

TA-16



Los Alamos National Laboratory/University of California
Risk Reduction & Environmental Stewardship (RRES)
Remediation (R) Program, MS M992
Los Alamos, New Mexico 87545
(505) 667-0808/FAX (505) 665-4747



National Nuclear Security Administration
Los Alamos Site Operations, MS A316
Environmental Restoration Program
Los Alamos, New Mexico 87544
(505) 667-7203/FAX (505) 665-4504

Date: April 21, 2003
Refer to: ER2003-0299



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

Dear Mr. Young:

Enclosed are two copies of the March 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,

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

Sincerely,

David Gregory, Project Manager
Department of Energy
Los Alamos Site Operations

DM/DG/NR/dv



An Equal Opportunity Employer/Operated by t

Printed on Recycled Paper



6407

Enclosure: March 2003 CMS Progress Report (ER2003-0298)

Cy (w attach.):

A. Dorries, RRES-R, MS M992
T. Grieggs, RRES-SWRC, MS K490
D. Hickmott, EES-6, MS M992
D. McInroy, RRES-R, MS M992
N. Quintana, RRES-R, MS M992
N. Riebe, RRES-R, MS M992
C. Rodriguez, RRES-R, MS M992
L. Soholt, RRES-ECO, MS M887
D. Stavert, RRES-EP, MS J591
D. Gregory, LASO, MS A316
L. Woodworth, LASO, MS A316
S. Yanicak, NMED-DOE OB, MS J993
M. Leavitt, NMED-GWQB
J. Davis, NMED-SWQB
L. King, US EPA
RRES-R File, MS M992
IM-5, MS A150
RPF, MS M707

Cy (w/o enc.):

J. Parker, NMED-DOE OB
J. Bearzi, NMED-HWB
J. Johnson, ADO, MS A104

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

This report summarizes Los Alamos National Laboratory (LANL) activities completed during March 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 March 3, 2002.

Agenda items included an update of ongoing 260 activities, a presentation of the geophysical data collected by Zonge Engineering during September 2002, and a discussion of potential locations of intermediate depth boreholes at TA-16.

LANL representatives provided updates on the CMS sampling investigations, including 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 February 2003 progress report.

Scott Baldrige (LANL) discussed the results of the combined controlled source automagnetotellurics (CSAMT) and natural source automagnetotellurics (NSAMT) geophysical surveys that were performed during September 2002. Geophysical anomalies were noted: 1) in Canon de Valle including just west of MDA-P; 2) at narrow vertical locales along east-west transects of TA-16, particularly in the western half of TA-16, and 3) along vertical zones in the middle of the TA-16 mesatop, including west of the head of Martin spring canyon. It is hypothesized these zones represent locations of higher water content (possible recharge) and may represent good drilling targets.

The Zonge Engineering results combined with a tour of the potential drilling locales were used to finalize the drilling locations of intermediate-depth boreholes. Following discussion, LANL, NMED and DOE agreed upon three potential drill sites: 1) one in Canon de Valle in a Zonge geophysical anomaly; 2) one east of the TA-16 Burning Ground that is not located in a geophysical anomaly; and 3) a site east of P-site, also located outside of a geophysical anomaly. The first of these sites may be difficult to access with a large drill rig. These locations were proposed in the revision to the CMS addendum that was submitted to NMED during mid March.

The next HPT meeting was scheduled for April 7, 2003. Topics will include a 260 update, a discussion of spring data, and a discussion of issues that have arisen during the writing of the RFI and CMS report.

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

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

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, although the well near the TA-16-260 outfall did not produce sufficient water for laboratory sampling. Water was present in the lower two of the three alluvial wells in Martin Spring Canyon. All of the intermediate depth boreholes were dry.

Spring quarterly sampling was completed. Samples were collected at all of the prescribed localities containing sufficient water. No flow-integrated samples were collected. The system as a whole has wetted up somewhat. 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 is extremely wet.

Stream profiles representing the high-flow regime of spring run-off were completed in Canon de Valle and Martin Spring Canyon.

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

Ecological Risk Pilot–

Data analysis to support the TA-16-260 ecorisk evaluations continued. Paragon analytical laboratory has finalized an acceptable rodent analytical protocol and are proceeding with rodent analyses. Results from the resampling of aqueous invertebrates from December 2002 were received. Levels of toxicity appear to be lower than at previous tests performed at the same localities.

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 March.

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 93 % 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

None

Projected Work for April 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

- Analytical laboratories are proceeding with rodent analysis. 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.