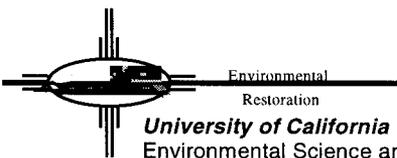


HSWA LAND 31082/116

160-021(c)



Environmental Restoration  
**University of California**  
Environmental Science and Waste Technology (E)  
Environmental Restoration, MS M992  
Los Alamos, New Mexico 87545  
505-667-0808/FAX 505-665-4747



**U.S. Department of Energy**  
Los Alamos Area Office, MS A316  
Environmental Restoration Program  
Los Alamos, New Mexico 87544  
505-667-7203/FAX 505-665-4504

Date: June 19, 2001  
Refer to: ER2001-0514



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: MAY 2001 CORRECTIVE MEASURES STUDY (CMS) PROGRESS REPORT FOR POTENTIAL RELEASE SITE (PRS) 16-021(c)**

Dear Mr. Young:

Enclosed are three copies of the May 2001 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,

Julie A. Canepa, Program Manager  
Environmental Restoration Project  
Los Alamos National Laboratory

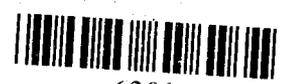
Sincerely,

Joseph Yozella, Asst. Area Manager  
Department of Energy  
Los Alamos Area Office

JC/JV/NR/vn

Enclosure: May 2001 CMS Progress Report (ER2001-0513)

TV



Cy (w/enc.):

A. Dorries, EES-9, MS M992  
D. Hickmott, EES-6, MS M992  
M. Kirsch, E/ER, MS M992  
D. McInroy, E/ER, MS M992  
R. Mirenda, EES-9, MS M992  
D. Neleigh, US EPA (2 copies)  
N. Reibe, E/ET, MS M992  
C. Rodriguez, E/ER, MS M992  
G. Turner, LAAO, MS A316  
J. Vozella, LAAO, MS A316  
L. Woodworth, LAAO, MS A316  
J. Davis, NMED-SWQB  
M. Leavitt, NMED-GWQB  
J. Parker, NMED-DOE OB  
S. Yanicak, NMED-DOE OB, MS J993  
E/ER File, MS M992  
RPF, MS M707

Cy (w/o enc.):

J. Canepa, E/ER, MS M992  
J. Bearzi, NMED-HWB  
J. Kieling, NMED-HWB

**Monthly Progress Report**  
**Corrective Measures Study (CMS) for Potential Release Site (PRS) 16-021(c)**  
**May 2001**

This report summarizes Los Alamos National Laboratory (LANL) activities completed during May of fiscal year (FY) 2001 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 and the ecorisk HPT met for a site tour on May 18, 2001.

Prior to the tour, LANL representatives provided an update on April activities including the hydrogeologic studies, the bench and pilot studies, and the Interim Measure (IM) investigations. Additional details are provided below in the sections of this monthly report covering these studies.

The tour focussed on: 1) Canon de Valle from the silver outfall area downstream to the well pair located near MDA-P; 2) the TA-16-260 IM and MDA-R sites; and 3) the possible sites for the CdV-R-37-2 deep groundwater well. Canon de Valle appears to be recovering quite well from the effects of the Cerro Grande fire. The ecologists on the tour remarked that it had undergone a healthy level of burning. The location of the ecological trapping array was observed. The TA-16-260 and MDA-R sites appear to be in good shape. The pros and cons of the TA-37 drill site and a site located west of that site were discussed. The former site is more likely to intersect a contaminant plume but the latter is more likely to intersect perched water. HWB representatives suggested that they still preferred the TA-37 site, but that further discussion within HWB on this topic needed to occur.

The next HPT meeting is scheduled for June 4, 2001. Agenda items may include review of the HPT matrix, ecological risk studies, and a discussion of RDX degradation products.

**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. IM fieldwork, including site restoration, is complete except for finalization of the zero-discharge dam. No BMP repairs were required this month.

***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 analysis of stable isotopes. Stream profiles were completed in both Martin spring canyon and Canon de Valle in order to sample the declining limb of the hydrograph for spring snowmelt.

The wells, both alluvial and deep, were checked for both presence and level of water. All five alluvial wells in Canon de Valle contained water. The uppermost alluvial well in Martin spring canyon is dry. Fish-ladder seep, the waterfall at Fishladder canyon, and the Canon de Valle/Water Canyon confluence all contain water; however, the 90s Line Pond remains dry.

In May, no samples from precipitation events were collected and archived for analysis.

#### *Ecological Risk Pilot—*

The sampling effort for small mammals in Canon de Valle and Pajarito Canyon was begun. A total of 20 deer mice (including several recaptures), one brush mouse, and four montane voles were captured in Canon de Valle. A total of eight deer mice were captured in Pajarito Canyon. The overall capture rate was relatively low, possibly due to the combined effects of last year's drought and the Cerro Grande fire. Nine individuals in Canon de Valle and 5 individuals in Pajarito canyon were selected for laboratory analysis. They are currently being screened for hantavirus.

***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. A pilot-scale unit is scheduled for deployment in Martin Spring canyon.
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.

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 late summer of 2001.
7. Phytoremediation studies in Cañon de Valle. Native plants are being evaluated for their ability to remove HE from surface waters. Preliminary results do not suggest that significant phytoremediation is occurring in the Burning Ground spring area.
8. Oxidation, reduction, and in-situ bioremediation studies of groundwater contamination at Pantex.

Equipment for the Stormwater Management system was acquired. Site surveys and other logistical issues for the Stormwater Management system were addressed.

#### ***Interim Measure (IM) –***

Activities at the TA-16-260 IM were limited. Housekeeping activities were performed. Site restoration activities are complete except for capping of the zero discharge dam.

*Public and Stakeholder Involvement*– None

#### **Percentage of CMS Completed**

LANL estimates 75 % of the CMS has been completed to date. Note that this percentage does not reflect the deep 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 evaluate the effects of the Cerro Grande fire. Effects of the fire on the monitoring data in Canon de Valle are being 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***

None.

***IM***

None.

**Key Personnel Issues**

None.

**Projected Work for June 2001**

***RFI Report and CMS Plan***

- No work is scheduled for this month.

***BMPs***

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

***CMS Hydrogeologic Investigations***

- Maintenance of autosamplers
- 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
- Initiate quarterly sampling

***Ecological Risk Pilot***

- Completion of the first round of sampling for the ecorisk pilot.

***CMS Bench and Pilot Studies***

- Deployment of Stormwater Management units

***IM***

- Data analysis and writing of IM Report

- Waste management, evaluation of waste data

***Public and Stakeholder Involvement***

None planned