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Date: July 10, 2002
Refer to: ER2002-0468



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

Dear Mr. Young:

Enclosed are two copies of the June 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
Environmental Restoration Project
Los Alamos National Laboratory

Sincerely,

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



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Mr. John Young
ER2002-0468

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July 10, 2002

DM/ET/NR/vn

Enclosure: June 2002 CMS Progress Report (ER2002-0467)

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

This report summarizes Los Alamos National Laboratory (LANL) activities completed during June of fiscal year (FY) 2002 on the CMS for PRS 16-021(c), the 260 outfall. Both the activities described in the CMS plan ([LA-UR-98-3918]), which was submitted to the New Mexico Environment Department-Hazardous Waste Bureau [NMED-HWB] on 9/30/98, and 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 June 24, 2002.

LANL representatives inquired whether to continue with previously agreed upon HPT activities and formats, such as the risk-based technical approach, CMS/CMI process, CMS report format, and RFI report format. NMED representatives stated that LANL should continue based on previous agreements, because the 260 activities are advanced in the regulatory process. LANL inquired whether a letter to that effect was necessary. NMED representatives noted that such a letter was not needed at this time.

LANL representatives provided updates on the CMS sampling investigations, including quarterly sampling, the CMS bench and pilot studies, the drilling, and the interim measure. Additional details on these projects are provided below in this monthly progress report and in the May 2002 progress report. LANL noted that the Innovative Treatment Remediation Demonstration (ITRD) project was likely to cease or reduce its high explosive activities next year.

The HPT members discussed the results of the IM verification sampling and the draft IM report. NMED representatives provided several comments that LANL will incorporate into the final report. NMED representatives will also informally review the draft report and provide additional comments.

LANL representatives presented the geophysics report that had been completed by Hydrogeophysics Company and a draft study plan for further geophysical studies that would be used to support the CMS for deep groundwater at TA-16. Controlled source audio-frequency magnetotellurics (CSAMT) will be deployed along three east-west and two north-south lines. These data should be able to image the perched aquifer observed in the R-25 well, and thus should be very useful for siting future intermediate depth boreholes.

LANL representatives noted that resampling of several channel sediment localities in Canon de Valle would be accomplished. This is to determine how the sediment contamination has changed since the extensive 1996 sampling.

LANL reviewed water data for locations in Canon de Valle. The focus was on RDX, HMX, RDX/HMX and barium. Spatial data and time series data for Burning Ground spring were examined. It was noted that the dataset was massive and that the HPT would need to address which types of plots needed to be included in the RFI report. Monitoring points and treatment points suggested by these data were discussed. Likely treatment locales include: SWSC spring and Burning Ground springs and the alluvial system in Canon de Valle upgradient from the potential losing reach upgradient from MDA-P. Additional downgradient locales were discussed, but no conclusion was reached. Further discussion on these topics will occur at future HPT meetings.

A brief presentation on upcoming decontamination and decommissioning (D&D) projects at TA-16 was provided to John Young of the NMED by the HPT. Four TA-16 D&D projects are upcoming – the 220 Line, the TA-16 service station, the basket wash facility, and TA-16-370. None of these project locales will have other structures built on them, so future characterization and cleanup will be possible. PRSs associated with these projects were reviewed. It was agreed: 1) that LANL would cite the applicable workplans and note additional sampling in the 10-day notifications for the sampling; 2) LANL D&D would pay for laboratory sampling and LANL ER would pay the sample management organization (SMO) taxes on that sampling; 3) LANL ER personnel would closely observe the D&D projects to ensure that sampling protocols (SOPs) were followed, sampling locations were accurately surveyed, and any leakpoints or stains were noted; and 4) LANL ER personnel may place pebbles or other markers in excavated subsurface structures.

The next HPT meeting is scheduled for August 12, 2002. Agenda items may include ecorisk results, a data update, and points of compliance.

RCRA Facility Investigation (RFI) Report and CMS Plan– No new activities occurred during this reporting period.

Best Management Practices (BMPs)– BMPs are inspected quarterly and following significant precipitation events. Due to low levels of precipitation in June, no BMP repairs were required.

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 wells, both alluvial and deep, were checked for both presence and level of water. Four out of five alluvial wells in Canon de Valle contained water, the uppermost well was dry. No water was present in all three alluvial wells in Martin Spring Canyon. All of the intermediate depth boreholes were dry.

The summer quarterly sampling was begun. Samples were collected at all of the prescribed localities that contained water. The system remains dry, although water was present in the 90s Line pond due to recent precipitation. The headwaters of Cañon de Valle were dry.

Two samples from precipitation events were collected and archived for analysis during this reporting period.

For well CdV-R-37-2, work was continued on the Well Completion Report. An internal rough draft was completed.

The well CdV-R-15-3 Well Completion Report was distributed.

Ecological Risk Pilot

Work was continued on consolidating the aquatic and terrestrial system study and implementation plans. Hantavirus screening results for the rodents collected in May was completed. Five rodents of twenty-six (19%) screened positive for hantavirus. Preparation for resampling for aquatic toxicity was completed. Eight additional sediment samples will be collected in July to support the aquatic toxicity ecorisk evaluations. These will be analyzed for metals, HE, and semivolatile organic compounds.

CMS Bench and Pilot Studies—Bench and pilot studies continued 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 planned for FY 02.
7. Phytoremediation studies in Cañon de Valle. Native plants are being evaluated for their ability to remove HE from surface waters. Preliminary 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.

The HEPS field team continued troubleshooting on the Stormwater Management system to determine why it does not appear to be working effectively for barium. ITRD representatives reported that the Pantex *in-situ* deep groundwater treatment studies were providing promising results.

Interim Measure (IM) –

Verification sampling data was received. The draft IM Report peer review was completed.

Public and Stakeholder Involvement– No activities.

Percentage of CMS Completed

LANL estimates 89 % 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 (1) The Cerro Grande fire has severely impacted the 260 RFI/CMS activities. These problems have been discussed in detail in previous monthly reports.

Action to Rectify General Problem (1): LANL will work closely with NMED through the HPT to mitigate the effects of the Cerro Grande fire. Effects of the fire on the monitoring data in Canon de Valle continue to be addressed.

CMS Hydrogeologic Investigations

Problem (1): Questions relating to the quality of data from well R-25 remains a concern to the TA-16-260 team.

Action to Rectify Problem (1): LANL will evaluate the data from the quarterly sampling of the R-25 well to evaluate its reliability.

CMS Bench and Pilot Studies

Problem (1): The fact that the Stormwater Management unit does not appear to be removing barium is of concern,

Action to Rectify Problem (1): LANL will work with ITRD to determine if there are problems with the barium-specific resin and will potentially evaluate other barrier materials.

IM

None.

Key Personnel Issues

None

Projected Work for July 2002

RFI Report and CMS Plan

- None

BMPs

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

CMS Hydrogeologic Investigations

- Maintenance of autosamplers
- Finishing quarterly sampling including stream profiling.
- Checking for levels and presence of water in alluvial and deep wells.
- Sampling of flow-integrated autosamplers
- Continued precipitation monitoring and sampling for stable isotopes.
- Data analysis
- Review of rough draft of CdV-R-37-2 Well Completion Report
- Review of data quality objectives for groundwater modeling
- Review of data quality objectives for drilling

Ecological Risk Pilot

- Completion of rodent sampling.

CMS Bench and Pilot Studies

- Evaluation of data from Stormwater units

IM

- Data analysis and continued writing of IM Report

Public and Stakeholder Involvement

None anticipated.