

## **Attachment E-1**

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*Waste Documentation  
(on CD included with this document)*



## Waste Characterization Strategy Form

<b>Project Title</b>	Cañon de Valle Aggregate Area at TA-14
<b>Solid Waste Management Unit and AOC Numbers</b>	SWMUs: 14-001(f), 14-002(a), 14-002(b), 14-002(c), 14-002(d and e), 14-002(f), 14-010, 14-004(a), 14-006, 14-007, 14-009 AOC: 14-001(a), 14-001(b), 14-001(c), 14-001(d), 14-001(e), C-14-001, C-14-002, C-14-003, C-14-004, C-14-005, C-14-007, C-14-008, C-14-009, 14-001(f), 14-002(a), 14-002(b), 14-002(f), 14-010
<b>Activity Type</b>	Characterization Sampling
<b>LATA Field Team Leader</b>	Ali Furmall
<b>Waste Management Coordinator</b>	Mike Le Scouarnec
<b>Completed by</b>	Kim Oman
<b>Date</b>	July 8, 2011

### Description of Activity

This work will be performed in accordance with the New Mexico Environment Department (NMED)-approved Field Implementation Plan (FIP) for Cañon de Valle Aggregate Area at Technical Area (TA) 14.

This waste characterization strategy form (WCSF) describes the management of investigation-derived waste (IDW) that is expected to be generated during the investigation (i.e., characterization sampling) within TA-14. The IDW may include, but is not limited to, municipal solid waste, drill cuttings, contact waste, decontamination fluid, petroleum-contaminated soils, and all other waste that has potentially come into contact with contaminants.

### Relevant Site History and Description

TA-14, known as Q-Site, is one of five major firing sites at the Laboratory and is used for high explosives (HE) testing. TA-14 contains 10 structures and 5 firing mounds. TA-14 was used for close observation work on small explosive charges and included both open and closed firing chambers. TA-14 has always been a dedicated site for developing and testing of explosives, including tests involving radioactive materials.

Subaggregate 8, the TA-14 Firing Sites, consists of those SWMUs and AOCs located at TA-14 which drain into the Cañon de Valle watershed. This subaggregate includes 2 Consolidated Units consisting of 8 SWMUs and 2 AOCs, 2 individual SWMUs, and 14 individual AOCs. The following table summarizes the areas which pertain to this phase of the TA-14 Area Investigation:

**Table 1 - Cañon de Valle Aggregate Area Sites**

Site ID	Subunit	Site Description
<b>TA-14</b>		
AOC 14-001(a)		Firing Site (Inactive Electrical Pull Box)
AOC 14-001(b)		Firing Site (Inactive Electrical Pull Box, Former Location)
AOC 14-001(c)		Firing Site (Inactive Electrical Pull Box)
AOC 14-001(d)		Firing Site (Inactive Electrical Pull Box)
AOC 14-001(e)		Firing Site (Inactive Electrical Pull Box)
AOC 14-001(g)		Firing site - Open Burn/Open Detonation (active)
Consolidated Unit 14-002(a)-99	SWMU 14-009	Former Firing site - Surface Disposal Area
	SWMU 14-010	Former Firing site - Former sump, line, drain, and outfall
	AOC C-14-008	Former Storage Magazine
Consolidated Unit 14-002(c)-99	SWMU 14-002(c)	Former Control Building
SWMU 14-006		Inactive sump, drain lines, and outfall
SWMU 14-003		Former burning ground
SWMU 14-007		Inactive septic tank, drain lines, outfall and drain field
AOC C-14-001		Former storage magazine
AOC C-14-003		Former HE prep shop
AOC C-14-004		Former electronics shop
AOC C-14-005		Former storage magazine
AOC C-14-007		Former storage building
AOC C-14-009		Former storage magazine

Note: Shading denotes Consolidated Units.

### Characterization Strategy

This WCSF identifies the types of wastes expected to be generated from site investigation activities. However, other types of waste may be encountered. An amendment to this WCSF will be prepared and submitted for review and approval if any of the waste streams change in description or characterization approach or a new waste stream is generated. All IDW will be managed in accordance with Los Alamos National Laboratory (LANL) Standard Operating Procedure (SOP) 5238, *Characterization and Management of Environmental Program Waste*.

Waste will initially be managed as non-hazardous in accordance with the acceptable knowledge (AK) reviews already prepared for the potential release sites covered by this investigation (See Attachment 1). A final waste determination will be completed using investigation sampling data or by direct sampling of the IDW. If the waste is directly sampled, it will be sampled within 10 days of generation, and a 21 day turnaround time for analyses will be requested. A final waste determination must be made within 45 days of generation of the waste. A WAC exception form (WEF) will be used if the generator does not meet the 45 day deadline. The generation of no path forward wastes must be approved by Department of Energy (DOE) prior to generation of the waste; however, no such wastes are anticipated for this project.

Waste accumulation area postings, regulated storage duration, and inspection requirements will be based on the type waste and its regulatory classification. The selection of waste containers will be based on U.S.



Department of Transportation requirements, waste types, and estimated volumes of IDW to be generated. Immediately following containerization, each waste container will be individually labeled with a unique identification number and with information such as waste classification, contents, radioactivity, and date generated, if applicable. A non-hazardous waste label, date of generation, the generator's name, and container contents should be placed on non-hazardous waste containers as a best management practice. Waste streams with the same regulatory classification that are destined for the same receiving facility may be combined into a single container for disposal (e.g. contact waste with drill cuttings).

Samples will be collected using the methods described in this WCSF by trained and qualified sampling personnel. Sampling personnel will record waste sampling information in accordance with EP-ERSS-SOP-5058, *Sample Control and Field Documentation* and EP-ERSS-SOP-5181, *Documentation for Waste and Environmental Services Technical Field Activities*. The field notebook will be used to document sample collection activities (e.g., equipment and sampling methods used, number and location of samples, etc.). Sampling personnel will also record field conditions, problems encountered, local sources of contamination (e.g., operating generators or vehicles), the personnel involved, equipment and supplies used, wastes generated, and field observations.

If documentation exist that the contaminant(s) originated from a listed source, although none is expected during this phase of the investigation, but the levels are below residential screening levels and the land disposal restriction treatment standards, a "contained-in" request may be submitted to the New Mexico Environment Department (NMED), who may approve removing the listings from the waste stream. A request to submit a "contained-in" determination to NMED must be submitted to ENV-RCRA through the Subcontract Technical Representative (STR) within 70 days of generating the waste. A copy of the AK Review(s) or Due Diligence Report(s) already prepared for this investigation or the NMED "contained-in" approval letter should accompany all waste profiles prepared for the waste(s) with potentially listed contaminants.

Investigation activities will be conducted in a manner that minimizes the generation of waste. Waste minimization will be accomplished by implementing the most recent version of the "Los Alamos National Laboratory Hazardous Waste Minimization Report." Waste streams will be recycled/reused, as appropriate.

**Waste #1: Municipal Solid Waste (MSW)** - This waste stream primarily consists of non-contact trash, including, but not limited to, paper, cardboard, wood, plastic, food and beverage containers, empty solution containers, and other non-contact trash. It is estimated that approximately 1 cubic yard of MSW will be generated.

*Anticipated Regulatory Status:* MSW

*Characterization Approach:* MSW will be characterized based on acceptable knowledge (AK) of the waste materials (including Material Safety Data Sheets) and methods of generation.

*Management and Disposal Method:* MSW will be segregated from all other waste streams. It is anticipated that the waste will be stored in plastic trash bags or other appropriate containers and transferred/disposed of at the County of Los Alamos Solid Waste Transfer Station or other authorized off-site solid waste facility.

**Waste # 2: Drill Cuttings (IDW)** - Drill cuttings consist of soil and rock sediments produced during the drilling of boreholes. This may include small chips of unused core samples collected with a hollow-stem

auger core barrel. Cuttings will not contain residue of drilling additives (drilling mud or foam) as only dry drilling will be used. It is estimated that approximately 3 cubic yards of borehole cuttings will be generated during this investigation.

*Anticipated Regulatory Status:* Reusable (land applied), Industrial, Low-level waste (LLW), TSCA, PCB

*Characterization Approach:* Waste characterization will be based upon the analytical results obtained from direct sampling of containerized waste. A representative sample of the cuttings will be taken within 10 days of generation and submitted for analysis with a 21 day turnaround time. A hand auger or thin-wall tube sampler will be used to collect waste material from each container, in accordance with SOP-06.10, *Hand Auger and Thin-Wall Tube Sampler*. Auguring from the surface to the bottom of the waste will be employed in a sufficient number of locations to obtain a representative sample. Samples will, at a minimum, be analyzed for volatile organic compounds (VOCs); semi-volatile organic compounds (SVOCs); radionuclides (by alpha and gamma spectroscopy); isotopic uranium, isotopic plutonium, americium-241, tritium, and strontium-90; total metals; toxicity characteristic (TCLP) metals; high explosives (HE); perchlorates; nitrate; and total cyanide (see Table 2). If process knowledge, odors, or staining indicate the cuttings may be contaminated with petroleum products, the materials will also be analyzed for total petroleum hydrocarbons (TPH [DRO/GRO]) and polychlorinated biphenyls (PCBs). Other constituents may be analyzed as necessary to meet the WAC for a receiving facility.

*Storage and Disposal Method:* The cuttings will be containerized at the point of generation in LANL approved 55-gallon steel drums, 1 yd<sup>3</sup> Wrangler Bags or other containers appropriate for the quantity of waste generated. Wastes will be stored in secure, designated non-hazardous waste areas. For nonhazardous IDW, the non-hazardous waste label, date of generation (i.e., initial placement in the container), as well as the generator's name and container contents will be placed on the non-hazardous waste containers as a best management practice. Based upon validated analytical data, the cuttings will be evaluated, using the Automated Waste Determination (AWD) system, for land application in accordance with ENV-RCRA-QP-11.0 *Land Application of Drill Cuttings*. If the cuttings meet the criteria for land application, the cuttings will be land applied in accordance with ENV-RCRA-QP-11.0. If the cuttings are characterized as LLW (exceeding the land application criteria) they will be managed in a radioactive waste staging or storage area until they can be shipped for disposal. Cuttings that cannot be land applied will be treated and/or disposed of at authorized off-site facilities appropriate for the waste classification.

**Waste #3: Contact IDW** - This waste stream is comprised of PPE, sampling equipment and other materials that contacted or potentially contacted contaminated environmental media and cannot be decontaminated. This includes, but is not limited to plastic sheeting (e.g., tarps and liners), gloves, coveralls, booties, paper towels, plastic and glass sample bottles, and disposable sampling supplies. It is estimated that approximately 1 cubic yard of contact IDW will be generated during this investigation.

*Anticipated Regulatory Status:* Industrial, LLW, Green is Clean

*Characterization Approach:* Contact IDW generated during drilling operations will be characterized using AK based on the direct sampling and analyses of the drill cuttings. Contact waste that is generated using a hand auger will be inspected before being placed in containers to determine if environmental media or staining is present, indicating contamination. If staining is present, an estimate of the portion or percentage of the item stained will be recorded. Results from the analytical data will be weighted by the extent of contamination for determining whether wastes are characteristics. If the cuttings with which the contact waste came into contact is listed, although this is not expected, then contact waste will be managed as listed, unless a "contained-in" approval is obtained.

*Storage and Disposal Method:* The contact waste may be separately containerized in drums or placed into the same containers as the media with which it is contaminated. Contact waste will be stored in

secure, designated non-hazardous waste areas. For nonhazardous IDW, the non-hazardous waste label, date of generation (i.e., initial placement in the container), as well as the generator's name and container contents will be placed on the non-hazardous waste containers as a best management practice.. If analytical data changes the waste classification, the waste will be stored in an area appropriate for the type of waste. For disposal, the separately containerized contact waste may also be combined with the material from which they originated (the WPF will document the decision to combine the waste streams). Wastes will be treated and/or disposed of in authorized on- or off-site facilities appropriate for the waste classification.

**Waste #4: Decontamination fluids (potential)** - This waste stream consists of liquid wastes generated from the decontamination of excavation, sampling and drilling equipment. This waste stream will be generated only if dry decontamination methods are not effective. It is estimated that less than 55 gallons of decontamination fluids will be generated from this activity.

*Anticipated Regulatory Status:* Industrial, Hazardous, Low-level waste (LLW), Mixed low-level waste (MLLW), Beryllium, Polychlorinated Biphenyls (PCB), Land Applied

*Characterization Approach:*

The decontamination water will be characterized based upon AK of the media with which it came into contact or using analytical results obtained from direct sampling of the containerized fluids. Representative waste characterization samples will be sampled within 10 days of generation and submitted for analysis with a 21 day turnaround time. A final waste determination will be made within 45 days of generation. Samples, if needed to meet a disposal facility WAC or due to poor AK, will be collected from the container in accordance with LANL SOP-06.15, *COLIWASA Sampler for Liquids and Slurries*. If the container does not permit COLIWASA or bailer sampling, the type of sampling equipment used will be appropriate for the waste container and properly operated in accordance with Chapter 7 and Appendix E of the RCRA Waste Sampling Draft Technical Guidance (EPA 530-D-02-002, August 2002, <http://www.epa.gov/osw/hazard/testmethods/sw846/pdfs/rwsdtg.pdf>). Samples will at a minimum be analyzed for TAL metals; radionuclides (by alpha and gamma spectroscopy); isotopic uranium, isotopic plutonium, americium-241, tritium, and strontium-90; VOCs; SVOCs; oil/grease; TSS; pH; explosive compounds; PCB; cyanide; nitrates/nitrites; and perchlorates; and pesticides/herbicides. Other constituents may be analyzed as necessary to meet the WAC of the disposal facility. Note that decontamination fluids destined for LANL's sanitary plant (SWS) must be sampled by ENV-RCRA for microtox analysis, total suspended solids (TSS), total dissolved solids (TDS), oil and grease, and pH. Submit a request for analysis at [https://esp-esh-as01-f5.lanl.gov/~esh19/databases/rfa\\_form.shtml](https://esp-esh-as01-f5.lanl.gov/~esh19/databases/rfa_form.shtml).

*Storage and Disposal Method:* These wastes will be containerized in drums at the point of generation and will initially be stored as nonhazardous/non-radiological pending review of analytical results to determine final waste characterization. For nonhazardous IDW, the non-hazardous waste label, date of generation (i.e., initial placement in the container), as well as the generator's name and container contents will be placed on the non-hazardous waste containers as a best management practice.

If the decontamination water is characterized as LLW it will be managed in a radioactive waste staging or storage area it can be shipped for disposal. Radioactive waste staging and storage area registration and set up must be coordinated with the assigned LANL WMC. If the decontamination water is characterized as Hazardous or MLLW (with D-codes for characteristic waste) it will be managed in a less than 90-Day Storage Area (with a start date equal to the earliest date of generation by container) until it can be shipped for disposal. Decontamination water may be disposed of on-site at the SWWS or the RLWTF if the facility WAC requirements are met. If the non-hazardous waste fails to meet the RLWTF WAC only due to high COD, if approved by the ENV-RCRA Group, it can be treated (e.g., addition of 30% hydrogen peroxide) to bring down the COD level to the RLWTF limit of 250 mg/l so that the waste can be disposed



of at that facility (see Work Instruction –Treatment of Wastewater with High Level of Chemical Oxygen Demand (COD)). If the waste cannot be disposed of at either of these facilities. If the waste cannot be disposed of at either of these facilities, due to operational limitations or inability to meet the WAC, it will be solidified and sent to an authorized off-site facility for disposal.

**Waste #5: Petroleum Contaminated Soils (PCS) (potential)** - PCS may be generated from releases of products such as hydraulic fluid, motor oil, unleaded gasoline, or diesel fuel (e.g. from the rupture of hydraulic or fuel hoses, or spills during maintenance or filling equipment) onto soil. Absorbent padding, paper towels, spill pillows or other absorbent material used to contain the released material may be added to the PCS waste for storage and disposal. It is estimated that less than one cubic yard of PCS will be generated.

*Anticipated Regulatory Status:* New Mexico Special Waste (NMSW), Industrial, LLW

*Characterization Approach:* The contaminated soil may either be sampled in-place (by gridding the spill location and collecting and combining incremental samples into one sample) or after containerization in accordance with SOP-06.10, Hand Auger and Thin-Wall Tube Sampler. If the spill is shallow (in-place sampling) or containers are small, Spade and Scoop Method for Collection of Soil Samples (SOP-06.09) may also be appropriate. If the spill is new, it must be immediately reported to ENV-RCRA and the contaminated material must be containerized the same day it is spilled unless permission is received from ENV-RCRA to leave it longer (generally only granted for large spills). Representative samples of containerized waste will be collected within 10 days of generation and submitted for analysis with a 21 day turnaround time. Samples will be analyzed, at a minimum, for VOCs, SVOCs, TPH (DRO/GRO), and total metals. TCLP analysis may also be performed for TAL metals if the analytical results for the total metals divided by 20 indicate contaminants that exceed regulatory thresholds. The samples will also be analyzed for radionuclides (by alpha and gamma spectroscopy); isotopic uranium, isotopic plutonium, americium-241, tritium, and strontium-90. Other constituents must be analyzed as needed to meet the receiving disposal facility's WAC.

*Storage and Disposal Method:* PCS will be containerized at the point of generation on the same day that the spill occurred. If AK for the site indicates that the soil will not be contaminated with radioactive or hazardous materials, the PCS will be managed as NMSW and the NMSW start date will be the date the container is completely full or the date in which no additional NSW will be added to the container. If AK for the site indicates that the soil could be contaminated with radioactive or hazardous materials the PCS will be stored in a clearly marked and constructed waste accumulation area appropriate to the anticipated waste type. Waste accumulation area postings, regulated storage duration, and inspection requirements will be based upon the waste classification. The following provides the management and disposal pathways for PCS that has a final waste determination:

1. PCS that is not contaminated with radioactive or hazardous materials will be managed as NMSW if one or more of the following conditions are met:
  - If the sum of benzene, toluene, ethylbenzene, and xylene isomer concentrations are greater than 50 mg/kg.
  - If benzene individually is equal to or greater than 10 mg/kg (Note: If benzene concentrations are equal to or greater than 0.5 mg/L, based upon TCLP, it is a hazardous waste, not a NMSW).
  - If TPH (DRO + GRO) concentration is greater than 100 mg/kg.

PCS that is characterized as NMSW will remain in the registered NMSW area until it is shipped for disposal to an authorized off-site facility.

2. PCS that is not contaminated with radioactive or hazardous materials will be managed as industrial waste if the contaminant levels are less than the NMSW and/or PCB regulatory levels. PCS that is characterized as industrial waste will be removed from the registered NMSW area and stored as industrial waste until it is shipped for disposal to an authorized off-site facility.
3. PCS that is characterized as LLW will be moved to a radioactive waste staging or storage area it can be shipped for disposal to an authorized off-site facility.
4. PCS characterized as Hazardous or MLLW will be managed in a less than 90-Day Storage Area (with a start date equal to the earliest date of generation by container) or in a Satellite Accumulation area if less than 55 gallons, until it can be shipped for disposal to an authorized off-site facility.



**CHARACTERIZATION TABLE 2**

Waste Description	Waste #1 MSW	Waste #2 Drill Cuttings	Waste #3 Contact IDW	Waste #4 Decon Fluids	Waste #5 PCS
Estimated Volume	3 CY	3 CY	1 CY	< 55 gallons	1CY gallons
Packaging	DOT approved containers	DOT approved containers	DOT approved containers	DOT approved containers	DOT approved containers
<b>Regulatory classification:</b>					
Radioactive Waste		X	X	X	X
Reusable Material or Green is Clean (GIC)		X	X		
Municipal Solid Waste (MSW)	X				
Waste destined for LANL's SWWS or RLWTF or HEWTF <sup>1</sup>				X	
Hazardous Waste				X	
Mixed (hazardous and radioactive) Waste				X	
Polychlorinated Biphenyls-Contaminated Waste (PCBs)		X		X	
New Mexico Special Waste					X
Industrial Waste		X	X	X	X
<b>Characterization Method</b>					
Acceptable knowledge (AK): Existing Data/Documentation	X	X	X	X	
AK: Site Characterization		X	X	X	
Direct Sampling of Waste		X		X	X
<b>Analytical Testing</b>					
Volatile Organic Compounds (VOCs) (EPA 8260-B)		X		X	X
Semivolatile Organic Compounds (SVOCs) (EPA 8270-C)		X		X	X
Organic Pesticides (EPA 8081-A)		X		X	X
Organic Herbicides (EPA 8151-A)		X		X	X
PCBs (EPA 8082)				X	
Total Metals (EPA 6010-B/7471-A or EPA 6020)		X		X	X
Total Cyanide (EPA 9012-A)		X		X	X
High Explosives Constituents (EPA 8330/8321-A)		X		X	X
Asbestos (EPA 600M4 or equivalent)					
Total petroleum hydrocarbon (TPH)-GRO (EPA 8015-M)		X <sup>3</sup>			X
TPH-DRO (EPA 8015-M)		X <sup>3</sup>			X
Toxicity characteristic leaching procedure (TCLP) Metals (EPA 1311/6010-B)		X			X <sup>3</sup>
Radium 226 and 228 (EPA 9320)		X		X	X
Gross Alpha (alpha counting) (EPA 900)		X		X	X
Gross Beta (beta counting) (EPA 900)		X		X	X
Tritium (liquid scintillation) (EPA 906.0)		X		X	X
Gamma spectroscopy (EPA 901.1)		X		X	X
Isotopic plutonium (Chem. Separation/alpha spec.) (HASL-300)		X		X	X
Isotopic uranium (Chem. Separation/alpha spec.) (HASL-300)		X		X	X
Total uranium (EPA 6020)		X		X	X
Strontium-90 (EPA 905)		X		X	X
Americium-241 (Chem. Separation/alpha spec.) (HASL-300)		X		X	X
Isotopic Thorium		X		X	
Perchlorates (EPA 6850)		X		X	X
Nitrates/Nitrites (EPA 300.09-soil or 343.2-water)		X		X	X
Oil / Grease (EPA 1665)				X	
Fluorine, Chlorine, Sulfate (EPA 300)				X	
Total Suspended & Dissolved Solids (TSS) and Total Dissolved Solids (TDS) (EPA 160.1 and 160.2)				X	
Chemical Oxygen Demand (COD) (EPA 410.4)				X	
pH (EPA 904c)				X	
Microtox or Biological Oxygen Demand (BOD) <sup>2</sup>				X <sup>2</sup>	

<sup>1</sup> In addition to other analytes needed to characterize the waste (e.g., VOC, SVOC, total metals), analyze for TSS, TDS, Oil and Grease, gross alpha gross beta, tritium, and pH for liquids destined for the LANL sanitary waste water system (SWWS). For wastes destined for the RLWTF additional constituents include TTO, TSS, COD, pH, total nitrates/nitrites, and gross alpha, gross beta (not including tritium), and gross gamma or the sum of individual alpha-, beta-, and gamma-emitting nuclides.

<sup>2</sup> If Microtox analysis is not available, requires BOD.

<sup>3</sup> As Needed

Note: Section 1.2 of the TCLP method 1311 states “If a total analysis of the waste demonstrates that individual analytes are not present in the waste, or that they are present but at such low concentrations that the appropriate regulatory levels could not possibly be exceeded, the TCLP need not be run.” The methodology for using total waste analyses determination for the 40 TC constituents is as follows;



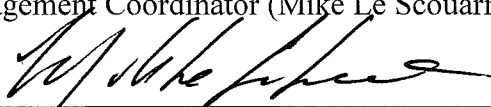


Liquids – Wastes containing less than 0.5% filterable solids do not require extraction and therefore by filtering the waste and measuring the total constituent levels of the filtrate and comparing those levels to regulatory levels is appropriate.

Solids – Constituent concentrations from the extraction fluid of wastes that are 100% physical solids are divided by 20 (reflecting the 20 to 1 ratio of TCLP extraction) and then compared to the regulatory levels. If the theoretical levels do not equal or exceed the regulatory levels, the TCLP need not be run. If the levels do equal or exceed the regulatory levels, the generator will run TCLP analyses.

## References

LANL (Los Alamos National Laboratory), April 2011. “Field Implementation Plan for Plan Cañon de Valle Aggregate Area Investigation, TA-14” Los Alamos, New Mexico.

LANL (Los Alamos National Laboratory), September 2006. “Investigation Work Plan Cañon de Valle Aggregate, Revision 1,” Los Alamos National Laboratory document LA-UR-06-4960, Los Alamos, New Mexico. (LANL 2006, ER2006-0224)

Signatures	Date
Project Manager (John McCann) 	7-26-2011
Preparer (Kim Oman) 	7/25/11
Waste Management Coordinator (Mike Le Scouarnec) 	7/26/11
ENV-RCRA Representative (Jocelyn Buckley) 	7/26/11
Waste Certification Program Representative (Michelle Coriz) Ray J. Ortiz for Michelle Coriz	7/26/11
Waste Acceptance (Andy Elicio) 	07/26/2011

# **Attachment**

## **Due Diligence Reports**

**AOCs/SWMUs**  
**Included in Table 1**



## AK REVIEW FORM or DUE DILIGENCE REPORT

### Remediation; Soil Sampling; and Borehole Sampling

**PRS ID No.:** 14-001(a,b,c,d,e)

**Technical Area:** 14

**Watershed:**

Cañon de Valle

**Scope of Work:**

Sampling to define nature and extent of potential contamination.

#### PRS Description

AOC 14-001(a) is a small (26-in.-long x 32-in.-wide x 32-in.-deep) steel pullbox (structure 14-025) located in the ground and covered with a metal lid. Pull boxes are used for detonator and diagnostic electrical hookups. AOC 14-001(a) is associated with an active firing site at TA-14 and formerly was used to hold capacitor discharge units. Visual inspection during 1995 RFI activities at TA-14 found the pullbox to be void of either soil or water. The inspection showed AOC 14-001(a) to be clean and well-sealed by its protective lid, with no evidence of contaminant releases within or outside the pullbox.

AOC 14-001(b) is a small (26-in.-long x 32-in.-wide x 32-in.-deep) steel pullbox, (structure 14-026), located in the ground and covered with a metal lid. Pull boxes are used for detonator and diagnostic electrical hookups. AOC 14-001(b) is associated with an active firing site at TA-14, and formerly was used to hold capacitor discharge units. Visual inspection during 1995 RFI activities at TA-14 found the pullbox to be void of either soil or water. The inspection showed AOC 14-001(b) to be clean and well-sealed by its protective lid, with no evidence of contaminant releases within or outside the pullbox.

AOC 14-001(c) is a small (26-in.-long x 32-in.-wide x 32-in.-deep) steel pull box (structure 14-027) located in the ground and covered with a metal lid. Pull boxes are associated with firing sites and are used for detonator and diagnostic electrical hookups. AOC 14-001(c) is associated with an active firing site at TA-14 and was used to hold capacitor discharge units. Visual inspection during 1995 RFI activities at TA-14 found the pullbox to be void of either soil or water, so no sampling was conducted. The inspection showed AOC 14-001(c) to be clean and well-sealed by its protective lid, with no evidence of contaminant releases within or outside the pullbox.

AOC 14-001(d) is a small (26 in. long x 32 in. wide x 32 in. deep) steel pull box located in the ground and covered with a metal lid. Pull boxes are associated with firing sites and are used for detonator and diagnostic electrical hookups. They are not used to manage solid or hazardous wastes, and their use does not involve discharge or release of contaminants to the environment. AOC 14-001(d) is associated with an active firing site at TA-14 and formerly was used to hold capacitor discharge units. The site was visually inspected during a 1995 RFI and found to be clean and well-sealed by the protective lid, with no evidence of contaminant releases within or outside the pull box (LANL 1996, 054086).

AOC 14-001(e) is a small (26-in.-long x 32-in.-wide x 32-in.-deep) steel pull box (structure 14-029) located in the ground and covered with a metal lid. Pull boxes are associated with firing sites and are used for detonator and diagnostic electrical hookups. AOC 14-001(e) is associated with an active firing site at TA-14 and was used to hold capacitor discharge units. Visual inspection during 1995 RFI activities at TA-14 found the pullbox to be void of either soil or water, so no sampling was conducted. The inspection showed AOC 14-001(e) to be clean and well-sealed by its protective lid, with no evidence of contaminant releases within or outside the pullbox.

In a September 15, 1998, letter enclosure to DOE, LANL proposed AOC 14-001(a,b,c,d,e) for NFA because no release has occurred or is likely to occur (LANL 1998, 059689). DOE concurred with the recommendation (DOE 1998, 059694). However, NMED does not recognize DOE as an administrative authority, and therefore, pursuant to the March 1, 2005, Consent Order, AOC 14-001(a) was evaluated by NMED as part of the Cañon de Valle Aggregate Area investigation work plan. No further investigation is proposed at AOC 14-001(a,b,c,d,e) because the site was never used for the management of solid or



hazardous wastes, and no discharge or release of contaminants occurred.

In February 2007, NMED approved the Cañon de Valle Aggregate Area investigation work plan but with modifications (NMED 2007, 095478). NMED requests information to clarify whether the PCB-containing dielectric oils were used at the site, and whether there were any investigations or documented releases of contaminants. That information and the results of any confirmation samples will be provided in the Cañon de Valle Aggregate Area investigation report.

#### Listed Status

There is no documented evidence that this Consolidated Unit is contaminated with F-, K-, P-, or U-listed waste. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.

Potential Contaminant Sources	Listed
Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)	No
Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]	No

#### Review Summary and Waste Management Instructions

Guidance provided by EPA's Management of Remediation Waste Under RCRA (EPA 530-F-98-026), Determination of When Contamination is Caused by Listed Hazardous Waste states:

"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."

There are no records of U- and/or P-listed spills that would require wastes from 14-001 (a,b,c,d,e) to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:

- Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)
- Aliphatic hydrocarbon production (F024, F025)
- Wood preserving (F032, F034, F035)
- Petroleum refining (F037, F038)

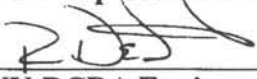

These F-listings are not applicable to waste from 14-001(a,b,c,d,e) within CdV Watershed.

Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at 14-001(a,b,c,d,e).

The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions.

#### Documents Reviewed

Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086

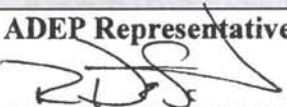
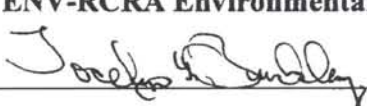
RFI Work Plan for Operable Unit 1085	May 1994	034755
SWMU Report, Volume 1I of IV (TA-10 through TA-25)	11/01/1990	007511
PRS Database	July 2010	NA
<b>Review/Approval</b>		
<b>ADEP Representative:</b> 	<b>Date:</b> 6/8/11	
<b>ENV-RCRA Environmental Professional</b> 	<b>Date:</b> 6/8/11	



<b>AK REVIEW FORM or DUE DILIGENCE REPORT</b> <b>Remediation; Soil Sampling; and Borehole Sampling</b>	
<b>PRS ID No.: 14-009</b>	<b>Technical Area: 14</b>
<b>Watershed:</b>	Cañon de Valle
<b>Scope of Work:</b>	Sampling to define nature and extent of potential contamination.
<b>PRS Description</b>	
<p>SWMU 14-009 is a 45-ft x 50-ft x 1-ft-deep surface disposal area on the southwest slope of the western firing area. It is a waste pile of ruptured sandbags. When explosives were tested, sandbags were placed around a firing site to contain the detonation. When the pressure of a blast ruptured the sandbags, the sand was used to control erosion around the firing site. The waste pile was included in the 1987 DOE environmental survey. The survey showed radioactivity levels above background values at the site.</p> <p>During the ER Project's 1995 RFI at SWMU 14-009, visual surface contamination of DU and a positive HE spot test resulted in the RFI report's recommendation to conduct a VCA at this SWMU.</p>	
<b>Listed Status</b>	
<p>There is no documented evidence that this Consolidated Unit is contaminated with F-, K-, P-, or U-listed waste. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.</p>	
<b>Potential Contaminant Sources</b>	<b>Listed</b>
Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)	No
Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]	No
<b>Review Summary and Waste Management Instructions</b>	
<p>Guidance provided by EPA's <u>Management of Remediation Waste Under RCRA (EPA 530-F-98-026)</u>, <u>Determination of When Contamination is Caused by Listed Hazardous Waste</u> states:</p> <p>"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."</p> <p>There are no records of U- and/or P-listed spills that would require wastes from 14-009 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:</p> <ul style="list-style-type: none"> <li>• Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)</li> <li>• Aliphatic hydrocarbon production (F024, F025)</li> <li>• Wood preserving (F032, F034, F035)</li> <li>• Petroleum refining (F037, F038)</li> </ul> <p>These F-listings are not applicable to waste from 14-009 within CdV Watershed.</p> <p>Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient</p>	

to have impacted activities at 14-009.

The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions.

Documents Reviewed		
Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TAs 6, 8, 22, and 40 (Located in Former OUs 1111 and 1157)	9/29/1997	056664
VCA Plan for TA-14: PRSs 14-002(a), Firing Site; 14-010, Sump	5/1/1997	055678
Voluntary Corrective Action (VCA) Completion Report for PRS 14-002(a), Firing Site and 14-010, Sump, Field Unit 2	9/1/1996	056611
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
SWMU Report, Volume II of IV (TA-10 through TA-25)	11/01/1990	007512
PRS Database	July 2010	NA
Review/Approval		
ADEP Representative: 	Date: 6/8/11	
ENV-RCRA Environmental Professional 	Date: 6/8/11	



## AK REVIEW FORM or DUE DILIGENCE REPORT

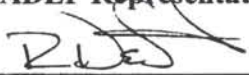

### Remediation; Soil Sampling; and Borehole Sampling

<b>PRS ID No.: 14-010</b>		<b>Technical Area: 14</b>
<b>Watershed:</b>	Cañon de Valle	
<b>Scope of Work:</b>	Sampling to define nature and extent of potential contamination.	
<b>PRS Description</b>		
<p>SWMU 14-010 is a decommissioned explosive waste sump and drainline and its associated drainage area south of and adjacent to structure 14-2 [a decommissioned firing chamber, SWMU 14-002(a)]. The sump's contents were removed and disposed of in 1973 and the area was paved over or replaced by the bullet test facility.</p> <p>During the ER Project's RFI at SWMU 14-010, four surface-soil samples and one subsurface-soil sample were collected. The samples were submitted for laboratory analysis of inorganic chemicals, uranium, HE, and radionuclides. RFI results showed that uranium was present in concentrations above screening level. The RFI report recommended development of a VCA plan for SWMUs 14-002(a) and 14-010. RFI conclusions and recommendations were included in the VCA plan that was submitted to DOE in 1997.</p>		
<b>Listed Status</b>		
There is no documented evidence that this SWMU is contaminated with F-, K-, P-, or U-listed constituents from a listed source. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.		
<b>Potential Contaminant Sources</b>		<b>Listed</b>
Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)		No
Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]		No
<b>Review Summary and Waste Management Instructions</b>		
<p>Guidance provided by EPA's <u>Management of Remediation Waste Under RCRA (EPA 530-F-98-026)</u>. <u>Determination of When Contamination is Caused by Listed Hazardous Waste</u> states:</p> <p>"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."</p> <p>There are no records of U- and/or P-listed spills that would require wastes from 14-010 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:</p> <ul style="list-style-type: none"><li>• Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)</li><li>• Aliphatic hydrocarbon production (F024, F025)</li><li>• Wood preserving (F032, F034, F035)</li><li>• Petroleum refining (F037, F038)</li></ul> <p>These F-listings are not applicable to waste from 14-010 within CdV Watershed.</p> <p>Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory</p>		



generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at 14-010.

The IDW from the site may initially be managed as non-hazardous waste. Refer to the WCSF for detailed waste management instructions.

Documents Reviewed		
Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TAs 6, 8, 22, and 40 (Located in Former OUs 1111 and 1157)	9/29/1997	056664
VCA Plan for TA-14: PRSs 14-002(a), Firing Site; 14-010, Sump	5/1/1997	055678
Voluntary Corrective Action (VCA) Completion Report for PRS 14-002(a), Firing Site and 14-010, Sump, Field Unit 2	9/1/1996	056611
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
SWMU Report, Volume II of IV (TA-10 through TA-25)	11/01/1990	007512
PRS Database	July 2010	NA
Review/Approval		
ADEP Representative: 	Date: 6/8/11	
ENV-RCRA Environmental Professional 	Date: 6/08/11	


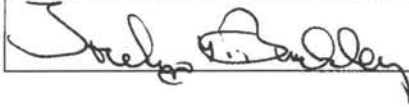
## AK REVIEW FORM or DUE DILIGENCE REPORT

### Remediation; Soil Sampling; and Borehole Sampling

<b>PRS ID No.: C-14-008</b>		<b>Technical Area: 14</b>
<b>Watershed:</b>	Cañon de Valle	
<b>Scope of Work:</b>	Sampling to define nature and extent of potential contamination.	
<b>PRS Description</b>		
<p>SWMU 14-010 is a decommissioned explosive waste sump and drainline and its associated drainage area south of and adjacent to structure 14-2 [a decommissioned firing chamber, SWMU 14-002(a)]. The sump's contents were removed and disposed of in 1973 and the area was paved over or replaced by the bullet test facility.</p> <p>During the ER Project's RFI at SWMU 14-010, four surface-soil samples and one subsurface-soil sample were collected. The samples were submitted for laboratory analysis of inorganic chemicals, uranium, HE, and radionuclides. RFI results showed that uranium was present in concentrations above screening level. The RFI report recommended development of a VCA plan for SWMUs 14-002(a) and 14-010. RFI conclusions and recommendations were included in the VCA plan that was submitted to DOE in 1997.</p>		
<b>Listed Status</b>		
There is no documented evidence that this SWMU is contaminated with F-, K-, P-, or U-listed constituents from a listed source. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.		
<b>Potential Contaminant Sources</b>		<b>Listed</b>
Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)		No
Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]		No
<b>Review Summary and Waste Management Instructions</b>		
<p>Guidance provided by EPA's <u>Management of Remediation Waste Under RCRA (EPA 530-F-98-026)</u>, <u>Determination of When Contamination is Caused by Listed Hazardous Waste</u> states:</p> <p>"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."</p> <p>There are no records of U- and/or P-listed spills that would require wastes from C-14-008 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:</p> <ul style="list-style-type: none"><li>• Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)</li><li>• Aliphatic hydrocarbon production (F024, F025)</li><li>• Wood preserving (F032, F034, F035)</li><li>• Petroleum refining (F037, F038)</li></ul> <p>These F-listings are not applicable to waste from C-14-008 within CdV Watershed.</p> <p>Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory</p>		

generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at C-14-008.

The IDW from the site may initially be managed as non-hazardous waste. Refer to the WCSF for detailed waste management instructions.

Documents Reviewed		
Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TAs 6, 8, 22, and 40 (Located in Former OUs 1111 and 1157)	9/29/1997	056664
VCA Plan for TA-14: PRSs 14-002(a), Firing Site; 14-010, Sump	5/1/1997	055678
Voluntary Corrective Action (VCA) Completion Report for PRS 14-002(a), Firing Site and 14-010, Sump, Field Unit 2	9/1/1996	056611
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
SWMU Report, Volume II of IV (TA-10 through TA-25)	11/01/1990	007512
PRS Database	July 2010	NA
Review/Approval		
ADEP Representative: 	Date: 6/8/11	
ENV-RCRA Environmental Professional 	Date: 6/8/11	



## AK REVIEW FORM or DUE DILIGENCE REPORT

### Remediation; Soil Sampling; and Borehole Sampling

PRS ID No.: 14-002(c)-99

Technical Area: 14

Watershed:

Cañon de Valle

Scope of Work:

Sampling to define nature and extent of potential contamination.

#### PRS Description

Consolidated unit 14-002(c)-99 consists of SWMUs 14-002(c,d, and e). The SWMUs are located in the eastern part of TA-14 on a flat circular area about 100 ft in diameter.

SWMU 14-002(c) is a control building (Building 14-5), built in 1945 for small-scale explosive tests. It is 11 ft long x 18 ft wide x 10 ft high and originally had a concrete bunker faced with 0.5-in. steel plate. Soil berms cover the east and west sides of the building. The tests were conducted on two firing pads located 20 ft to 30 ft from the building's south end. The building served as a storage site from 1961 to 1965, after which it was used until the 1970s for temporary storage of pressurized tanks of cyanogen gas.

SWMUs 14-002(d and e) are the sites of two former firing pads (structures 14-14 and -15) that were located on a gravel area adjacent to the south end of Building 14-5. The pads were used from 1944 to the mid-1950s for small-scale explosives tests. The pads were checked for radiation in 1957 and none was found. The firing pads have been removed from the site.

The ER Project conducted an RFI at SWMU 14-002(c) in 1995. The site was sampled only by radiological field screening and HE spot tests because no environmental media were present inside the building. No indication of contamination was detected. The RFI report recommended NFA at this site.

The ER Project conducted an RFI at SWMUs 14-002(d and e) in 1995 to determine the presence or absence of contamination. Four samples were field-screened for radiation and HE. The results were negative for HE and radiation levels were within BVs. The samples were submitted for laboratory analysis of inorganic chemicals, radionuclides, total uranium, and HE. Lead, thallium, and total uranium were detected at concentrations above BVs but below screening levels. The RFI report recommended NFA at these sites.

#### Listed Status

There is no documented evidence that this Consolidated Unit is contaminated with F-, K-, P-, or U-listed waste. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.

#### Potential Contaminant Sources

#### Listed

Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)

No

Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]

No

#### Review Summary and Waste Management Instructions

Guidance provided by EPA's Management of Remediation Waste Under RCRA (EPA 530-F-98-026). Determination of When Contamination is Caused by Listed Hazardous Waste states:

"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."

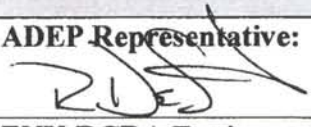
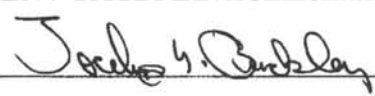
There are no records of U- and/or P-listed spills that would require wastes from 14-002(c)-99 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:

- Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)
- Aliphatic hydrocarbon production (F024, F025)
- Wood preserving (F032, F034, F035)
- Petroleum refining (F037, F038)

These F-listings are not applicable to waste from 14-002(c)-99 within CdV Watershed.

Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at 14-002(c)-99.

The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions..

Documents Reviewed		
Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TAs 6, 8, 22, and 40 (Located in Former OUs 1111 and 1157)	9/29/1997	056664
VCA Plan for TA-14: PRSs 14-002(a), Firing Site; 14-010, Sump	5/1/1997	055678
VCA completion Report for TA-14: PRS 14-001(f), Bullet Test Facility	9/30/1996	055049
Voluntary Corrective Action (VCA) Completion Report for PRS 14-002(a), Firing Site and 14-010, Sump, Field Unit 2	9/1/1996	056611
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
SWMU Report, Volume 1I of IV (TA-10 through TA-25)	11/01/1990	007512
PRS Database	July 2010	NA
Review/Approval		
ADEP Representative: 	Date: 6/8/11	
ENV-RCRA Environmental Professional 	Date: 6/8/11	



<b>AK REVIEW FORM or DUE DILIGENCE REPORT</b> <b>Remediation; Soil Sampling; and Borehole Sampling</b>	
<b>PRS ID No.: 14-002(c)-99</b>	<b>Technical Area: 14</b>
<b>Watershed:</b>	Cañon de Valle
<b>Scope of Work:</b>	Sampling to define nature and extent of potential contamination.
<b>PRS Description</b>	
<p>Consolidated unit 14-002(c)-99 consists of SWMUs 14-002(c,d, and e). The SWMUs are located in the eastern part of TA-14 on a flat circular area about 100 ft in diameter.</p> <p>SWMU 14-002(c) is a control building (Building 14-5), built in 1945 for small-scale explosive tests. It is 11 ft long x 18 ft wide x 10 ft high and originally had a concrete bunker faced with 0.5-in. steel plate. Soil berms cover the east and west sides of the building. The tests were conducted on two firing pads located 20 ft to 30 ft from the building's south end. The building served as a storage site from 1961 to 1965, after which it was used until the 1970s for temporary storage of pressurized tanks of cyanogen gas.</p> <p>SWMUs 14-002(d and e) are the sites of two former firing pads (structures 14-14 and -15) that were located on a gravel area adjacent to the south end of Building 14-5. The pads were used from 1944 to the mid-1950s for small-scale explosives tests. The pads were checked for radiation in 1957 and none was found. The firing pads have been removed from the site.</p> <p>The ER Project conducted an RFI at SWMU 14-002(c) in 1995. The site was sampled only by radiological field screening and HE spot tests because no environmental media were present inside the building. No indication of contamination was detected. The RFI report recommended NFA at this site.</p> <p>The ER Project conducted an RFI at SWMUs 14-002(d and e) in 1995 to determine the presence or absence of contamination. Four samples were field-screened for radiation and HE. The results were negative for HE and radiation levels were within BVs. The samples were submitted for laboratory analysis of inorganic chemicals, radionuclides, total uranium, and HE. Lead, thallium, and total uranium were detected at concentrations above BVs but below screening levels. The RFI report recommended NFA at these sites.</p>	
<b>Listed Status</b>	
<p>There is no documented evidence that this Consolidated Unit is contaminated with F-, K-, P-, or U-listed waste. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.</p>	
<b>Potential Contaminant Sources</b>	<b>Listed</b>
Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)	No
Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]	No
<b>Review Summary and Waste Management Instructions</b>	
<p>Guidance provided by EPA's <u>Management of Remediation Waste Under RCRA (EPA 530-F-98-026)</u>, <u>Determination of When Contamination is Caused by Listed Hazardous Waste</u> states:</p> <p>"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."</p>	

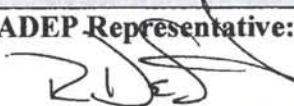
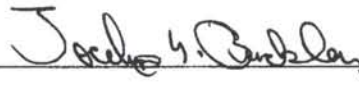
There are no records of U- and/or P-listed spills that would require wastes from 14-002(c)-99 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:

- Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)
- Aliphatic hydrocarbon production (F024, F025)
- Wood preserving (F032, F034, F035)
- Petroleum refining (F037, F038)

These F-listings are not applicable to waste from 14-002(c)-99 within CdV Watershed.

Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at 14-002(c)-99.

The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions..

Documents Reviewed		
Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TAs 6, 8, 22, and 40 (Located in Former OUs 1111 and 1157)	9/29/1997	056664
VCA Plan for TA-14: PRSs 14-002(a), Firing Site; 14-010, Sump	5/1/1997	055678
VCA completion Report for TA-14: PRS 14-001(f), Bullet Test Facility	9/30/1996	055049
Voluntary Corrective Action (VCA) Completion Report for PRS 14-002(a), Firing Site and 14-010, Sump, Field Unit 2	9/1/1996	056611
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
SWMU Report, Volume 1I of IV (TA-10 through TA-25)	11/01/1990	007512
PRS Database	July 2010	NA
Review/Approval		
<b>ADEP Representative:</b> 	<b>Date:</b> 6/8/11	
<b>ENV-RCRA Environmental Professional</b> 	<b>Date:</b> 6/8/11	



## AK REVIEW FORM or DUE DILIGENCE REPORT

### Remediation; Soil Sampling; and Borehole Sampling

PRS ID No.: 14-006

Technical Area: 14

**Watershed:**

Cañon de Valle

**Scope of Work:**

Sampling to define nature and extent of potential contamination.

#### PRS Description

SWMU 14-006 consists of an HE sump (structure 14-31), associated drainline, and inactive outfall for a control building (Building 14-23). The sump is made of steel and concrete, and is 4.5 ft wide x 8.3 ft long x 4.8 ft deep. The sump outlet is plugged. Two floor drains and an asphalt roof drain bypass the sump in a metal-covered concrete culvert and discharge to the outfall. Sludge in the sump is collected for burning. Building 14-23 was built in late 1944 or 1945.

The ER Project conducted an RFI at this site in 1995 to determine the presence or absence of contamination. Six samples were collected from four locations downslope from the sump and the outfall. The samples were field-screened for radiation and HE. The radiation levels were within background screening values, and no HE was detected. The samples were submitted for laboratory analysis of inorganic chemicals, organic chemicals, radionuclides, and HE. Seven inorganic chemicals were detected at levels above background but below 1995 screening levels. Eighteen organic chemicals were detected and seven (all PAHs) were detected at concentrations greater than screening levels. The results of the sample analysis were used to perform a risk-based, human health screening assessment. The screening assessment determined that the organic chemicals (all were PAHs) were not above screening levels because their presence was attributed to runoff from an asphalt-paved parking lot adjacent to the sump. Based on the results of that assessment, the RFI report recommended NFA for the site.

#### Listed Status

There is no documented evidence that this Consolidated Unit is contaminated with F-, K-, P-, or U-listed waste. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.

#### Potential Contaminant Sources

#### Listed

Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)

No

Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]

No

#### Review Summary and Waste Management Instructions

Guidance provided by EPA's Management of Remediation Waste Under RCRA (EPA 530-F-98-026), Determination of When Contamination is Caused by Listed Hazardous Waste states:

"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."

There are no records of U- and/or P-listed spills that would require wastes from 14-006 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:

- Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)
- Aliphatic hydrocarbon production (F024, F025)

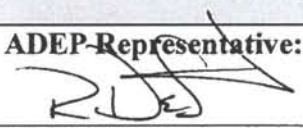
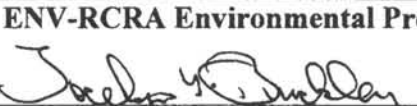


- Wood preserving (F032, F034, F035)
- Petroleum refining (F037, F038)

These F-listings are not applicable to waste from 14-006 within CdV Watershed.

Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at 14-006.

The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions.

Documents Reviewed		
Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TAs 6, 8, 22, and 40 (Located in Former OUs 1111 and 1157)	9/29/1997	056664
VCA Plan for TA-14: PRSs 14-002(a), Firing Site; 14-010, Sump	5/1/1997	055678
Voluntary Corrective Action (VCA) Completion Report for PRS 14-002(a), Firing Site and 14-010, Sump, Field Unit 2	9/1/1996	056611
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
SWMU Report, Volume 1I of IV (TA-10 through TA-25)	11/01/1990	007512
PRS Database	July 2010	NA
Review/Approval		
ADEP Representative: 	Date: 6/8/11	
ENV-RCRA Environmental Professional 	Date: 6/8/11	

# AK REVIEW FORM or DUE DILIGENCE REPORT

## Remediation; Soil Sampling; and Borehole Sampling

PRS ID No.: 14-003

Technical Area: 14

Watershed:

Cañon de Valle

Scope of Work:

Sampling to define nature and extent of potential contamination.

### PRS Description

SWMU 14-003 is a 5-ft x 20-ft former burning area located about 300 ft northeast of a control building (Building 14-5) at the end of an asphalt-paved road that is no longer in use. On three sides, the area was enclosed by a 3-ft-high soil berm. The area was used to burn HE-contaminated debris and for flash-burning noncombustible HE-contaminated debris remaining from experimental test shots. Debris burned in the area may have contained barium, lead, and uranium. Operations began in 1951 and ceased in the 1960s. In 1997, contaminated soil associated with the burning area was removed.

The ER Project conducted an RFI at this site in 1995 to determine the presence or absence of contamination. Two samples were collected from two locations within the bermed area. Samples were field-screened for radioactivity and HE. The screening showed no elevated levels. The samples were submitted for laboratory analysis of inorganic chemicals, organic chemicals, total and isotopic uranium, gamma spectroscopy, and HE. Sample results showed inorganic chemicals were present at levels exceeding screening levels. Uranium was present at levels exceeding screening levels. The RFI report recommended a VCA for the site. RFI sampling results are documented in the VCA plan.

In 2001, LANL requested that DOE release this property in accordance with DOE Order 5400.5 because the site was evaluated in accordance with the Order and LANL believes that NFA is appropriate for the site. SWMU 14-003 was recommended for NFA in the June 2001 NFA proposal to NMED. No additional investigation at this site is planned.

### Listed Status

There is no documented evidence that this Consolidated Unit is contaminated with F-, K-, P-, or U-listed waste. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.

### Potential Contaminant Sources

### Listed

Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)

No

Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]

No

### Review Summary and Waste Management Instructions

Guidance provided by EPA's Management of Remediation Waste Under RCRA (EPA 530-F-98-026), Determination of When Contamination is Caused by Listed Hazardous Waste states:

"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."

There are no records of U- and/or P-listed spills that would require wastes from 14-003 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:

- Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or

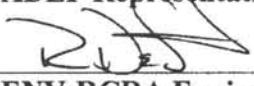



- hexachlorobenzene (F020, F021, F022, F023, F027, F028)
- Aliphatic hydrocarbon production (F024, F025)
- Wood preserving (F032, F034, F035)
- Petroleum refining (F037, F038)

These F-listings are not applicable to waste from 14-003 within CdV Watershed.

Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at 14-003.

The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions.

Documents Reviewed		
Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
VCA Report for PRS 14-003	September 1997	056564
VCA Plan for TA-14: PRS-14-003, Burn Area	11/18/1996	055250
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
PRS Database	July 2010	NA
SWMU Report, Volume II of IV (TA-10 through TA-25)	11/1/1990	007512
Review/Approval		
ADEP Representative: 	Date: 6/8/11	
ENV-RCRA Environmental Professional 	Date: 6/8/11	



# AK REVIEW FORM or DUE DILIGENCE REPORT

## Remediation; Soil Sampling; and Borehole Sampling

PRS ID No.: 14-007

Technical Area: 14

Watershed:

Cañon de Valle

Scope of Work:

Sampling to define nature and extent of potential contamination. ~~Excavation~~ 18/11

### PRS Description

SWMU 14-007 is an inactive septic tank (structure 14-19) and its associated drain field. The tank was built in 1944 to serve the restrooms in a storage building (Building 14-6). Building 14-6 was built as a shop but later was used as a darkroom. It has been used for storage since 1965. Made of reinforced concrete, the septic tank is 4 ft wide x 7 ft long x 6 ft deep and has a capacity of 640 gal. The septic tank was connected to an overflow drainline that ran northeast for 130 ft before daylighting into an outfall about 1 ft wide. A drain field installed in 1988 replaced the drainline from the septic tank. The septic tank was disconnected in 1992 when Building 14-6 was connected to the SWSC.

The ER Project conducted an RFI at SWMU 14-007 in 1995 to determine the presence or absence of contamination. Six soil samples were collected from the drain field and were field-screened for radiation and HE. No HE was detected, and radiation levels were below background. The samples were submitted for laboratory analysis of inorganic chemicals, organic chemicals, total cyanide, HE, and radionuclides. Five inorganic chemicals and uranium-235 and uranium-238 were detected at concentrations above BVs. No organic chemicals were detected. The human health risk screening assessment determined that none of these chemicals should be considered as potential contaminants. The RFI report recommended NFA for this site.

### Listed Status

There is no documented evidence that this Consolidated Unit is contaminated with F-, K-, P-, or U-listed waste. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.

### Potential Contaminant Sources

### Listed

Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)

No

Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]

No

### Review Summary and Waste Management Instructions

Guidance provided by EPA's Management of Remediation Waste Under RCRA (EPA 530-F-98-026). Determination of When Contamination is Caused by Listed Hazardous Waste states:

"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."

There are no records of U- and/or P-listed spills that would require wastes from 14-007 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:

- Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)
- Aliphatic hydrocarbon production (F024, F025)
- Wood preserving (F032, F034, F035)

- Petroleum refining (F037, F038)

These F-listings are not applicable to waste from 14-007 within CdV Watershed.

Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at 14-007.

The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions.

#### Documents Reviewed

Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TAs 6, 8, 22, and 40 (Located in Former OUs 1111 and 1157)	9/29/1997	056664
VCA Plan for TA-14: PRSs 14-002(a), Firing Site; 14-010, Sump	5/1/1997	055678
Voluntary Corrective Action (VCA) Completion Report for PRS 14-002(a), Firing Site and 14-010, Sump, Field Unit 2	9/1/1996	056611
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
SWMU Report, Volume II of IV (TA-10 through TA-25)	11/01/1990	007512
PRS Database	July 2010	NA

#### Review/Approval

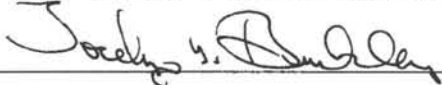
ADEP Representative:



Date:

6/8/11

ENV-RCRA Environmental Professional



Date:

6/8/11



## AK REVIEW FORM or DUE DILIGENCE REPORT

### Remediation; Soil Sampling; and Borehole Sampling

PRS ID No.: C-14-001

Technical Area: 14

**Watershed:**

Cañon de Valle

**Scope of Work:**

Sampling to define nature and extent of potential contamination.

#### PRS Description

AOC C-14-001 is the site of a former magazine (structure 14-1) that was built in 1944 to serve the TA-14 firing sites. Structure 14-1 was located in a wooded area 300 ft west of the western complex at TA-14. Made of wood, it was 9 ft wide x 11 ft long x 8 ft high, with a soil berm on three sides and the top. In 1959 the magazine was reported contaminated with HE. It was burned and destroyed in 1963.

The ER Project conducted an RFI at this site in 1995 to determine the presence or absence of contamination. Three samples were collected and field-screened for HE and radioactivity. No HE was detected, and radiation levels were below background screening values. The samples were submitted for laboratory analysis of inorganic chemicals and HE. Three inorganic chemicals were detected at concentrations above BVs but below screening levels. One HE chemical was detected. An MCE was conducted for the four detected chemicals, which were eliminated from further consideration based on MCE results. The RFI report recommended NFA for the site.

#### Listed Status

There is no documented evidence that this AOC is contaminated with F-, K-, P-, or U-listed constituents from a listed source. HMX was detected in the surface soil, but there is no reason to believe that the IDW will exhibit the reactivity characteristic. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.

#### Potential Contaminant Sources

#### Listed

Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)

No

Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]

No

#### Review Summary and Waste Management Instructions

Guidance provided by EPA's Management of Remediation Waste Under RCRA (EPA 530-F-98-026), Determination of When Contamination is Caused by Listed Hazardous Waste states:

"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."

There are no records of U- and/or P-listed spills that would require wastes from C-14-001 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:

- Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)
- Aliphatic hydrocarbon production (F024, F025)
- Wood preserving (F032, F034, F035)
- Petroleum refining (F037, F038)

These F-listings are not applicable to waste from C-14-001 within CdV Watershed.



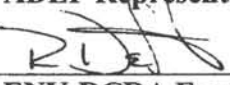

Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at C-14-001

The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions.

#### Documents Reviewed

Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
PRS Database	July 2010	NA

#### Review/Approval

<b>ADEP Representative:</b> 	<b>Date:</b> 6/8/11
<b>ENV-RCRA Environmental Professional</b> 	<b>Date:</b> 6/8/11

# AK REVIEW FORM or DUE DILIGENCE REPORT

## Remediation; Soil Sampling; and Borehole Sampling

PRS ID No.: C-14-003

Technical Area: 14

**Watershed:**

Cañon de Valle

**Scope of Work:**

Sampling to define nature and extent of potential contamination.

### PRS Description

AOC C-14-003 is the site of a former HE-preparation building (structure 14-4). Made of wood, it was 12 ft wide x 25 ft long x 8 ft high. It was built in 1944 and removed in 1952. AOC C-14-003 is located north of a current magazine (structure 14-22) in the central part of TA-14, within the loop made by the paved road that circles the magazine.

The ER Project conducted an RFI at this site in 1995 to determine the presence or absence of contamination. Two samples were collected and field-screened for HE and radiation. No HE was detected, and radiation levels were within BVs. The samples were submitted for laboratory analysis of inorganic chemicals, radionuclides, and HE. One radionuclide was detected at concentrations above FV, and one HE chemical was detected above BV. Both detected analytes were below screening levels. The RFI report recommended NFA for this site.

### Listed Status

There is no documented evidence that this SWMU is contaminated with F-, K-, P-, or U-listed constituents from a listed source. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.

### Potential Contaminant Sources

### Listed

Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)

No

Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]

No

### Review Summary and Waste Management Instructions

Guidance provided by EPA's Management of Remediation Waste Under RCRA (EPA 530-F-98-026), Determination of When Contamination is Caused by Listed Hazardous Waste states:

"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."



There are no records of U- and/or P-listed spills that would require wastes from C-14-003 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:

- Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)
- Aliphatic hydrocarbon production (F024, F025)
- Wood preserving (F032, F034, F035)
- Petroleum refining (F037, F038)

These F-listings are not applicable to waste from C-14-003 within CdV Watershed.

Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at C-14-003.

The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions.



Documents Reviewed		
Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TAs 6, 8, 22, and 40 (Located in Former OUs 1111 and 1157)	9/29/1997	056664
VCA Plan for TA-14: PRSs 14-002(a), Firing Site; 14-010, Sump	5/1/1997	055678
Voluntary Corrective Action (VCA) Completion Report for PRS 14-002(a), Firing Site and 14-010, Sump, Field Unit 2	9/1/1996	056611
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
SWMU Report, Volume II of IV (TA-10 through TA-25)	11/01/1990	007512
PRS Database	July 2010	NA
Review/Approval		
<b>ADEP Representative:</b> 	<b>Date:</b> 6/8/11	
<b>ENV-RCRA Environmental Professional</b> 	<b>Date:</b> 6/8/11	



<b>AK REVIEW FORM or DUE DILIGENCE REPORT</b> <b>Remediation; Soil Sampling; and Borehole Sampling</b>	
<b>PRS ID No.: C-14-004</b>	<b>Technical Area: 14</b>
<b>Watershed:</b>	Cañon de Valle
<b>Scope of Work:</b>	Sampling to define nature and extent of potential contamination.
<b>PRS Description</b>	
<p>AOC C-14-004 is the site of a former electronics shop (Building 14-7) that was built in 1945 and removed in 1952. It was located 75 ft west of a control building (Building 14-23), in the central part of TA-14. Made of wood, it was 15 ft wide x 24 ft long x 9 ft high.</p> <p>The ER Project conducted an RFI at this site in 1995 to determine the presence or absence of contamination. Two samples were collected and field-screened for HE and radiation. No HE was detected, and radiation levels were within background. The samples were submitted for laboratory analysis of organic chemicals. One organic chemical, 4-chloro-3-methyl phenol, was detected, and it has no screening level. It was not retained as a potential contaminant due to its low concentration and the lack of significant related compounds. The RFI report recommended NFA for this site.</p>	
<b>Listed Status</b>	
<p>There is no documented evidence that this SWMU is contaminated with F-, K-, P-, or U-listed constituents from a listed source. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.</p>	
<b>Potential Contaminant Sources</b>	<b>Listed</b>
Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)	No
Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]	No
<b>Review Summary and Waste Management Instructions</b>	
<p>Guidance provided by EPA's <u>Management of Remediation Waste Under RCRA (EPA 530-F-98-026)</u>, <u>Determination of When Contamination is Caused by Listed Hazardous Waste</u> states:</p> <p>"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."</p> <p>There are no records of U- and/or P-listed spills that would require wastes from C-14-004 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:</p> <ul style="list-style-type: none"> <li>• Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)</li> <li>• Aliphatic hydrocarbon production (F024, F025)</li> <li>• Wood preserving (F032, F034, F035)</li> <li>• Petroleum refining (F037, F038)</li> </ul> <p>These F-listings are not applicable to waste from C-14-004 within CdV Watershed.</p> <p>Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory</p>	

generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at C-14-004.

The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions.

Documents Reviewed		
Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
PRS Database	July 2010	NA
Review/Approval		
ADEP Representative: 	Date: 6/8/11	
ENV-RCRA Environmental Professional 	Date: 6/8/11	



## AK REVIEW FORM or DUE DILIGENCE REPORT

### Remediation; Soil Sampling; and Borehole Sampling

PRS ID No.: C-14-005

Technical Area: 14

**Watershed:**

Cañon de Valle

**Scope of Work:**

Sampling to define nature and extent of potential contamination.

#### PRS Description

AOC C-14-005 is the site of a former storage building (Building 14-8) in the central part of TA-14. It was located on the east side of the TA-14 access road, about 80 ft north of Building 14-6. Made of wood, it was 16 ft long x 6 ft wide x 9 ft high. Building 14-8 was built in 1944 and removed in 1952.

The ER Project conducted an RFI at this site in 1995 to determine the presence or absence of contamination. Two samples were collected and field-screened for HE and radiation. No HE was detected, and radiation levels were within background. The samples were submitted for laboratory analysis of inorganic chemicals, total uranium, and HE. Three inorganic chemicals were detected at concentrations above BVs but below screening levels, and were subjected to an MCE. Based on results of the MCE, no chemicals were retained as potential contaminants. No radionuclides or HE were detected. The RFI report recommended NFA for this site.

#### Listed Status

There is no documented evidence that this SWMU is contaminated with F-, K-, P-, or U-listed constituents from a listed source. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.

#### Potential Contaminant Sources

#### Listed

Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)

No

Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]

No

#### Review Summary and Waste Management Instructions

Guidance provided by EPA's Management of Remediation Waste Under RCRA (EPA 530-F-98-026). Determination of When Contamination is Caused by Listed Hazardous Waste states:

"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."

There are no records of U- and/or P-listed spills that would require wastes from C-14-005 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:



- Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)
- Aliphatic hydrocarbon production (F024, F025)
- Wood preserving (F032, F034, F035)
- Petroleum refining (F037, F038)

These F-listings are not applicable to waste from C-14-005 within CdV Watershed.



Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at C-14-005.

The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions.

Documents Reviewed		
Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
PRS Database	July 2010	NA
Review/Approval		
<b>ADEP Representative:</b> 	<b>Date:</b> 6/8/11	
<b>ENV-RCRA Environmental Professional</b> 	<b>Date:</b> 6/8/11	

## AK REVIEW FORM or DUE DILIGENCE REPORT

### Remediation; Soil Sampling; and Borehole Sampling

PRS ID No.: C-14-007

Technical Area: 14

**Watershed:**

Cañon de Valle

**Scope of Work:**

Sampling to define nature and extent of potential contamination.

#### PRS Description

AOC C-14-007 is the site of a former storage building (structure 14-10) in the central part of TA-14, 160 ft west of a control building (Building 14-23). Made of wood, structure 14-10 was 10 ft long x 10 ft wide x 8 ft high. It was built in 1945 and removed in 1952. A small pile of bricks and mortar remains at the site of former structure 14-10.

The ER Project conducted an RFI at this site in 1995 to determine the presence or absence of contamination. Two samples were collected and field-screened for HE and radiation. No HE was detected, and radiation levels were within background. The samples were submitted for laboratory analysis of inorganic chemicals, total uranium, HE, and organic chemicals. Three inorganic chemicals were detected at concentrations above BVs but below 1995 screening levels. Total uranium was detected at concentrations above 1995 BVs. One HE chemical, 4-amino-2,6-dinitrotoluene, was detected. No other organic chemicals were detected. The HE chemical had no screening level. Because the detected level was near the detection limit, the HE chemical was not retained as a potential contaminant. The RFI report recommended NFA for this site.

#### Listed Status

There is no documented evidence that this SWMU is contaminated with F-, K-, P-, or U-listed constituents from a listed source. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.

#### Potential Contaminant Sources

#### Listed

Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)

No

Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]

No

#### Review Summary and Waste Management Instructions

Guidance provided by EPA's Management of Remediation Waste Under RCRA (EPA 530-F-98-026), Determination of When Contamination is Caused by Listed Hazardous Waste states:

"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."

There are no records of U- and/or P-listed spills that would require wastes from C-14-007 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:

- Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)
- Aliphatic hydrocarbon production (F024, F025)
- Wood preserving (F032, F034, F035)
- Petroleum refining (F037, F038)

These F-listings are not applicable to waste from C-14-007 within CdV Watershed.

Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at C-14-007.

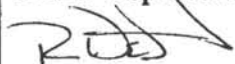
The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions.

#### Documents Reviewed

Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
PRS Database	July 2010	NA

#### Review/Approval

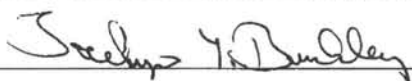
ADEP Representative:



Date:

6/8/11

ENV-RCRA Environmental Professional



Date:

6/8/11



## AK REVIEW FORM or DUE DILIGENCE REPORT

### Remediation; Soil Sampling; and Borehole Sampling

PRS ID No.: C-14-009

Technical Area: 14

**Watershed:**

Cañon de Valle

**Scope of Work:**

Sampling to define nature and extent of potential contamination.

#### PRS Description

AOC C-14-009 is the site of a former magazine (structure 14-13), which was built in 1945 to temporarily store explosives for use at the two firing pads at Building 14-5. This AOC is located at the eastern end of TA-14, about 50 ft northeast of Building 14-5. Made of wood, it was 3 ft wide x 4 ft long x 3 ft high with a soil berm on three sides and the top. Structure 14-13 was used until the firing pads were deactivated in the mid-1950s. A 1959 survey noted that structure 14-13 was contaminated with HE, and it was destroyed by burning in 1960.

The ER Project conducted an RFI at this site in 1995 to determine the presence or absence of contamination. Two samples were collected and field-screened for HE and radiation. No HE was detected, and radiation levels were below background. The samples were submitted for laboratory analysis of inorganic chemicals and HE. One inorganic chemical was detected at concentrations above its BV but below screening level. The RFI report recommended NFA for this site.

#### Listed Status

There is no documented evidence that this SWMU is contaminated with F-, K-, P-, or U-listed constituents from a listed source. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.

#### Potential Contaminant Sources

#### Listed

Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)

No

Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]

No

#### Review Summary and Waste Management Instructions

Guidance provided by EPA's Management of Remediation Waste Under RCRA (EPA 530-F-98-026). Determination of When Contamination is Caused by Listed Hazardous Waste states:

"Where a facility owner/operator makes a good faith effort to determine if a material is a listed hazardous waste but cannot make such a determination because documentation regarding a source of contamination, contaminant, or waste is unavailable or inconclusive, EPA has stated that one may assume the source, contaminant or waste is not listed hazardous waste and therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply."

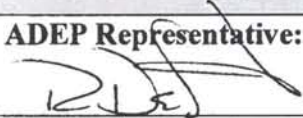

There are no records of U- and/or P-listed spills that would require wastes from C-14-009 to be listed. F-listed sources are associated with specific processes and operations. There is no documented evidence that any of the following processes/operations have occurred at the Laboratory:

- Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)
- Aliphatic hydrocarbon production (F024, F025)
- Wood preserving (F032, F034, F035)
- Petroleum refining (F037, F038)

These F-listings are not applicable to waste from C-14-009 within CdV Watershed.

Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at C-14-009.

The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions.

Documents Reviewed		
Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
PRS Database	July 2010	NA
SWMU Report, Volume II to IV (TA-10 through TA-25)	11/1/1990	007512
Review/Approval		
<b>ADEP Representative:</b> 	<b>Date:</b> 6/8/11	
<b>ENV-RCRA Environmental Professional</b> 	<b>Date:</b> 6/8/11	



## Request for Land Application of Drill Cuttings Form

ENV-RCRA must approve any deviation(s) from this request prior to land application.

Date: 10/17/11 Project: Canon De Valle Aggregate Sites  
Location of Land Application: within project footprint TA: 14 YAO C-14-007  
Estimated Quantity: 7 ft<sup>3</sup> (cubic feet or tons)  
Composition (e.g., 98% tuff and 2% quick gel, etc.): 100% Soil  
Proposed Method of Land Application (describe): Cuttings will be land applied within project footprint, at the point of generation of on-project access roads, and covered with a layer of road base

Note: An EX-ID Permit is required prior to land application.

### Decision Tree—Decision Point Evaluation

The following questions require yes or no answers.

1. D1: Is existing characterization data consistent with WCSF? Attach a summary table of results, validated raw data, etc.

Yes

No

☒

☐

2. D2: Do drill cuttings contain RCRA Hazardous Waste or Hazard constituents above RCRA limits? If yes:

☐

☒

Has a Due Diligence been conducted for this waste? Attach a copy of the due diligence documentation.

☐

☐

Has a *No Longer Contained In* been approved for this waste? Attach a copy of the *No Longer Contained In* approval.

☐

☐

3. D6: Do drill cuttings meet the 5 criteria in D6, Attachment 1?

☒

☐

4. Do drill cuttings meeting the criteria in the Radiological Decision Tree, Attachment 3?

☒

☐

Generator or Project Leader Certification: I certify that the drill cuttings described in this request meet the criteria for land application per the Decision Tree and that the drill cuttings will be land applied as described.

John P. McGann  
Name (Print)

[Signature]  
Signature

Generator  
Title

10-19-2011  
Date

### ENV-RCRA Review (below):

Does request provide all the required information, and do the drill cuttings meet all the criteria for land application?  
Yes X No        Note deficiency in the space provided:

ENV-RCRA Reviewer Name (Print) Jocelyn Buckley

Signature [Signature]

Date 10-19-11

Package Expiration Date: 11-18-11



Post Land Application Field Certification Sheet

Date(s) of land application: 10/21/11 Project: Canon De Valle  
Location of land application: Project Access Road TA: 14  
EX-ID Number: 11X-0438-14 EX-ID Expiration Date: 1/28/12

Please explain any deviations from original application (Attachment 2) in the space provided: \_\_\_\_\_

**Note:** ENV-RCRA must approve any deviations from Attachment 2 prior to land application.

Generator or Project Leader Certification (below):

I certify that

- land application complied with the requirements of this procedure (ENV-RCRA-SOP-011.1),
- no free liquids were applied during land application,
- an inspection was conducted to ensure the requirements in Attachment 2 of this procedure was met, and
- the land application of drill cuttings complied with the excavation permit.

John P. McCann [Signature] Generator 10-24-2011  
Name (Print) Signature Title Date

## Solid Waste Evaluation

Summary file: AWD ev 3595.65.68 2011013122748(1).xism  
evaluation date: 10/13/2011

## RCRA

33 analytes pass  
29 analytes pass as undetected  
10 analytes fail

## Detects

PCBs: none detected  
0  
5 analytes with potential F-code  
6 analytes with potential K-code  
0 analytes with potential U-code  
0 analytes with potential P-code

Non-wastewater LDR: 12 pass 0 FAIL  
Hazardous soil LDR: 12 pass 0 FAIL

Residential Soil (mg/kg) : 19 pass 1 FAIL  
Industrial/ Occupational Soil (mg/kg) : 20 pass 0 FAIL  
Construction Worker Soil (mg/kg) : 18 pass 0 FAIL  
Recreational Soil (mg/kg) : 20 pass 0 FAIL  
soil background: 21 pass 2 FAIL  
Canyon Sediment background: 20 pass 3 FAIL  
Qbt 2,3,4 background: 17 pass 6 FAIL  
Qbt 1v background: 16 pass 7 FAIL  
Qbt 1g, Qct, Qbo background: 13 pass 10 FAIL

## RAD

total dose: 0.0000 mRem/year

analysed for H-3  
analysed for Pu-239  
22 isotopes,  
10 were detected  
12 undetected

Residen-tial SAL: 2 pass 0 FAIL  
Indust-rial SAL: 2 pass 0 FAIL  
Constr. Worker SAL: 2 pass 0 FAIL  
Recrea-tional SAL: 2 pass 0 FAIL  
Soil: 7 pass 2 FAIL  
Canyon Sedi-ment: 7 pass 2 FAIL  
QBT2,3,4: 7 pass 0 FAIL  
Qbt 1v: 9 pass 0 FAIL  
Qbt 1g, Qct, Qbo: 9 pass 0 FAIL

Remark: The Evaluator may overwrite any result of automatic evaluation,  
but a short written explanation must be added

Sample ID	associated blanks	associated duplicate
WST14-11-26465	WST14-11-26468	

Imported data files
ev3595.10.13.2011.txt



## Detected Chemicals Form

Analyte	CASI/ Symbol	concentration	unit of measure	Non- wastewater LDR	Hazardous Soil LDR	Potential Haz F-codes	Potential Haz K-codes	Potential Haz U-codes	Potential Haz P-codes	comments
Aluminum	Al	3760	mg/kg	pass	pass		K161,K021,K177,			
Antimony	Sb	0.12	mg/kg	pass			K031,K060,K161,K171,K172,K176,K 084,K101,K102,			
Arsenic	As	6.3	mg/kg	pass						
Barium	Ba	20.4	mg/kg	pass		F032,F034,F035,				
Beryllium	Be	0.38	mg/kg	pass						
Cadmium	Cd	0.019	mg/kg	pass		F006,	K061,K069,K100,K064,			
Calcium	Ca	885	mg/kg							
Chromium	Cr	25.6	mg/kg	pass		F032,F034,F035,F037,F038,	K090,			
Cobalt	Co	1.5	mg/kg							
Copper	Cu	5.8	mg/kg							
Iron	Fe	9770	mg/kg							
Lead	Pb	13.7	mg/kg	pass		F035,F037,F038,	K002,K003,K005,K048,K049,K051,K 062,K064,K086,K100,K176,K046,K0 52,K061,K069,			
Magnesium	Mg	1040	mg/kg		pass					
Manganese	Mn	94.5	mg/kg							
Nickel	Ni	8.1	mg/kg	pass		F006,				
Nitrate	NO3	0.19	mg/kg		pass					
Potassium	K	863	mg/kg							
Selenium	Se	2.3	mg/kg	pass						
Silver	Ag	0.02	mg/kg	pass						
Sodium	Na	260	mg/kg	pass						
TATB	3058-38-6	0.11	mg/kg							
Thallium	Tl	0.3	mg/kg				K176,			
Uranium	U	0.38	mg/kg							
Vanadium	V	7.2	mg/kg	pass						
Zinc	Zn	19.8	mg/kg	pass						

## Detected Chemicals: SSL and Background check

[illegible]



**SAL and background comparison**

Analyte	CAS/ Symbol	concentration	unit of measure	Residential SAL	Industrial SAL	Constr. Worker SAL	Recreational SAL	Soil	Canyon Sediment	QBT2, 3,4	QBT 1v	Qbt 1g, Qct, Qbo
Actinium-228	Ac-228	1.66	pCi/g									
Americium-241	Am-241	0.042	pCi/g									
Bismuth-212	Bi-212	2.57	pCi/g					FAIL	FAIL	FAIL	pass	pass
Bismuth-214	Bi-214	1.08	pCi/g					pass	pass	pass	pass	pass
Lead-212	Pb-212	1.47	pCi/g					pass	pass	pass	pass	pass
Lead-214	Pb-214	1.04	pCi/g					pass	pass	pass	pass	pass
Potassium-40	K-40	33.6	pCi/g					pass	pass	pass	pass	pass
Thallium-208	Tl-208	0.473	pCi/g					pass	pass	pass	pass	pass
Thorium-234	Th-234	2.33	pCi/g					FAIL	FAIL	FAIL	pass	pass
Uranium-234	U-234	0.292	pCi/g	pass	pass	pass	pass	pass	pass	pass	pass	pass
Uranium-238	U-238	0.313	pCi/g	pass	pass	pass	pass	pass	pass	pass	pass	pass
Cobalt-60	Co-60	0.006	pCi/g									
Cesium-134	Cs-134	0.049	pCi/g									
Cesium-137	Cs-137	0.067	pCi/g									
Iodine-131	I-131	0.015	pCi/g									
Plutonium-238	Pu-238	0.0043	pCi/g									
Plutonium-239/240	Pu-239/240	-0.0031	pCi/g									
Protactinium-234m	Pa-234m	3.3	pCi/g									
Sodium-22	Na-22	0.003	pCi/g									
Strontium-90	Sr-90	0.023	pCi/g									
Tritium	H-3	0.171	pCi/g									
Uranium-235/236	U-235/236	-0.003	pCi/g									

Th<sup>234</sup> - Not applicable per attachment 5

Bismuth<sup>212</sup> - Not applicable per attachment 5

OKay for Land App



## AK REVIEW FORM or DUE DILIGENCE REPORT

### Remediation; Soil Sampling; and Borehole Sampling

PRS ID No.: 14-007

Technical Area: 14

**Watershed:**

Cañon de Valle

**Scope of Work:**

Sampling to define nature and extent of potential contamination. ~~Excavation~~ <sup>Excavation</sup> ~~Soil~~ <sup>Soil</sup>

#### PRS Description

SWMU 14-007 is an inactive septic tank (structure 14-19) and its associated drain field. The tank was built in 1944 to serve the restrooms in a storage building (Building 14-6). Building 14-6 was built as a shop but later was used as a darkroom. It has been used for storage since 1965. Made of reinforced concrete, the septic tank is 4 ft wide x 7 ft long x 6 ft deep and has a capacity of 640 gal. The septic tank was connected to an overflow drainline that ran northeast for 130 ft before daylighting into an outfall about 1 ft wide. A drain field installed in 1988 replaced the drainline from the septic tank. The septic tank was disconnected in 1992 when Building 14-6 was connected to the SWSC.

The ER Project conducted an RFI at SWMU 14-007 in 1995 to determine the presence or absence of contamination. Six soil samples were collected from the drain field and were field-screened for radiation and HE. No HE was detected, and radiation levels were below background. The samples were submitted for laboratory analysis of inorganic chemicals, organic chemicals, total cyanide, HE, and radionuclides. Five inorganic chemicals and uranium-235 and uranium-238 were detected at concentrations above BVs. No organic chemicals were detected. The human health risk screening assessment determined that none of these chemicals should be considered as potential contaminants. The RFI report recommended NFA for this site.

#### Listed Status

There is no documented evidence that this Consolidated Unit is contaminated with F-, K-, P-, or U-listed waste. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.

#### Potential Contaminant Sources

#### Listed

Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)

No

Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]

No

#### Review Summary and Waste Management Instructions

Guidance provided by EPA's Management of Remediation Waste Under RCRA (EPA 530-F-98-026), Determination of When Contamination is Caused by Listed Hazardous Waste states:

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- Production and manufacturing of tr8-, tetra- or pentachlorophenol, or tetra-, penta- or hexachlorobenzene (F020, F021, F022, F023, F027, F028)
- Aliphatic hydrocarbon production (F024, F025)
- Wood preserving (F032, F034, F035)

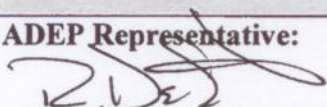
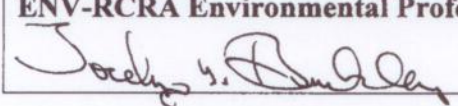


- Petroleum refining (F037, F038)

These F-listings are not applicable to waste from 14-007 within CdV Watershed.

Most K-listed sources are industrial in nature and not typical of Laboratory operations. The Laboratory generates only small amounts of K-listed wastes, primarily spent carbon from high explosives processing that is disposed off-site. The documented amounts of K-listed wastes generated at LANL are not sufficient to have impacted activities at 14-007.

The IDW from the site may be managed as non-hazardous. Refer to the WCSF for detailed waste management instructions.

Documents Reviewed		
Document Title	Date	ER ID No.
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [HIR]	9/29/2006	091697
Canon de Valle Aggregate Area Investigation Work Plan and Historical Investigation Report [IWP]	9/29/2006	091698
RFI Report for PRSs at TAs 6, 8, 22, and 40 (Located in Former OUs 1111 and 1157)	9/29/1997	056664
VCA Plan for TA-14: PRSs 14-002(a), Firing Site; 14-010, Sump	5/1/1997	055678
Voluntary Corrective Action (VCA) Completion Report for PRS 14-002(a), Firing Site and 14-010, Sump, Field Unit 2	9/1/1996	056611
RFI Report for PRSs at TA-12, TA-14, and TA-67 (located in former Operable Unit 1085)	2/19/1996	054086
RFI Work Plan for Operable Unit 1085	May 1994	034755
SWMU Report, Volume II of IV (TA-10 through TA-25)	11/01/1990	007512
PRS Database	July 2010	NA
Review/Approval		
ADEP Representative: 	Date: 6/8/11	
ENV-RCRA Environmental Professional 	Date: 6/8/11	

## Request for Land Application of Drill Cuttings Form

ENV-RCRA must approve any deviation(s) from this request prior to land application.

Date: 10/17/11 Project: Canon De Valle Aggregate Sites  
Location of Land Application: Within project footprint TA: 14 (SWMU 14-001)  
Estimated Quantity: 7 ft<sup>3</sup> (cubic feet or tons)  
Composition (e.g., 98% tuff and 2% quick gel, etc.): 100% Soil  
Proposed Method of Land Application (describe): Cuttings will be land applied within project footprint, at the point of generation or on project access roads, and covered with a layer of roadbase

Note: An EX-ID Permit is required prior to land application.

### Decision Tree—Decision Point Evaluation

The following questions require yes or no answers.

- |   | Yes  | No  |
|---|--|---|
| 1. D1: Is existing characterization data consistent with WCSF? Attach a summary table of results, validated raw data, etc.  | <input checked="" type="checkbox"/>  | <input type="checkbox"/>  |
| 2. D2: Do drill cuttings contain RCRA Hazardous Waste or Hazard constituents above RCRA limits? If yes:<br>Has a Due Diligence been conducted for this waste? Attach a copy of the due diligence documentation.<br>Has a <i>No Longer Contained In</i> been approved for this waste? Attach a copy of the <i>No Longer Contained In</i> approval. | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <input type="checkbox"/><br><input checked="" type="checkbox"/><br><input type="checkbox"/> |
| 3. D6: Do drill cuttings meet the 5 criteria in D6, Attachment 1?   | <input checked="" type="checkbox"/>  | <input type="checkbox"/>  |
| 4. Do drill cuttings meeting the criteria in the Radiological Decision Tree, Attachment 3?  | <input checked="" type="checkbox"/>  | <input type="checkbox"/>  |

Generator or Project Leader Certification: I certify that the drill cuttings described in this request meet the criteria for land application per the Decision Tree and that the drill cuttings will be land applied as described.

<u>John P. McManis</u>	<u>[Signature]</u>	<u>Generator</u>	<u>10-19-2011</u>
Name (Print)	Signature	Title	Date

### ENV-RCRA Review (below):

Does request provide all the required information, and do the drill cuttings meet all the criteria for land application?  
Yes X No        Note deficiency in the space provided:

ENV-RCRA Reviewer Name (Print) Joylyn T. Buckley Signature [Signature] Date 10-19-11  
Package Expiration Date: 11-18-11



Post Land Application Field Certification Sheet

Date(s) of land application: 10/21/11 Project: Canon De Valle  
Location of land application: Project Access Road TA: 14  
EX-ID Number: 11X-0438-14 EX-ID Expiration Date: 1/28/12

Please explain any deviations from original application (Attachment 2) in the space provided: Cuttings  
were land applied on project access road & covered with a  
layer of road base. No deviation from Attachment 2.

**Note:** ENV-RCRA must approve any deviations from Attachment 2 prior to land application.

Generator or Project Leader Certification (below):

I certify that

- land application complied with the requirements of this procedure (ENV-RCRA-SOP-011.1),
- no free liquids were applied during land application,
- an inspection was conducted to ensure the requirements in Attachment 2 of this procedure was met, and
- the land application of drill cuttings complied with the excavation permit.

John McCann  
Name (Print)

[Signature]  
Signature

Generator  
Title

10-24-2011  
Date

# Solid Waste Evaluation

RCRA	<div> <div>33 analytes pass</div> <div>29 analytes pass as undetected</div> <div>10 analytes fail</div> </div>	
Detects	<div> <div> <div>PCBs: none detected</div> <div>0</div> </div> <div> <div>5 analytes with potential F-code</div> <div>6 analytes with potential K-code</div> <div>1 analytes with potential U-code</div> <div>0 analytes with potential P-code</div> </div> <div> <div>Non-wastewater LDR: 13 pass</div> <div>0 FAIL</div> </div> <div> <div>Hazardous soil LDR: 13 pass</div> <div>0 FAIL</div> </div> <div> <div>Industrial/ Occupational Soil (mg/kg) : 20 pass</div> <div>0 FAIL</div> </div> <div> <div>Construction Worker Soil (mg/kg) : 16 pass</div> <div>1 FAIL</div> </div> <div> <div>Recreational Soil (mg/kg) : 20 pass</div> <div>0 FAIL</div> </div> <div> <div>soil background: 22 pass</div> <div>1 FAIL</div> </div> <div> <div>Canyon Sediment background: 19 pass</div> <div>4 FAIL</div> </div> <div> <div>Qbt 2,3,4 background: 11 pass</div> <div>12 FAIL</div> </div> <div> <div>Qbt 1v background: 11 pass</div> <div>12 FAIL</div> </div> <div> <div>Qbt 1g, Qct,Qbo background: 9 pass</div> <div>14 FAIL</div> </div> </div>	
RAD	<div> <div>total dose: 0.0000 mRem/year</div> <div> <div>analysed for H-3</div> <div>analysed for Pu-239</div> <div>21 isotopes,</div> </div> <div> <div>Residen-tial SAL: 2 pass</div> <div>Indust-rial SAL: 2 pass</div> <div>Constr. Worker SAL: 2 pass</div> <div>Recrea-tional SAL: 2 pass</div> <div>Soil: 7 pass</div> <div>Canyon Sedi-ment: 7 pass</div> <div>QBT2,3,4: 7 pass</div> <div>Qbt 1v: 7 pass</div> <div>Qbt 1g, Qct, Qbo: 7 pass</div> </div> <div> <div>8 were detected</div> <div>13 undetected</div> </div> </div>	

Remark: The Evaluator may overwrite any result of automatic evaluation, but a short written explanation must be added

Sample ID	associated blanks	associated duplicate
WST14-11-26464	WST14-11-26467	

Imported data files
ev3595.10.13.2011.txt



## Detected Chemicals Form

Analyte	CAS/ Symbol	concen- tration	unit of measure	Non- wastewater LDR	Hazardous Soil LDR	Potential Haz F-codes	Potential Haz K-codes	Potential Haz U-codes	Potential Haz P-codes	comments
Aluminum	Al	12300 mg/kg		pass						
Antimony	Sb	0.18 mg/kg		pass			K161, K021, K177, K031, K060, K161, K171, K172, K176, K 084, K101, K102,			
Arsenic	As	2.7 mg/kg		pass		F032, F034, F035,				
Barium	Ba	154 mg/kg		pass						
Beryllium	Be	0.94 mg/kg		pass						
Cadmium	Cd	0.054 mg/kg		pass		F006,	K061, K069, K100, K064,			
Calcium	Ca	2220 mg/kg								
Chromium	Cr	8.7 mg/kg		pass		F032, F034, F035, F037, F038,	K090,			
Cobalt	Co	5.2 mg/kg								
Copper	Cu	6.1 mg/kg								
Iron	Fe	12200 mg/kg								
Lead	Pb	11.4 mg/kg		pass		F035, F037, F038,	K002, K003, K005, K048, K049, K051, K 062, K064, K086, K100, K176, K046, K0 52, K061, K069,			
Magnesium	Mg	1760 mg/kg			pass					
Manganese	Mn	334 mg/kg								
Mercury	Hg	0.0179 mg/kg		pass						
Nickel	Ni	7.1 mg/kg		pass		F006,	K175, K071, K106,	U151,		
Nitrate	NO3	0.8 mg/kg		pass						
Potassium	K	1640 mg/kg								
Selenium	Se	1.2 mg/kg		pass						
Silver	Ag	1.3 mg/kg		pass						
Sodium	Na	203 mg/kg								
TATB	3058-38-6	0.15 mg/kg								
Uranium	U	0.77 mg/kg								
Vanadium	V	17.9 mg/kg		pass						
Zinc	Zn	28.7 mg/kg		pass						

### Detected Chemicals: SSL and Background check

[illegible]



SWMU ev 3595.64.67

## SAL and background comparison

associated Excel file: A:\ev 3595.64.67 20111013122426(1).xlsm

Stockpile Number ev 3595.64.67

evaluation date: 10/13/2011

[illegible]



## AK REVIEW FORM or DUE DILIGENCE REPORT

### Remediation; Soil Sampling; and Borehole Sampling

PRS ID No.: C-14-007

Technical Area: 14

**Watershed:**

Cañon de Valle

**Scope of Work:**

Sampling to define nature and extent of potential contamination.

#### PRS Description

AOC C-14-007 is the site of a former storage building (structure 14-10) in the central part of TA-14, 160 ft west of a control building (Building 14-23). Made of wood, structure 14-10 was 10 ft long x 10 ft wide x 8 ft high. It was built in 1945 and removed in 1952. A small pile of bricks and mortar remains at the site of former structure 14-10.

The ER Project conducted an RFI at this site in 1995 to determine the presence or absence of contamination. Two samples were collected and field-screened for HE and radiation. No HE was detected, and radiation levels were within background. The samples were submitted for laboratory analysis of inorganic chemicals, total uranium, HE, and organic chemicals. Three inorganic chemicals were detected at concentrations above BVs but below 1995 screening levels. Total uranium was detected at concentrations above 1995 BVs. One HE chemical, 4-amino-2,6-dinitrotoluene, was detected. No other organic chemicals were detected. The HE chemical had no screening level. Because the detected level was near the detection limit, the HE chemical was not retained as a potential contaminant. The RFI report recommended NFA for this site.

#### Listed Status

There is no documented evidence that this SWMU is contaminated with F-, K-, P-, or U-listed constituents from a listed source. If potentially listed organics typical of asphalt are detected, the source may be considered to be asphalt, if applicable, which is not a listed source.

#### Potential Contaminant Sources

#### Listed

Asphalt/concrete parking lot run-off (e.g., MEK, Methylene Chloride, Toluene, etc.)

No

Plastics used in waste storage and/or sampling equipment [i.e., Bis(2-ethylhexyl)phthalate]

No

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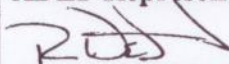
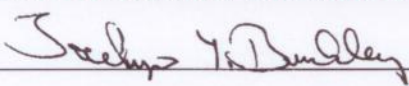
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#### Review/Approval

<b>ADEP Representative:</b> 	<b>Date:</b> 6/8/11
<b>ENV-RCRA Environmental Professional</b> 	<b>Date:</b> 6/8/11

[illegible]

**NOTE:** This shipment is exempt from DOT requirements. The activity level is less than 2 nanocuries per gram, and does not meet the DOT definition of a radioactive material.

- ❖ **Waste Generator Certification:** Based on my process knowledge of the waste and/or chemical/physical/radiological analysis, the waste is expected to be free of radioactive contamination and I certify that the information on this form is correct. I understand that this information may be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.
- ❖ **Waste Generator Signature (Required):** [Signature] **Date:** 10-25-11
- ❖ **Waste Management Coordinator:** I have reviewed this form and to the best of my knowledge, the information is complete and accurate.
- ❖ **WMC Signature (Required):** [Signature] **Date:** 10-25-11
- ❖ **GIC Verifier Name (Required):** \_\_\_\_\_ **Date:** \_\_\_\_\_
- \* Although there is no charge for Green is Clean waste, the complete generator "Charge Code" is required; it is the participant identifier in the database

Page 1 of 2  
Printed on: 10/24/2011



