TA-16

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Date: March 9, 2006
Refer to: ER2006-0136

Mr. James Bearzi
NMED – Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

RECEIVED
MAR 2006
NMED Hazardous Waste Bureau

SUBJECT: RESPONSE TO THE NOTICE OF DISAPPROVAL FOR THE ACCELERATED CORRECTIVE ACTION WORK PLAN FOR AREA OF CONCERN 16-024(v) AND SOLID WASTE MANAGEMENT UNITS 16-026(r) AND 16-031(f) AT TECHNICAL AREA 16

Dear Mr. Bearzi:

Enclosed please find two hard copies with electronic files of the response to the notice of disapproval for the "Accelerated Corrective Action Work Plan for Area of Concern 16-024(v) and Solid Waste Management Units 16-026(r) and 16-031(f) at Technical Area 16."

If you have any questions, please contact Melanee Shurter at (505) 667-7369 (mshurter@lanl.gov) or Tony Trujillo at (505) 845-5987 (ltrujillo@doeal.gov).

Sincerely,

David McInroy, Deputy Program Director
Environmental Remediation & Surveillance
Los Alamos National Laboratory

Sincerely,

David Gregory, Federal Project Director
Department of Energy
Los Alamos Site Office

6608

DM/DG/SM/jr

Enclosure: Two hard copies with electronic files of the response to the notice of disapproval for the "Accelerated Corrective Action Work Plan for Area of Concern 16-024(v) and Solid Waste Management Units 16-026(r) and 16-031(f) at Technical Area 16" (ER2006-0130)

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Response to the Notice of Disapproval for the
Accelerated Corrective Action Work Plan for Area of Concern 16-024(v)
and Solid Waste Management Units 16-026(r) and 16-031(f) at Technical Area 16
Los Alamos National Laboratory EPA ID No: NM0890010515
HWB-LANL-06-003
Dated February 3, 2006

INTRODUCTION

This submittal is the response by Los Alamos National Laboratory (LANL or the Laboratory) to the notice of disapproval regarding the "Accelerated Corrective Action Work Plan for Area of Concern 16-024(v) and Solid Waste Management Units 16-026(r) and 16-031(f) at Technical Area 16." The notice was issued by the New Mexico Environment Department (NMED) Hazardous Waste Bureau on February 3, 2006. The work plan was submitted by the Laboratory to NMED on January 20, 2006.

NMED's comments are included verbatim; the Laboratory's response follows each NMED comment. The Laboratory's responses indicate what revisions to the work plan will be made.

This response contains data on radioactive materials, including source, special nuclear, and by-product material. The management of these materials is regulated under the Atomic Energy Act and is specifically excluded from regulation under the Resource Conservation and Recovery Act and the New Mexico Hazardous Waste Act. Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to NMED in accordance with U.S. Department of Energy policy.

COMMENTS

NMED Comment

1. *Section 2.3.1 Summary of Chemicals of Potential Concern, pg. 5:*

   NMED assumes that the fire trucks housed at this station responded to incidents Facility-wide and not just those at TA-16. The Permittees must address the potential of fire trucks becoming contaminated with radionuclides from other sites at the Facility. Based on this information, the Permittees may need to analyze for alpha spectroscopy, beta spectroscopy, and tritium at SWMU 16-026(r).

LANL Response

1. According to Los Alamos County Fire Department personnel, all responses to calls within technical areas (TAs) with known radionuclide contamination are followed by radionuclide screening before the vehicle is allowed to leave that particular site. Because of this screening, radionuclides were not identified as chemicals of potential concern at Solid Waste Management Units (SWMU) 16-0269(r). This screening is a Laboratory requirement because these vehicles also respond to calls in the Los Alamos townsite. Although it is located on Laboratory property, Fire Station Number 5 is operated by the Los Alamos County Fire Department.

   U.S. Department of Transportation regulations require radiological screening of all samples being transported to an off-site laboratory. If radiological screening of collected samples indicates the presence of radionuclides, the additional suggested analytes or analytical methods (alpha spectroscopy, beta spectroscopy, and tritium) will be added to the sample suite.

NMED Comment

2. *Section 5.0 Investigation Methods, pg. 10:*

   NMED does not accept references to SOPs as the sole description of field activities. The permittees must describe the following SOPs in Table 1:

   - SOP-01.06
   - SOP-01.07
   - SOP-01.10
   - SOP-01.12
   - SOP-03.11

LANL Response

2. Table 1 has been revised and is included as Attachment A.

NMED Comment

3. *Section 5.1.2 Sampling and Excavation Activities, pg. 10:*

   The Permittees plan to collect samples using the "spade and scoop method described in SOP-06.09 or with the assistance of a backhoe or similar equipment, as appropriate." The Permittees should be using an EnCore™ sampler (or equivalent) on relatively undisturbed soil to collect samples for volatile organics.

   The Permittees also state that "[f]ield screening for using an HE spot-test kit may also be conducted to characterize area of gross contamination." If RDX was the only explosive compound used at TA-16, the immunoassay test alone would be appropriate. Because it wasn't the only explosive compound, the Permittees must suspect other explosive compounds could be present in the soil. A combination of the immunoassay test and the HE spot test should be used because the spot test is sensitive to explosive compounds in addition to RDX. The Permittees must also spot test for TNT.

   NMED does not believe that VOCs will be detected in the proposed 0-6-inch sampling interval. Instead, the Permittees must collect samples from the 6-12-inch interval.

LANL Response

3. EnCore samplers (or equivalent) will be used to collect samples for volatile organic compound (VOC) analysis when sampling undisturbed soils. Of the proposed sample intervals, this type of sampler can only be used for the 6- to 12-in. interval. Deeper intervals will be collected using a backhoe and therefore will be disturbed and unsuitable for the EnCore sampler. These deeper intervals (>4 ft in depth) would not be accessible to personnel because 4 ft is the maximum entry depth allowed by the Occupational Safety and Health Administration (OSHA) without established egress controls. All samples collected from below this depth will be collected in a standard sample jar. Previous excavation activities in this portion of TA-16 indicate that the depth to bedrock varies from 4 to 6 ft below ground surface (bgs). EnCore samplers could not be used if sampling took place below the soil/bedrock interface in a zone of consolidated material.

The high-explosive (HE) immunoassay test kit that the Laboratory proposes to use for field screening is the D-TECH. This test kit has been used successfully in other explosives-related investigations not only at the Laboratory but also by the U.S. Environmental Protection Agency (EPA) at numerous U.S. Department of Defense facilities. This test kit accurately detects both hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) and 2,4,6-trinitrotoluene (TNT) at concentrations as low as 0.5 ppm. The HE spot has a much higher detection limit (approximately 100 ppm) and will detect at least four individual HE compounds: RDX; octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX); TNT; and pentaerythriotol tetranitrate (PETN). Both test kits will be used for field screening.

The proposed sampling interval of 0 to 6 in. will be changed to 6 to 12 in., as requested.

NMED Comment

4. *Section 5.1.3 Fixed Laboratory Analytical Methods, pg. 11:*

   The Permittees must also analyze the samples collected at SWMU 16-024(v) for perchlorate.

LANL Response

4. Perchlorate will be added to the analyte suite at Area of Concern 16-024(v), as requested.

NMED Comment

5. *Section 5.2.2 Excavation and Confirmation Sampling*

   The Permittees plan to collect samples using the "spade and scoop method described on SOP-06.09 or with the assistance of a backhoe or similar equipment, as appropriate." The Permittees should be using an EnCore™ sampler (or equivalent) on relatively undisturbed soil to collect samples for volatile organics.

   The Permittees are proposing to sample only the last approximately 80 feet of the pipe. Because the intent of this work plan is to complete a final remedy, the entire site must be investigated. If the pipe is not encountered, the Permittees must collect additional samples at 6-12-inches and the soil/tuff interface at the location where the first bend in the pipe occurred (approximately 30 feet south of building 180) according to Figure 4. If the pipe is encountered, the Permittees must collect the samples from the intervals immediately below the pipe.

LANL Response

5. EnCore samplers (or equivalent) will be used to collect samples for VOC analysis when sampling undisturbed soils. Of the proposed sample intervals, this type of sampler can only be used for the 6- to 12-in. interval. Deeper intervals will be collected using a backhoe and therefore will be disturbed and unsuitable for the EnCore sampler. These deeper intervals (>4 ft in depth) would not be accessible to personnel because 4 ft is the maximum entry depth allowed by OSHA without established egress controls. All samples taken from below this depth will be collected in a standard sample jar. Previous excavation activities in this portion of TA-16 indicate that the depth to bedrock varies from 4 to 6 ft bgs. EnCore samplers could not be used if sampling took place below the soil/bedrock interface in a zone of consolidated material.

As shown in Figure 4 of the work plan, the entire length of the overflow pipe will be sampled and not just the last 80 ft. Figure 4 shows the four locations where samples will be collected: one where the drainline leaves the building, one at the drainline outfall, and one at each of the two elbows in the drainline. At least two samples will be collected at each of these four locations. This sampling frequency constitutes a reasonable investigation of the entire SWMU. As stated in Section 5.2.2 of the work plan, it is unclear if the drainline was ever installed; if the drainline or soil contamination is encountered, the entire drainline will be removed, and additional samples will be collected, as appropriate. The sample intervals will be 6 to 12 in. and whatever interval is directly below the pipe. Samples will be collected from the four proposed locations. If soil contamination is found through field screening, additional samples will likely be collected.

If the drainline is not encountered, samples will be collected from the 6- to 12-in. interval and the interval spanning the soil/tuff interface. Samples will be collected only from the four proposed locations identified in Figure 4.

NMED Comment

6. *Section 7.0 Schedule*

   According to Section VII.F of the Consent Order, the field work must be completed within 180 days of the start of field work. The Permittees must notify NMED within three business days when the field work is complete so a due date for the Remedy Completion Report can be calculated.

LANL Response

6. All fieldwork described in the work plan will be completed within 180 days. The Laboratory will notify NMED within three business days when accelerated corrective action activities, including disposal of wastes, have been completed so that a due date for a remedy completion report can be determined.

Attachment A

Revised Table 1

Table 1
Brief Description of Field Investigation Methods

Method	Summary
Spade and Scoop Collection of Soil Samples	This method is typically used for collection of shallow (i.e., approximately 0 to 12 in.) soil or sediment samples. The "spade-and-scoop" method involves digging a hole to the desired depth, as prescribed in the sampling and analysis plan, and collecting a discrete grab sample. The sample is typically placed in a clean stainless steel bowl for transfer into various sample containers.
Hand Auger Sampling	This method is typically used for sampling soil or sediment at depths of less than 10 to 15 ft, but may in some cases be used for collecting samples of weathered or nonwelded tuff. The method involves hand-turning a stainless-steel bucket auger (typically 3- to 4-in. inner diameter) and creating a vertical hole that can be advanced to the desired sample depth. When the desired depth is reached, the auger is decontaminated before advancing the hole through the sample depth. The sample material is transferred from the auger bucket to a stainless-steel sampling bowl before filling the various required sample containers.
Split-Spoon Core-Barrel Sampling	In this method, a stainless steel core barrel (typically 4-in. inner diameter and 2.5 ft long) is advanced using a powered drilling rig. The core barrel extracts a continuous length of soil and/or rock that can be examined as a unit. The split-spoon core barrel is a cylindrical barrel split length-wise so that the two halves can be separated to expose the core sample. Once extracted, the section of core is typically screened for radioactivity and organic vapors, photographed, and described in a geologic log. A portion of the core may then be collected as a discrete sample from the desired depth.
Headspace Vapor Screening	Individual soil, rock, or sediment samples may be field screened for volatile organic compounds by placing a portion of the sample in a plastic sample bag or in a glass container with a foil-sealed cover. The container is sealed and gently shaken and allowed to equilibrate for 5 min. The sample is then screened by inserting a photoionization detector (PID) probe into the container and measuring and recording any detected vapors.
Portable XRF Field Screening	A portable x-ray fluorescence (XRF) analyzer may be used in the field to measure metals content in soils to provide screening data and guide sampling for determining the extent of metals contamination. The instrument includes sealed radioactive sources and can identify and quantify 26 elements. The instrument must be properly warmed and calibrated according to manufacturer's directions before use. Soil samples should be homogenized and have large rocks, vegetation, and any foreign objects removed (samples may be sieved). The sample surface should be flattened or smoothed with a trowel or similar tool. For quantitative work, reference standard materials should be analyzed and the precision of the instrument determined at least once per day or once for every 20 samples. Precision may be determined by performing multiple analyses of certified reference standard materials.
Sample Control and Field Documentation	The collection, screening, and transport of samples is documented on standard forms generated by the Sample Management Office. These include sample collection logs, chain-of-custody forms, and sample container labels. Collection logs are completed at the time of sample collection, and are signed by the sampler and a reviewer who verifies the logs for completeness and accuracy. Corresponding labels are initialed and applied to each sample container, and custody seals are placed around container lids or openings. Chain-of-custody forms are completed and assigned to verify that the samples are not left unattended.

Table 1 (continued)

Method	Summary
Field Quality Control Samples	Field quality control samples are collected as directed in the March 1, 2005, Compliance Order on Consent as follows: Field Duplicate: At a frequency of 10%; collected at the same time as a regular sample and submitted for the same analyses. Equipment Rinsate Blank: At a frequency of 10%; collected by rinsing sampling equipment with deionized water and submitting the rinsate for laboratory analysis. Trip Blanks: Required for all field events that include the collection of samples for volatile organic compound analysis. Trip blanks are containers of certified clean sand that are opened and kept with the other sample containers during the sampling process.
Field Decontamination of Drilling and Sampling Equipment	Dry decontamination is the preferred method to minimize the generation of liquid waste. Dry decontamination may include the use of a wire brush or other tool for removal of soil or other material adhering to the sampling equipment, followed by use of a commercial cleaning agent (nonacid, waxless cleaners) and paper wipes. Dry decontamination may be followed by wet decontamination if necessary. Wet decontamination may include washing with a nonphosphate detergent and water, followed by a water rinse and a second rinse with deionized water. Alternatively, steam cleaning may be used.
Containers and Preservation of Samples	Specific requirements/processes for sample containers, preservation techniques, and holding times are based on U.S. Environmental Protection Agency guidance for environmental sampling, preservation, and quality assurance. Specific requirements for each sample are printed on the sample collection logs provided by the SMO (size and type of container, e.g., glass, amber glass, polyethylene, preservative). All samples are preserved by placing them in insulated containers with ice to maintain a temperature of 4°C. Other requirements, such as the use of nitric acid or other preservatives, may apply to different media or analytical requests.
Management of Environmental Restoration Project Waste	The management of waste generated during corrective action activities requires documentation of the underlying hazardous constituents present in the characteristic hazardous waste. Wastes are characterized based on a review of historical site information, existing site data, and/or waste analysis. Means to store, control, and transport potential wastes are identified prior to the start of field operations. Wastes are segregated by classification and compatibility to prevent cross-contamination and are packaged to meet on-site and/or off-site waste acceptance criteria. Disposal is coordinated with an approved disposal facility or through Los Alamos National Laboratory's waste operations group. Wastes are managed in accordance with U.S. Department of Energy orders, state, and federal regulations, and specific project policies. Under specific conditions, environmental media may be returned to its point of origin; however, environmental media contaminated with hazardous waste are managed as hazardous waste until the media no longer "contain" the hazardous waste.
Waste Characterization	Project wastes are characterized by the field waste management coordinator, field team leader, or other member of the project team using a Waste Characterization Strategy Form (WCSF). The waste characterization strategy involves a review of existing analytical data or documentation for the waste stream, development of a sampling strategy, and verification of facility waste acceptance criteria. The WCSF includes site characteristics; site activities; responsible parties; waste stream characterization information; and storage, treatment, and disposal options. The WCSF is reviewed, and waste management documentation is prepared.

Table 1 (continued)

Method	Summary
Collection of Soil and Water Samples in Explosive Areas	The collection, handling, and transport of samples potentially contaminated with high explosives (HE) require prior visual examination and field analytical screening to characterize the level of HE contamination. Contamination characterization is completed before sample collection and involves identification of homogeneous and heterogeneous soil sample areas within the site, visual examination of the areas, and quantitative field screening of homogeneous soil mixtures with an HE spot test kit or other field test. Based on characterization results, the sampling site is categorized according to the level of HE contamination. The sample collection method specifies the use of equipment that does not produce heat, open flames, or sparks. Samples collected from areas determined to be positively contaminated are packaged and transported to the Materials Dynamics Group (DX-2) or a host-group-approved laboratory with written approval for removal from the HE corridor.
Coordination and Evaluation of Geodetic Surveys	A designated project participant determines the type of survey to be performed. This consists of either a "stakeout" survey, used for surveying previously defined locations, or an "unknown location survey," when the surveying of unknown locations is performed using existing coordinates. Survey personnel who perform control, property, easement, or boundary surveys must be registered professional land surveyors. Preparation for survey activities includes communication of expectations and requirements (e.g., degree of accuracy, locations, type of survey) to survey personnel. Survey personnel must chronologically document all survey activities and mark, identify, and record all survey locations, as instructed. Survey personnel prepare geodetic survey data for quality assurance review. The survey data are submitted to the project team leader and the quality program project leader for review. When the data are determined to be acceptable, they are finalized (i.e., assigned point labels), uploaded to a survey location template, and saved to a local disk or hard drive. The final files are archived by submitting them to ERLocationUpload@lanl.gov.