters (see September 2002 CMS Monthly) continues to flow. 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. Water Canyon remains extremely wet.

One sample from one precipitation event was collected and archived for analysis during this reporting period.

Ecological Risk Pilot–

Data analysis to support the TA-16-260 ecorisk evaluations continued. Rodent analyses were completed and data were received. Bioavailability samples were selected and submitted to an analytical laboratory. Results from the resampling of aqueous invertebrates from December 2002 were evaluated. Levels of toxicity appear to be lower than at previous tests performed at the same localities. The write-up for the ecological risk assessment for the RFI Report was initiated.

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 are occurring in the Burning Ground spring area.
8. Oxidation, reduction, and in-situ bioremediation studies of groundwater contamination at Pantex.

Barium stabilization/immobilization studies were continued in April. Write-up of the stabilization studies was initiated.

Interim Measure (IM) –

No activities. The IM Report was approved by NMED in a letter dated January 13, 2003.

RFI and CMS Report –

Work continued on sections of these reports.

Public and Stakeholder Involvement– There was no public or stakeholder involvement during this reporting period.

Percentage of CMS Completed

LANL estimates 94 % of the CMS has been completed to date. Note that this percentage does not reflect the deep and potential intermediate boreholes 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

Peter Gram, the subcontractor project manager for the CMS fieldwork, the RFI report, and the CMS Report has left the project to begin a new job. New personnel, John Pietz and Devon Jercinovic, have been provided by Shaw and LANL anticipates no long-term impacts to the project.

Projected Work for May 2003

RFI Report and CMS Plan

- None.

BMPs

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

CMS Hydrogeologic Investigations

- Site maintenance at the TA-16 trailers.
- Maintenance of autosamplers
- Checking for levels and presence of water in alluvial and deep wells.
- Continued precipitation monitoring and sampling for stable isotopes.

- Data analysis.
- Quarterly sampling of CDV R-15-3 and CDV R-37-2
- Writing of RFI and CMS reports.

Ecological Risk Pilot

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

CMS Bench and Pilot Studies

- Stabilization studies

IM

- Task complete.

Public and Stakeholder Involvement

None anticipated.