ERID-211406

Los Alamos NATIONAL LABORATORY EST.1943

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Water Quality & RCRA Group (ENV-RCRA)
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Los Alamos Site Office, A316
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(505) 667-5794/FAX (505) 667-5948

Date: March 6, 2012
Refer To: ENV-RCRA-12-0056
LAUR: 12-10412

Mr. John E. Kieling, Manager
RCRA Permits Management Program
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Dear Mr. Kieling:

SUBJECT: TRANSMITTAL OF SOIL SAMPLING PLAN FOR THE TECHNICAL AREA 16 OPEN BURNING TREATMENT UNITS, LOS ALAMOS NATIONAL LABORATORY, EPA ID NO. NM0890010515

The purpose of this letter is to transmit the enclosed soil sampling plan for the interim status hazardous waste management units at Technical Area (TA) 16. This document is being submitted for review and approval by the New Mexico Environment Department – Hazardous Waste Bureau (NMED-HWB). The enclosed soil sampling plan has been drafted and sampling locations were chosen based on conversation with your staff on October 27, 2011. Soil samples will be collected upon approval by the NMED-HWB provided that the site conditions allow for sample collection.

If you have questions regarding this letter and the enclosed plan, please contact Mark Haagenstad of the Water Quality and RCRA Group (ENV-RCRA) at (505) 665-2014.

Sincerely,

A R Grieggs

Anthony R. Grieggs
Group Leader
Water Quality & RCRA Group
Los Alamos National Laboratory

Sincerely,

Gene E Turner

Gene E. Turner
Environmental Permitting Manager
Environmental Projects Office
Department of Energy
Los Alamos Site Office

ARG:GET:LVH/lm

Enclosure: a/s

Cy: Tim Hall, NMED/HWB, Santa Fe, NM, w/ enc., (E-File)
Dave Cobrain, NMED/HWB, Santa Fe, NM, w/enc., (E-File)
Carl A. Beard, PADOPS, w/o enc., A102
Michael T. Brandt, ADESH, w/o enc., K491
Alison M. Dorries, ENV-DO, w/o enc., K491
Scotty W. Jones, ENV-DO, w/o enc., K491, (E-File)
Sandra Powell, w/enc., WX-8, C934, (E-File)
Connie Gerth, ENV-ES, w/enc., C919, (E-File)
Mark Haagenstad, ENV-RCRA, w/o enc., K404, (E-File)
Luciana Vigil-Holterman, ENV-RCRA, w/enc., K490, (E-File)
ENV -RCRA File, w/enc., M704
IRM-RMMSO, File, w/enc., Al50 (E-File)

ENCLOSURE

SOIL SAMPLING PLAN FOR THE TECHNICAL AREA (TA) 16 OPEN BURNING (OB) TREATMENT UNITS MARCH 2012

LA-UR-12-10412

Soil Sampling Plan for the Technical Area (TA) 16 Open Burning (OB) Treatment Units March 2012

Planning Team:

Dustie Rich, Compliance Sampling Coordinator/Waste Characterization SME
Terrence Garcia, Waste Characterization SME
Luciana Vigil-Holterman, Environmental Professional
Tammy Diaz, Environmental Professional

LANL-ENV-RCRA

LA-UR-12-10412

ENV-RCRA-12-0056

BACKGROUND

Background information for this plan includes historical data and acceptable knowledge of two open burning treatment units currently in use within the Los Alamos National Laboratory (LANL) Facility boundary. The units are located at the Technical Area (TA) 16 Burn Ground (Figure 1) and are used for the open burning of high explosives wastes that include: dry high explosives, wet high explosives, and debris waste that is contaminated with high explosives. High explosives, metals, and products of combustion are all contaminants that can be associated with these treatment activities. The units have been in use for open burning operations from 1951 to the present and have been historically used for the open burning treatment of hazardous waste. Other high explosives processing activities and waste treatment activities have occurred within the TA-16 Burn Ground area, but the individual units have only been used for waste treatment activities. The areas where past explosives processing activities occurred and the locations of past waste management units are known as solid waste management units (SWMUs).

As part of the application process for a permit to treat hazardous waste and in accordance with the requirements of Title 40 of the Code of Federal Regulations, Part 264.601(b) (40 CFR § 264.601(b)), monitoring activities have been conducted at the two sites. The goal of continued monitoring at the site is to assess the potential for contamination from the ongoing treatment operations at the two units and to determine if constituents are present from historic operations within the soil around the units that could potentially adversely affect human health or the environment.

STUDY LOCATION

The study boundary for this soil sampling plan is the TA-16 Burn Ground and is composed of the two open burning treatment units (the TA-16-388 Flash Pad and the TA-16-399 Burn Tray) and SWMUs. The matrix at the TA-16 Burn Ground includes soil heterogeneity, debris, vegetation, and rocks. The sites also have potential run-off areas. Sampling events for each unit will include soil, both in and out of potential run-off areas. Sampling events will not include rocks, debris, or vegetation. Each sample point will include collection of soil from the surface to a depth of 2 inches.

CHARACTERIZATION DESCRIPTION AND GOALS

An initial site characterization assessment was performed in June 2009 and a follow-up was conducted in August 2009. The proposed soil monitoring event within this plan will add data to the ongoing monitoring of the open burning treatment units at the TA-16 Burn Ground. Collectively all monitoring activities will provide data to establish a record of the effect historic operations have had on the surrounding soils in the area.

In general, monitoring soil at the TA-16 Burn Ground aids in establishing whether contamination currently at the site poses an unacceptable risk to human health or the environment. However, analytically quantifying the specific contamination from operations at the open burning treatment units

is not possible due to the varied history of operations in and around the immediate area and the subjective nature of the analyses that currently exist for the site. Therefore, the data gathered from past, current, and future monitoring events will be incorporated into a conceptual risk analysis and can be used to make decisions concerning additional preventative or protective measures that could be introduced at the site. Data collected through monitoring also builds long-term information about the area that can be used to determine future closure requirements for the units. If risk assessed for the current characterization event is consistent with past risk screening assessments, no changes to the site plan or treatment unit operations will be recommended for the open burning treatment units. If data is inconsistent with past data or shows a marked increase in the constituents assessed, further evaluation and consultation with the New Mexico Environment Department- Hazardous Waste Bureau (NMED-HWB) will be conducted to determine the next step within the soil monitoring process.

The potential contaminants of concern associated with the units are high explosives, metals, and dioxins and furans. The proposed site characterization will include analysis for total metals and dioxins and furans. This practice is not only consistent with the previous soil sampling events, but takes into account that open burning treatment is designed to destroy the high explosives component of the waste streams treated. Therefore, high explosives analysis has not been included in monitoring activities to date. The analytical data for this soil sample collection event will undergo a review to determine the reasonability and validity of the data. Reasonability and validity of the data will assume that the site has been representatively sampled. The analytical data is evaluated by an internal data validator according to procedures based upon the National Nuclear Security Administration (NNSA) Model Data Validation Procedure. Data qualifiers and the reasons for those qualifiers are assigned to the data in accordance with the specifications of the procedure. After the validation process, the analytical data will be recommended for use in the application process for permitting and closing (in the future) the open burning units.

SOIL SAMPLING LOCATIONS

Based on discussion with personnel from the NMED-HWB, twelve (12) locations have been chosen for soil monitoring purposes. These locations are illustrated on *Technical Area 16 Burn Ground Soil Sample Monitoring Locations* (Figure 2). The locations are within the TA-16 Burn Ground around the two open burning treatment units. These areas have been determined to be sufficient monitoring locations for the site and represent areas of potential deposition from air to soil and areas of potential storm water runoff from the units. The characterization study of surface soil at the two open burning treatment units will include surface grab sampling of the top 2 inches of soil. The proposed locations do not include any areas within the SWMUs that are located at the TA-16 Burn Ground around the two open burning treatment units.

SAMPLING ACTIVITIES & ANALYSIS

The sample collection process will utilize the following:

- American Society for Testing and Materials (ASTM), Active Standard D4823-95 (2008) Standard Guide for Core Sampling,

- Scoop sampling according to ASTM D5633-04 (2008),
- Global positioning system (GPS) data collected using the Trimble GeoExplorer unit, and
- Teflon scoops and/or soil core samplers may be used.

A sample set includes the following samples:

- 12 surface (0-2 inch depth) samples at TA-16 to be analyzed for:
    - Total metals analysis 24 analyte scan using method Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) 3050B/6010C (inductively coupled plasma), collected in a 125 milliliter (mL) glass container; and
    - Dioxins/Furans analysis using method SW-846 8290A (gas chromatography/mass spectrometry), collected in a 250 mL amber container.
- Quality Assurance Samples: One sample set will be taken at the sampling site per day. Quality assurance samples will be taken as a duplicate during the first sample set per day.
    - A total metals duplicate will be collected daily, and
    - dioxin/Furan duplicate will be collected daily.

The samples will be shipped to and analyzed by a LANL-contracted independent analytical laboratory using the methods described above.

Sample collection for this characterization event will occur after the approval of this sampling plan by the NMED-HWB. Scheduling for collection of samples will be based on site conditions (e.g. snow is not covering sample locations and fire danger conditions allow for outside work to occur).

WASTE MANAGEMENT

Waste generated during the sampling event will be controlled, handled, characterized, and disposed of in compliance with applicable state, federal, and local requirements.

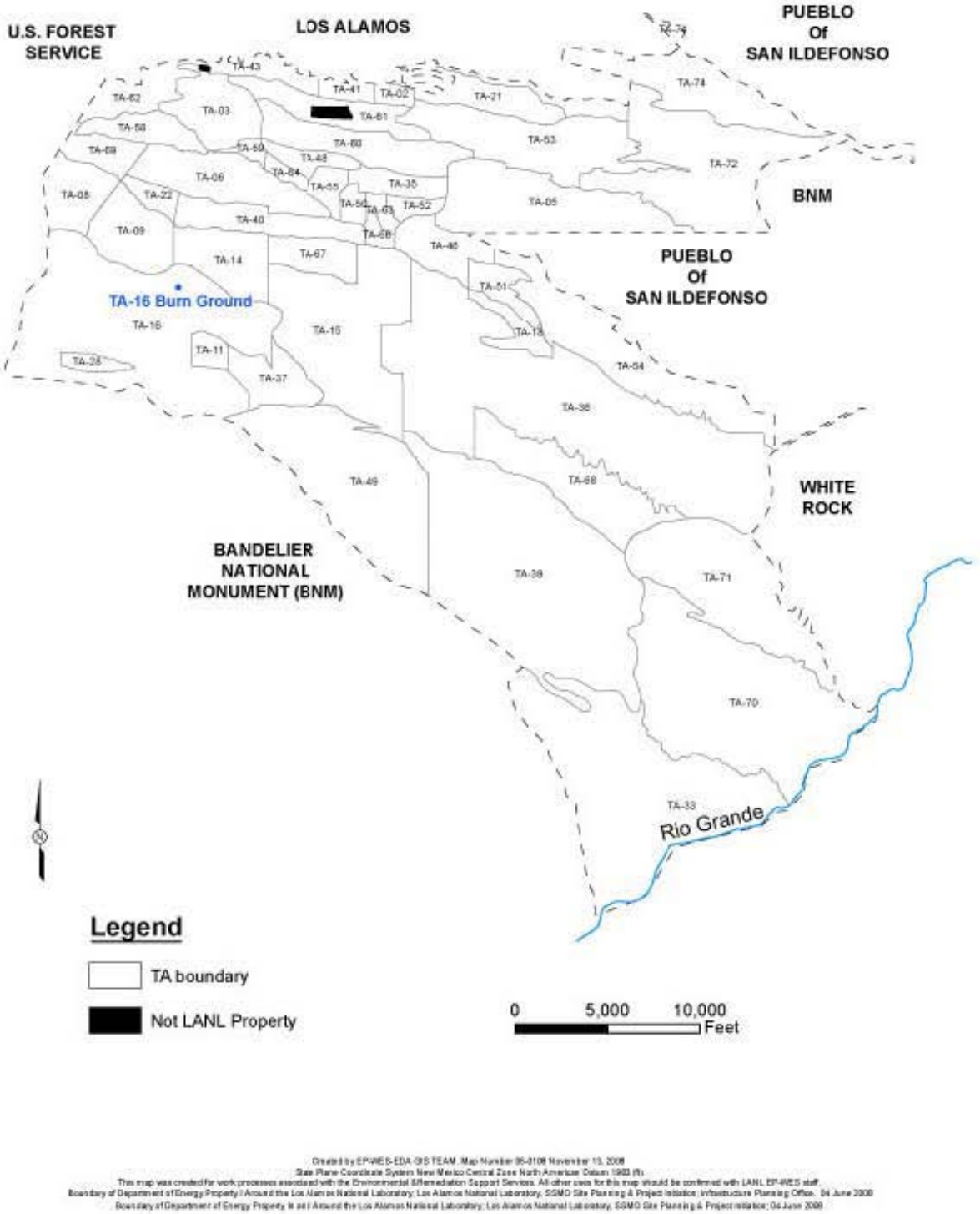

Figure 1: Location of Open Burning Treatment Units at Technical Area 16

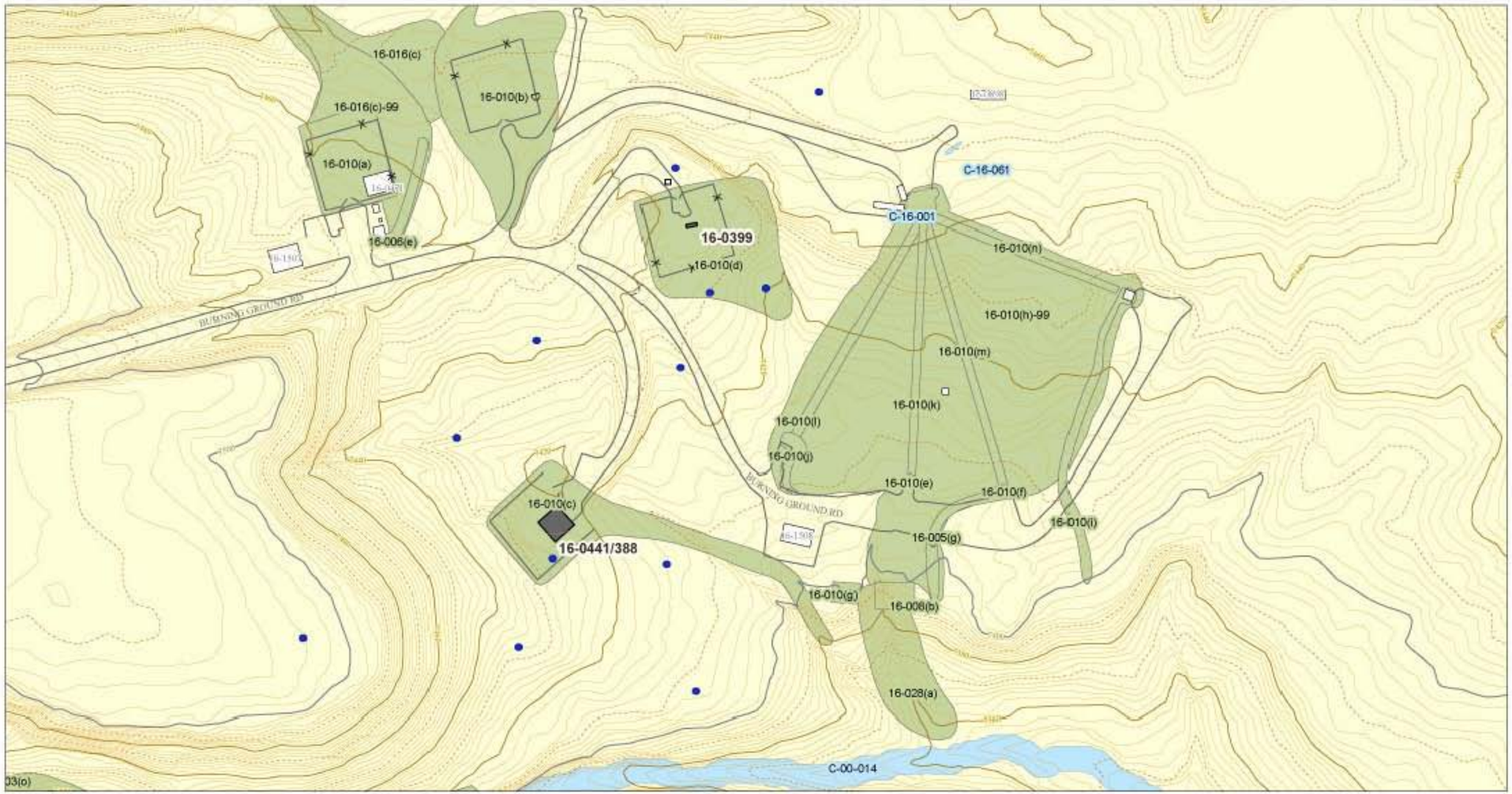

Figure 2: Technical Area 16 Burn Ground Soil Sample Monitoring Locations

Fences
Roads, Paved
100-ft Contour
20-ft Contour
10-ft Contour
2-ft Contour
RCRA waste management units
RWMU Structure
Other Structures
PRS and Areas of Concern
AOC
SWMU
Proposed Soil Sample Location
Los Alamos NATIONAL LABORATORY

DISCLAIMER
This map was created for work processes associated with the LANL Hazardous Waste Permit Facility Permit. All other uses for this map should be confirmed with LANL, ENV Division, Water Quality & RCRA.

1:1,600
0 45 90 180 Feet
0 3.57 14 21 28 Meters

1983 North American Datum
State Plane Coordinate System
New Mexico, Central Zone (US Feet)

DATA SOURCES

PATH	NAME	DATE ACCESSED	DATE PUBLISHED

Los Alamos NATIONAL LABORATORY EST. 1943

COPY

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Mr. John E. Kieling, Manager
RCRA Permits Management Program
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

RECEIVED
MAR 2012
Hazardous Waste Bureau

Dear Mr. Kieling:

SUBJECT: TRANSMITTAL OF SOIL SAMPLING PLAN FOR THE TECHNICAL AREA 16 OPEN BURNING TREATMENT UNITS, LOS ALAMOS NATIONAL LABORATORY, EPA ID NO. NM0890010515

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. John E. Kieling
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

COMPLETE THIS SECTION ON DELIVERY

A. Signature — X [signature] — ☐ Agent ☐ Addressee

B. Received by (Printed Name) U. Ramos — C. Date of Delivery 3-5-12

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type HAND DELIVERED
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* ENV-RCRA-12-0056 SSP TA-16

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

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Los Alamos Site Office