

Permit



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Date: February 27, 2006
Refer To: ENV-WQH: 06-034

Ms. Sonia Cantu
U.S. Environmental Protection Agency, Region 6
Compliance Assurance and Enforcement Division
Water Enforcement Branch (6EN-WC)
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733



SUBJECT: FEDERAL FACILITY COMPLIANCE AGREEMENT DOCKET NO. CWA-06-2005-1701, AND ADMINISTRATIVE ORDER DOCKET NO. CWA-06-2005-1734 AT LOS ALAMOS NATIONAL LABORATORY, PERMIT APPLICATION NO. NM0030759, QUARTERLY STATUS REPORT (OCTOBER 1, 2005, TO DECEMBER 30, 2005)

Dear Ms. Cantu:

Enclosed for your review is the Quarterly Status Report for Los Alamos National Laboratory in accordance with the Federal Facility Compliance Agreement (FFCA) Docket No. CWA-06-2005-1701, dated February 3, 2005, and the Administrative Order (AO) Docket No. CWA-06-2005-1734 dated March 22, 2005. The Quarterly Status Report includes corrective action activities required under the FFCA and AO for the period from October 1, 2005, through December 31, 2005. The Quarterly Status Report includes the following Enclosures:

- (1) FFCA Quarterly Status Report, 4th Quarter - October 1, 2005 to December 30, 2005
- (2) Corrective actions to address w/SAL exceedances at SWMUs and AOCs.
- (3) Watershed Scale Corrective actions to address w/SAL exceedances

Please contact Steve Veenis at (505) 667-0013 or Mike Saladen at (505) 665-6085 if you need additional information concerning the status of the Laboratory's corrective action activities.



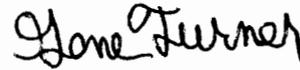
16307

Sincerely,



Steven Rae
Group Leader
Water Quality & Hydrology Group

Sincerely,



Gene Turner
Environmental Permitting Manager
NNSA/LASO

SR:GT:SV/lm

Enclosures: a/s

Cy: Taylor Sharpe, USEPA, Region 6, Dallas, TX, w/enc.
Isaac Chen, USEPA, Region 6, Dallas, TX, w/enc.
Marcy Leavitt, NMED/SWQB, Santa Fe, NM, w/enc.
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Cathy Smith, ENV-WQH, w/o enc., MS K497
Phil Wardwell, LC-ESH, w/o enc., MS A187
ENV-WQH File, w/enc., MS K497
IM-9, w/enc., MS A150

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FFCA Quarterly Status Report October 1, 2005 through December 31, 2005

Deadlines & Milestones

- October 28, 2005 - Monthly wSAL Exceedance Report submitted to EPA and NMED
- November 18, 2005 - Monthly wSAL Exceedance Report submitted to EPA and NMED
- November 29, 2005 - Quarterly Status Report submitted to EPA and NMED
- December 19, 2005 - Monthly wSAL Exceedance Report submitted to EPA and NMED

Progress Made in Meeting Other Deadlines & Milestones

- Completion of 230 BMP inspections at 200 Sites
- Installation of 132 new BMPs with maintenance conducted at 57 Sites
- Collection of 14 site-specific storm samples and 6 gaging station storm samples

Reasons for any Non-compliance

- In accordance with FFCA, Section 24, LANL compared results of storm water monitoring to appropriate wSALs to determine whether pollutant or contaminant transport had occurred. Additionally, LANL initiated appropriate corrective actions to identify sources and to install, re-examine, repair and modify BMPs required to reduce the migration of pollutants on a site-by-site basis. There were no non-compliances for this reporting period.

Corrective Actions Taken to Address wSAL Exceedances

- See Enclosures II and III
- Conducted ongoing installation, inspection and maintenance of erosion controls at Sites identified in FFCA Table 2 which have not collected site-specific storm water runoff samples

Description of any Matters Relevant to Status of Compliance

- Surface Water Assessment Team (SWAT) meeting held on October 19 and November 9, 2005 to discuss FFCA related matters with NMED
- Participated in Pajarito Plateau Watershed Partnership (PPWP) and East Jemez Resource Council (EJRC) meetings in October and November 2005 to discuss:
 - a) NMED/SWQB proposal on establishing TMDLs for ephemeral streams
 - b) Data collection to support paper describing the effect the Cerro Grande Fire had on sedimentation in Los Alamos reservoir
 - c) Los Alamos County's Standards regarding BMPs for Stormwater Management

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- Water Quality and Hydrology Group (ENV-WQH) and Remediation Services (ENV-RS) continue their efforts in evaluating storm water data to assess background conditions and to determine Laboratory and non-Laboratory derived pollutants
- Bi-weekly conference calls w/EPA permit writer. Provide supplemental application information as requested.

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Watershed Scale Corrective Actions to Address wSAL Exceedances

- Pueblo Canyon Stream Bank Stabilization Project Status: Continued inspection of willows. Plans being considered for installation of additional willows during FY06 where practicable.
- Erosion Control and Support
 - Ongoing maintenance of Surface Water Tracking System (SWTS) database to enhance tracking/inspection capabilities including hand-held GPS units.
 - Use GIS capability for map and drainage analysis support with respect to contaminant source identification
- Provide data analysis and interpretation
 - Evaluated storm water data after four samples were collected at specific stations/sites to determine if concentrations exceed a standard, benchmark, or wSAL.
 - Demonstrate if the analyte is likely of LANL origin.
 - Compared result to existing background levels if available.
 - Determined the source and assign responsibility for the corrective action (i.e., source removal, BMPs, institutional controls, BATs, long-term stewardship or benthic studies)
- Continued development of FFCA Quality Assurance Plan
- Conducted inspection and maintenance of BMPs at SWMUs, AOCs and other sites throughout watershed
- An evaluation of Los Alamos Canyon low-head weir was conducted to assess the continued benefit of this structural control located near the eastern Laboratory boundary. A report is being developed to summarize the findings of this effort
- Participation in Pajarito Plateau Watershed Partnership (PPWP) for improvement watershed awareness and management on the plateau to include watershed scale storm water planning and support
- Construction General Permit (CGP) – The Laboratory's CGP requires that a Notice of Intent (NOI) be submitted for soil disturbing activities greater than 1 acre in size. During the past quarter, inspections and follow up BMP maintenance (where applicable) were conducted at approximately 38 separate construction projects within Sandia, Pajarito, Water, Los Alamos, Potrillo, Mortandad and Canon de Valle watersheds

Remedial Services Corrective Action Efforts

- The Environmental Remediation and Surveillance Program (ENV-ERS) submitted the Investigation Report for the Middle Mortandad/Ten Site Aggregate to the NMED on time as stipulated in the NMED Consent Order. This NMED deliverable is the first of its kind for the Laboratory and represents a substantial effort to identify and document the nature and extent of contamination, as well as potential risk to human health and the environment, associated with Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) in the Middle Mortandad/Ten Site aggregate. This aggregate, which is part of the Mortandad Watershed, includes 61 SWMUs and 24 AOCs. The report recommends 1) collection of a

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few additional samples to determine vertical extent of contamination within three areas of the aggregate and 2) a limited removal action to reduce risk associated with polyaromatic hydrocarbons within one area of the aggregate.

- On September 26 and 27, 2005, approximately 40 cubic yards of waste consisting of contaminated soil, concrete, and piping from six Potential Release Sites (PRSs) at TA-33 were shipped to NTS for final disposition. During the week of September 19, 2005, the Laboratory received certification from the Department of Energy to ship Low Level Waste (LLW) to the Nevada Test Site (NTS). The waste shipments mark a highly successful yearlong collaboration between the Laboratory's Nuclear Waste and Infrastructure Services Division's Solid Waste Operations Group (NWIS-SWO), the Environmental Remediation Services Program (ENV-ERS), and other key Laboratory organizations. The shipments exceeded an Appendix F Performance Measure that calls for the Laboratory to attain certification for NTS LLW shipments, and make at least two such shipments, before the end of FY05. Furthermore, having the ability to ship LLW to NTS will reserve more room for other programmatic wastes in the Laboratory's existing LLW pits at TA-54, Area G.
- Monitoring of springs, surface water, and sediment in White Rock Canyon has been conducted as a part of the Laboratory's Environmental Surveillance Program since the early 1970s. This year Laboratory personnel sampled 21 springs, 5 surface water sites, and 8 sediment locations. Sampling and monitoring of groundwater emerging from springs along the Rio Grande has been an important part of the Laboratory's Environmental Surveillance Program. This activity is now an important part of the Site-Wide Groundwater Monitoring Plan, soon to be finalized as a requirement of the NMED Consent Order.

Personnel from the Water Quality and Hydrology Group (ENV-WQH) completed their annual White Rock Canyon sampling trip during the week of September 26-29. The participants this year included personnel from ENV-WQH, EES-9, CER-20, and San Ildefonso Pueblo. A separate sampling group, including personnel from the NMED DOE Oversight Bureau (NMED DOE/OB) and Concerned Citizens for Nuclear Safety (CCNS), was on the river completing sampling during this same period.

- ENV-WQH has implemented the interim storm water controls at Hillside 137 (see attached photos). Hillside 137 is on the north side of Los Alamos Canyon, and contains contaminants from the original TA-1 operations. These storm water controls consist of rock check dams, run-on diversion and a log crib wall at the bottom of the slope. These actions will bring the Laboratory into compliance with the MSGP. However, these should be considered as temporary solutions and ENV-WQH will continue working with the LA Inn owners on the long-term solution for this site. If the LA Inn owners are not able to obtain financing for their renovation plans, LANL and DOE will have to determine how to fund a long-term solution for this site.
- A Mitigation Action Plan (MAP) Annual Report has been prepared by the U.S. Department of Energy (DOE) National Nuclear Security Administration (NNSA) Los Alamos Site Office (LASO). It is part of the *Special Environmental Analysis for the Department of Energy National Nuclear Security Administration, Actions Taken in Response to the Cerro Grande Fire at Los Alamos National Laboratory, Los Alamos, New Mexico* (SEA) (DOE

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2000a) and must be completed to maintain compliance under the National Environmental Policy Act (NEPA). This Annual Report is made available upon request to the public as part of the implementation of the SEA MAP.

- **Mitigation Action for Restored Burned Areas**

Restored burned areas that have been reseeded, as well as undergone other erosion hazard reduction actions, will be monitored annually for the next five years (through 2005), or until the site is stabilized. Repair, replacement, or repetition of these actions will be undertaken as needed until at least 90% revegetation is achieved or until post-fire storm event water flows approximate pre-fire flow rates according to modeling and monitoring results or as determined necessary through the development and implementation of institutional resource management plans in effect at the time.

- *Mitigation Status*

ENV-WQH is responsible for carrying out this commitment. Approximately 1,300 burned acres (520 hectares) were treated on LANL property to minimize soil loss immediately after the Cerro Grande Fire. Almost all of the treatments were short-term best management practices (BMPs) to help stabilize soils on site until the native vegetation can reestablish. The Burned Area Rehabilitation Treatment (BART) Survey, a database monitoring and tracking system, has been developed to identify sites and generate reports of additional work needed. Total vegetation cover in Fall 2005 remains significantly less than in Fall 2001. Vegetation cover may be stabilizing from an initial peak that may have been maintained by seeded grasses growing in soil mulched with straw. The gradual loss of mulch and overall lack of precipitation may have lowered the potential for understory vegetation cover, despite having above-average precipitation this past year. Total ground cover is essentially the same between Fall 2001 and Fall 2005. Total ground cover represents all forms of cover that protect the soil from wind and water erosion. In 2003, a Revised Universal Soil Loss Equation was used to determine that, overall, total cover *SEA Mitigation Action Plan 2005 Annual Report February 10, 2006* was sufficient to prevent soil loss in excess of the Natural Resources Conservation Service acceptable rate of soil loss. This indicates that total and vegetative cover has recovered to a point that protection of the soil from excessive erosion has been achieved. Additional monitoring of these sites should not be necessary. Reports, to be released by ENV-WQH and -ECO in 2006, present and discuss results from both the BART Survey and the soil loss model results.

- **Mitigation Action for Constructed Flood Control and Erosion Damage Reduction**

Removal of the constructed flood control and erosion damage reduction features (such as lowhead weirs, sediment detention basins, and articulated concrete mattresses) and the flood retention structure, along with other potential alternative actions, will be considered when storm event water flows have returned to pre-fire levels as denoted by vegetation recovery and modeling information. It is estimated that the storm event water flows will have returned to pre-fire levels over about the next 5 to 10 years (2005–2010); site conditions will be reviewed every two years to

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determine when post-fire storm event water flow levels have returned to pre-fire levels. Additional NEPA and other regulatory compliance would be necessary to facilitate making long-term DOE decisions regarding these structures when these actions become ripe for consideration. If the structures are removed, recontouring and reseeded of these areas with appropriate site-specific seed mixtures would be conducted until these construction sites have been at least 90% revegetated or as determined appropriate through the implementation of institutional resource management plans in effect at the time.

○ *Mitigation Status*

NNSA is responsible for carrying out this commitment. NNSA issued the *Environmental Assessment on Proposed Future Disposition of Certain Flood and Sediment Retention Structures at Los Alamos National Laboratory* (DOE 2002) and a Finding of No Significant Impact in August 2002. LANL subject matter experts will continue to monitor storm events to determine when flows have returned to pre-fire levels or equilibrium. This information will be considered by NNSA in determining the scope and timing of flood control and erosion damage reduction structure removal actions. The environmental assessment also considered the effects of disposition of these structures after storm event water flow levels have returned to pre-fire levels or equilibrium. On average, the Pajarito Plateau receives 18.7 inches (47.6 cm) of precipitation annually. Precipitation was 26% less than average in 2000 (14.0 inches [35.1 cm]), 22% less in 2001 (14.6 inches [36.6 cm]), 37% less in 2002 (11.9 inches [29.7 cm]), and 48% less in 2003 (10.1 inches [25.2 cm]). Total storm water runoff measured from watersheds at LANL in 2000 was 2.2 times greater than the historic average in 2000, 0.5 times greater in 2001, 0.9 times less than average in 2002 and 22 times less than average in 2003 (Gallaher and Koch 2004). In general it appears that runoff yield has decreased from immediate post-fire values. However, because of rainfall variability, NNSA does not have sufficient data at this time to make that determination.

○ **Mitigation Action for Water Pooling and Wetlands**

Monitoring for development of water pooling and wetlands associated with the flood control structure and other erosion damage reduction features will be conducted for the lifetime of these structures. Evaluation of the form and function of these areas with respect to wildlife use, wildlife behavioral changes, habitat modification, and other ecological features will be performed. These areas will be managed, as appropriate, through the implementation of institutional resource management plans in effect at the time.

Mitigation Status

ENV-ECO is responsible for carrying out this commitment. Two large erosion control structures were constructed following the Cerro Grande Fire to control storm water runoff and sediment from burned areas. A gabion weir was constructed above the junction of State Road 4 and Hwy 502 in Los Alamos Canyon. Total station surveys conducted in 2002 and 2005 determined a net gain of 2,607 cubic yards (1,981 cubic meters) of sediment over the past three years. Sediment depths behind the Los Alamos Canyon weir range between 1 and 2.5 feet (0.3 and 0.75

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meters). In Pajarito Canyon a large cement flood retention structure was constructed. Total station surveys conducted in 2002 and 2005 determined a net gain of 1,176 cubic yards (894 cubic meters) of sediment over the past three years with a sediment accumulation of 2.0 feet (0.6 meters) from 2003 to 2005.

Biologists from the Army Corps of Engineers conducted a sitewide survey of wetlands at LANL. The area above the Los Alamos Canyon weir is not developed enough to be considered a jurisdictional wetland. The area behind the flood retention structure in Pajarito Canyon has received significant stormwater runoff and sediment deposition in 2005, however, there is no long-term water pooling. The Army Corps of Engineers survey did not identify this area as having any jurisdictional wetlands. The area behind the Los Alamos Canyon weir was severely disturbed during construction activities. Cottonwood and willow cuttings were planted in the riparian area and some of them have responded well. The upland area that was disturbed during construction was reseeded and has also responded well. There is now sufficient vegetation to support habitat for many of the bird and small animal species found on the Pajarito Plateau. The presence of standing water during part of the year also acts to attract wildlife to the site. The upland side slopes above the Pajarito Flood Retention Structure were seeded with a native species mix and recovery here has been favorable as well. This site probably receives more large mammal use than the Los Alamos Canyon site, as evident by the numerous elk and deer prints in the sediments.