DEPARTMENT OF ENERGY
Environmental Management Los Alamos Field Office (EM-LA)
Los Alamos, New Mexico 87544



EMLA-23-BF256-2-1

September 14, 2023

Mr. Rick Shean
Designated Agency Manager
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313

Subject: Submittal of the Phase III Investigation Work Plan for Chaquehui Canyon Aggregate Area

Dear Mr. Shean:

Enclosed please find two hard copies with electronic files of the "Phase III Investigation Work Plan for Chaquehui Canyon Aggregate Area."

This Phase III investigation work plan presents the following proposed activities for the Phase III investigation at Chaquehui Canyon Aggregate Area:

- sampling and analyses needed to define the vertical and/or lateral extent of 1 or more contaminants at 13 sites;
- of these 13 sites, soil removal activities and confirmation sampling at 4 sites that pose a potential unacceptable human health risk or a potential unacceptable ecological risk; and
- borehole drilling, vapor-monitoring well installation, and pore-gas sampling to define the extent of subsurface tritium and volatile organic compound contamination at 5 sites of Material Disposal Area K.

The results of the Phase III investigation activities for these 18 sites will be reported in the Chaquehui Canyon Aggregate Area Phase III investigation report. A pre-submission meeting was held with the New Mexico Environment Department (NMED), the U.S. Department of Energy Environmental Management Los Alamos Field Office (EM-LA), and Newport News Nuclear BWXT-Los Alamos, LLC (N3B) on July 26, 2023.

Per Section XXIII.D of the Compliance Order on Consent (Consent Order), the U.S. Department of Energy Environmental Management Los Alamos Field Office (EM-LA) sought to reach agreement with NMED on a review schedule by when NMED will review and approve or disapprove this submission.[1] Consistent with Section XXIII.D and Appendix D (Document Review/Comment and

[1] Section XXIII.D states, in pertinent part:

"[p]rior to DOE's submission of any work plan or report required by Sections XIII, XVI, XVIII, XIX, or XV (Facility Investigation, Corrective Measures Evaluation, Corrective Measures Implementation, Accelerated Corrective Action, Interim Measures), **the Parties agree to reach agreement on review schedules by when NMED will review and approve or disapprove DOE's submission(s)** ... If NMED action on a DOE submission is not completed in accordance with an agreed-upon review schedule, the submittal will be **deemed approved."**

(emphasis added). EM-LA recognizes that NMED "may request a single extension for a specified number of days to an agreed-upon review schedule."

Revision Schedule) of the Consent Order, EM-LA proposed a 90-day period for NMED to review and approve or disapprove this submission. NMED failed to respond to EM-LA's proposal. Because of NMED's failure to respond, EM-LA and NMED were unable to reach agreement on the review schedule by when NMED will review and approve or disapprove the submission. A copy of the correspondence from EM-LA to NMED regarding NMED's review schedule is enclosed (Enclosure 2).

It is crucial that NMED commit to a review schedule of EM-LA's submissions for EM-LA to be able to plan in a timely and effective manner—and expeditiously execute—legacy waste remediation through the Consent Order corrective action process. Moreover, such commitment from NMED needs to be in accordance with the Consent Order.

If you have any questions, please contact Brenda Bowlby at (360) 930-4353 (brenda.bowlby@em-la.doe.gov) or Cheryl Rodriguez at (505) 414-0450 (cheryl.rodriguez@em.doe.gov).

Sincerely,

ARTURO DURAN
Digitally signed by ARTURO DURAN
Date: 2023.09.14 08:14:25 -06'00'

Arturo Q. Duran
Compliance and Permitting Manager
U.S Department of Energy
Environmental Management
Los Alamos Field Office

Enclosure(s): Two hard copies with electronic files:

1. Phase III Investigation Work Plan for Chaquehui Canyon Aggregate Area (EM2023-0424)
2. Email correspondence, Request for NMED Review Period of 90 Days for the Upcoming Submittal of the Phase III Investigation Work Plan for Chaquehui Canyon Aggregate Area, dated August 24, 2023

cc (letter with CD enclosure[s]):
Laurie King, EPA Region 6, Dallas, TX
Raymond Martinez, San Ildefonso Pueblo, NM
Dino Chavarria, Santa Clara Pueblo, NM
Steve Yanicak, NMED-DOE-OB
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cc (letter emailed without enclosure[s]):
Neelam Dhawan, NMED-HWB
Ricardo Maestas, NMED-HWB
Michael Petersen, NMED-HWB
Jeannette Hyatt, LANL
Stephen Hoffman, NA-LA
John Evans, EM-LA
Sarah Eli Gilbertson, EM-LA
Brian Harcek, EM-LA
Michael Mikolanis, EM-LA
Kent Rich, EM-LA
Susan Wacaster, EM-LA
William Alexander, N3B
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Robert Edwards III, N3B
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Public Reading Room (EPRR)
PRS website

William Alexander

From: Arturo Duran
Sent: Thursday, August 24, 2023 3:04 PM
To: Shean, Rick, ENV
Cc: Dhawan, Neelam, ENV; Brian Harcek; Evans, John H.
Subject: Proposed review period of 90 days for the Phase III Investigation Work Plan for Chaquehui Canyon Aggregate Area.

Good afternoon Rick,

EM-LA will be transmitting the following deliverable for NMED review and approval: Phase III Investigation Work Plan for Chaquehui Canyon Aggregate Area.

Per Section XXIII.D of the 2016 Compliance Order on Consent (Consent Order), DOE EM-LA proposes a 90 day period for NMED to review and approve or disapprove EM-LA's submission of Phase III Investigation Work Plan for Chaquehui Canyon Aggregate Area.

The 90 day review period will start from the date this document is submitted to NMED. The project's schedule is contingent on NMED's timely review of this submission.

EM-LA requests NMED's agreement with the review period as proposed above. This review period is consistent with the 90 day period for NMED to review RFI Work Plans set forth in Appendix D of the Consent Order.

Section XXIII.D of the Consent Order provides that "[p]rior to DOE's submission of any work plan or report required by Sections XIII, XVI, XVIII, XIX, or XV (Facility Investigation, Corrective Measures Evaluation, Corrective Measures Implementation, Accelerated Corrective Action, Interim Measures), the Parties agree to reach agreement on review schedules by when NMED will review and approve or disapprove DOE's submission(s)."

Please let me know if NMED agrees with the proposed 90 days period for NMED review and approval.

Thanks in advance for your consideration.

Arturo

September 2023
EM2023-0424

Phase III Investigation Work Plan for Chaquehui Canyon Aggregate Area

N3B Los Alamos

Newport News Nuclear BWXT-Los Alamos, LLC (N3B), under the U.S. Department of Energy Office of Environmental Management Contract No. 89303318CEM000007 (the Los Alamos Legacy Cleanup Contract), has prepared this document pursuant to the Compliance Order on Consent, signed June 24, 2016. The Compliance Order on Consent contains requirements for the investigation and cleanup, including corrective action, of contamination at Los Alamos National Laboratory. The U.S. government has rights to use, reproduce, and distribute this document. The public may copy and use this document without charge, provided that this notice and any statement of authorship are reproduced on all copies.

EM2023-0424

Phase III Investigation Work Plan for Chaquehui Canyon Aggregate Area

September 2023

Responsible program director:

Printed Name	Signature	Title	Organization	Date
Brenda Bowlby		Program Director	RCRA Remediation Program	8/7/2023

Responsible N3B representative:

Printed Name	Signature	Title	Organization	Date
Troy Thomson		Program Manager	N3B Environmental Remediation Program	8/7/2023

Responsible DOE EM-LA representative:

Printed Name	Signature	Title	Organization	Date
Arturo Q. Duran	ARTURO DURAN Digitally signed by ARTURO DURAN Date: 2023.09.14 08:16:03 -06'00'	Compliance and Permitting Manager	Office of Quality and Regulatory Compliance	

EXECUTIVE SUMMARY

The Chaquehui Canyon Aggregate Area is located in Technical Area 33 of Los Alamos National Laboratory and includes a total of 51 solid waste management units and areas of concern. Of these 51 sites, 8 have been previously investigated and/or remediated and have been approved for no further action. The remaining 43 sites were investigated in 2019–2020, and the results were reported in the investigation report for the Chaquehui Canyon Aggregate Area. Of these 43 sites, 21 required additional investigation and/or remediation. Sixteen sites required additional soil sampling to define extent of contamination, 8 of the 16 sites required soil removal, and 5 sites at Material Disposal Area (MDA) K required pore-gas sampling to determine the extent of subsurface tritium contamination. The scope for additional sampling and remediation at 16 sites was documented in the approved Phase II investigation work plan for Chaquehui Canyon Aggregate Area and the results were reported in the Chaquehui Canyon Aggregate Area Phase II investigation report. Of the 16 sites investigated during Phase II, 13 required additional sampling to define extent of contamination. Of these 13 sites, 4 pose a potential unacceptable human health risk or a potential unacceptable ecological risk and required soil removal. The pore-gas sampling investigation results for 5 sites at MDA K were reported in an addendum to the Chaquehui Canyon Aggregate Area investigation report. Based on the evaluation of the data, the extent of contamination in pore gas is not defined and additional information is required to delineate tritium and volatile organic compound (VOC) contamination in pore gas at MDA K.

This Phase III investigation work plan presents the proposed sampling and analyses needed to define the vertical and/or lateral extent of 1 or more contaminants at 13 sites; soil removal activities and confirmation sampling at the 4 sites posing a potential unacceptable human health risk or a potential unacceptable ecological risk; and borehole drilling, vapor-monitoring well installation, and pore-gas sampling to define the extent of subsurface tritium and VOC contamination for 5 sites at MDA K. The results of the Phase III investigation activities for these 18 sites will be reported in a Phase III investigation report.

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1.0 INTRODUCTION

Los Alamos National Laboratory (LANL or the Laboratory) is a multidisciplinary research facility owned by the U.S. Department of Energy (DOE) and managed by Triad National Security, LLC (Triad). The Laboratory is located in north-central New Mexico approximately 60 mi northeast of Albuquerque and 20 mi northwest of Santa Fe. The Laboratory site covers 36 mi^2 of the Pajarito Plateau, which consists of a series of fingerlike mesas separated by deep canyons containing perennial and intermittent streams running from west to east. Mesa tops range in elevation from approximately 6200 to 7800 ft above mean sea level. The location of the Chaquehui Canyon Aggregate Area with respect to the Laboratory technical areas is shown in Figure 1.0-1 and on Plate 1.

The mission of the DOE Environmental Management Los Alamos Field Office (EM-LA) is to safely, efficiently, and transparently complete the cleanup of legacy contamination and waste resulting from nuclear weapons development and government-sponsored nuclear research before 1999 at the Laboratory. EM-LA's cleanup scope under the 2016 Compliance Order on Consent (Consent Order) with the New Mexico Environment Department (NMED) includes waste, soil, and groundwater remediation. The cleanup sites are designated as either solid waste management units (SWMUs) or areas of concern (AOCs). EM-LA's cleanup contractor, Newport News Nuclear BWXT-Los Alamos, LLC (N3B), implements the Los Alamos Legacy Cleanup Contract.

This Phase III investigation work plan addresses SWMUs and AOCs within the Chaquehui Canyon Aggregate Area at the Laboratory. These sites are potentially contaminated with hazardous chemicals and radionuclides. Corrective actions at the Laboratory are subject to the Consent Order. The Consent Order was issued pursuant to the New Mexico Hazardous Waste Act, New Mexico Statutes Annotated (NMSA) 1978 Section 74-4-10, and the New Mexico Solid Waste Act, NMSA 1978, Section 74 9 36(D). NMED, pursuant to the New Mexico Hazardous Waste Act, regulates cleanup of hazardous wastes and hazardous constituents. DOE regulates cleanup of radioactive contamination, pursuant to DOE Order 458.1, Administrative Change 4, "Radiation Protection of the Public and the Environment," and DOE Order 435.1, "Radioactive Waste Management." Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to NMED in accordance with DOE policy.

1.1 General Site Information

The Chaquehui Canyon Aggregate Area is located in Technical Area 33 (TA-33) at the Laboratory and consists of 51 SWMUs and AOCs (Plates 1 and 2), 7 of which were investigated and/or remediated and were approved for no further action before the effective date of the March 2005 Consent Order and 1 of which was remediated and received a certificate of completion under the 2005 Consent Order (NMED 2006, 093526). The remaining 43 SWMUs and AOCs were addressed in the approved investigation work plan for Chaquehui Canyon Aggregate Area (LANL 2010, 111298.9; NMED 2011, 201242). These sites were investigated in 2019–2020 and the results documented in the approved investigation report for Chaquehui Canyon Aggregate Area (N3B 2020, 701046). Of the 43 sites addressed during the 2019–2020 investigation, 21 required additional investigation and/or remediation. Sixteen sites required additional sampling to define extent of contamination, 8 of the 16 sites required soil removal, and 5 sites associated with Material Disposal Area (MDA) K required tritium sampling to determine the extent of subsurface tritium contamination. The scope for the additional sampling and remediation for 16 sites was documented in the approved Phase II investigation work plan for Chaquehui Canyon Aggregate Area (N3B 2021, 701355; NMED 2021, 701546) and the results were reported in the Chaquehui Canyon Aggregate Area Phase II investigation report (N3B 2021, 701606). Of the 16 sites investigated in

Phase II, 13 required additional sampling to define extent of contamination, and 4 of the 13 sites required soil removal. The subsurface tritium investigation results for 5 sites at MDA K were reported in the "Addendum to the Investigation Report for Chaquehui Canyon Aggregate Area for Material Disposal Area K, at Technical Area 33" (N3B 2021, 701735). Based on the evaluation of the data, the extent of contamination in pore gas is not defined and additional information is required to delineate the tritium and volatile organic compound (VOC) contamination in pore gas at MDA K.

1.2 Work Plan Overview

This Phase III investigation work plan presents the investigation activities proposed for 18 sites. The proposed sampling and analyses needed to define the vertical and/or lateral extent of 1 or more contaminants are presented for 13 sites. Planned soil removal activities and confirmation sampling and analyses are presented for 4 of the 13 sites that may pose a potential unacceptable risk under the industrial and/or the construction worker scenarios or a potential unacceptable ecological risk. Planned borehole drilling, installation of vapor-monitoring systems, and sampling are presented for 5 sites to define the extent of the tritium and VOC contamination in pore gas at MDA K. Table 1.2-1 presents a brief description of the 18 sites requiring additional investigation and/or remediation and the proposed activities for each site.

Section 2 of this Phase III investigation work plan presents the background and conceptual site model of the Chaquehui Canyon Aggregate Area. Section 3 presents site conditions, and section 4 summarizes previous investigations and data collected and presents the scope of proposed activities for each site. Section 5 describes investigation methods for proposed field activities. Ongoing monitoring and sampling programs in the Chaquehui Canyon Aggregate Area are presented in section 6. Section 7 is an overview of the anticipated schedule of the Phase III investigation and reporting activities. The references cited and the map data sources are provided in section 8. Appendix A of this work plan includes a list of acronyms and abbreviations, a metric conversion table, and a data qualifier definitions table. Appendix B describes management of waste generated during implementation of the work plan. Radiological and geophysical surveys completed during the Phase II investigation are included in Appendix C.

1.3 Work Plan Objectives

The objective of the Phase III investigation work plan is to complete characterization and corrective actions recommended in the Chaquehui Canyon Aggregate Phase II investigation report (N3B 2021, 701606) and the addendum to the investigation report for Chaquehui Canyon Aggregate Area for MDA K at TA-33 (N3B 2021, 701735).

To accomplish this objective, the Phase III investigation work plan

- presents historical and background information for the 18 sites,
- summarizes existing information on the nature and extent of contamination and provides preliminary risk assessment results,
- describes the rationale for proposed data collection activities,
- identifies and proposes appropriate methods and protocols for collecting, analyzing, and evaluating data to characterize these sites, and
- identifies and proposes appropriate methods and protocols for remediating select sites.

2.0 BACKGROUND

2.1 General Site Information

TA-33, also known as Hot Point (HP) Site, is located on the Lower Pajarito Plateau in the southeastern corner of the Laboratory (Plates 1 and 2). TA-33 occupies approximately 1000 acres and is currently used for experimental research activities that support the creation, delivery, and maintenance of innovative detection and energy-projection systems for remote applications in space and around the world. Structures within TA-33 are located on the mesa top that is bounded to the north by Ancho Canyon and on the south by Chaquehui Canyon. TA-33 extends southeast to the Rio Grande, southwest to Frijoles Canyon, northeast to Ancho Canyon, and northwest to NM 4.

2.2 Operational History

TA-33 was initially developed in 1947 as a test site for implosion-type initiator experiments using conventional high explosives (HE), depleted uranium (DU), and beryllium. Polonium-210 was prepared off-site and used as the radiation source for the experiments. The experiments were performed in underground chambers, on surface firing pads, and at firing sites equipped with large guns that fired projectiles into earthen berms. Initiator testing at TA-33 ceased in 1972.

After 1972, TA-33 has been used for offices, laboratories, and storage in support of electronics design and fabrication and experiments formerly conducted at the Hot Dry Rock Program. An antenna for the National Radio Astronomy Observatory (NRAO) Very Long Baseline Array radio telescope was sited at TA-33 in 1985 and is operational. The high-pressure tritium facility (former building 33-86) was constructed in 1955 and operated until 1990. The tritium facility was decommissioned and demolished in the mid-1990s.

TA-33 consists of five operational areas: a laboratory and office complex near the entrance of TA-33 at NM 4 (Main Site), the former western firing site (Area 6), the former southern firing site (South Site), the former eastern firing site (East Site), and the current site of the antenna for the NRAO Very Long Baseline Array radio telescope. Seventeen SWMUs and one AOC within the Chaquehui Canyon Aggregate Area are located at TA-33 and are addressed in this Phase III investigation work plan.

- SWMUs 33-001(a,b,c,d,e) are disposal pits and an underground chamber and shaft that are collectively referred to as MDA E. MDA E is located at the south end of TA-33 near the edge of Chaquehui Canyon at South Site. SWMUs 33-001(a–d) are abandoned waste disposal pits 1 through 4, respectively. SWMU 33-001(e) consists of an underground test chamber (former structure 33-29), underground elevator shaft (former structure 33-3), and a portable cable building (former structure 33-30). MDA E was operational from 1949 to 1956, occupies an area measuring approximately 140 ft long × 220 ft wide, and is enclosed by an 8-ft-high chainlink fence. The test chamber and shaft were abandoned in place in April 1950 and use of the disposal pits ceased in 1963. Two additional pits (pits 5 and 6) are located within the fenced area of MDA E. There is no documentation indicating that pits 5 and 6 were ever used, and they are not designated as SWMUs or AOCs. Based upon 1962 recommendations, radiation control area signs were posted around the fenced sides of MDA E, pit 2 was covered with approximately 2 ft of dirt, and all excess equipment and debris were removed from the site (Rogers 1977, 005708, p. E-5). Most vegetation including trees, shrubs, and grasses, were removed during the 2021–2022 ground-penetrating (GPR) surveys conducted within and around MDA E (Appendix C).
- SWMUs 33-002(a,b,c,d,e) are a septic system and two seepage pits with drainlines and outfalls that served the former tritium facility (building 33-86), and SWMU 33-010(f) is a former surface

disposal area; these SWMUs are collectively referred to as MDA K. MDA K is located in the southeast area of Main Site at TA-33. SWMU 33-002(a) is a former septic system approximately 80 ft east of former tritium building 33-86. SWMU 33-002(b) is a former seepage pit (former structure 33-134) and associated inlet drainline approximately 80 ft east of former tritium building 33-86. SWMU 33-002(c) is a former seepage pit (former structure 33-133) and associated inlet drainline approximately 80 ft east of former tritium building 33-86. SWMU 33-002(d) is a former 90-ft outlet drainline from former seepage pit 33-133 and the outfall at the end of the drainline. SWMU 33-002(e) is a former 90-ft outlet drainline from former seepage pit 33-134 and the outfall at the end of the drainline. SWMU 33-010(f) is a former surface disposal area consisting of two small surface disposal areas located 300 ft southeast of former building 33-86 and approximately 50 ft apart at Main Site. The debris at SWMU 33-010(f) was removed during the 2019–2020 investigation and the investigation results determined the nature and extent of contamination are defined and the site does not pose a potential unacceptable risk or dose under the industrial, construction worker, and residential scenarios and has no potential ecological risks. SWMU 33-010(f) was recommended for corrective action complete without controls in the approved investigation report for Chaquehui Canyon Aggregate Area (N3B 2020, 701046); (NMED 2021, 701685) and will not be discussed further in this Phase III investigation work plan.

- SWMU 33-004(a) is an active septic system that consists of a septic tank (structure 33-31), associated inlet and outlet drainlines, three manholes, two seepage pits, and a drain field in the northwest portion of Main Site at TA-33.
- SWMU 33-004(i) consists of two inactive drainlines and outfalls associated with a former machine shop (building 33-39) located near the east side of Main Site at TA-33.
- SWMU 33-006(a) is an inactive shot pad at South Site where implosion tests were conducted at the southern end of TA-33.
- SWMU 33-008(c) is a former surface disposal area located east of Main Site buildings 33-39 and 33-113 outside of the Main Site security fence at TA-33.
- SWMU 33-011(a) is a former 0.25-acre drum storage area directly within the footprint and south of former building 33-21 in the central portion of TA-33.
- SWMU 33-012(a) is a former satellite accumulation area (SAA) for a former machine shop in building 33-39 at Main Site at TA-33.
- SWMU 33-017 consists of areas potentially impacted by operational releases from former operations within Main Site at TA-33.
- AOC C-33-001 consists of a former polychlorinated biphenyl (PCB) transformer (former structure 33-124) in the northern portion of Main Site at TA-33.

2.3 Conceptual Site Model

The sampling proposed in this Phase III work plan uses a conceptual site model to predict areas of potential contamination and to allow adequate characterization of these areas. A conceptual site model describes potential contaminant sources, transport mechanisms, and receptors.

2.3.1 Potential Contaminant Sources

Releases at the sites within the Chaquehui Canyon Aggregate Area may have occurred as a result of firing site and open-burn activities; potential leaks from septic systems, sumps, and associated drainlines;

discharges from outfalls; and contamination from surface and subsurface disposal sites, storage areas, landfills, transformers, and an underground chamber. Previous sampling results indicate contamination from inorganic chemicals, organic chemicals, and radionuclides (N3B 2021, 701606).

2.3.2 Potential Contaminant Transport Mechanisms

Current potential transport mechanisms that may lead to exposure include

- dissolution and/or particulate transport of surface contaminants during precipitation and runoff events,
- airborne transport of contaminated surface soil,
- continued dissolution and advective/dispersive transport of chemical contaminants contained in subsurface soil and tuff as a result of past operations,
- disturbance of contaminants in shallow soil and subsurface tuff by Laboratory operations,
- disturbance and uptake of contaminants in shallow soil by plants and animals, and
- vapor-phase transport of VOCs and tritium in the subsurface.

MDA E at South Site is located near the edge of the mesa near White Rock Canyon. Historically, large landslides have occurred in White Rock Canyon and have encroached on the mesa top. The potential for landslides to result in exposure of the wastes buried at MDA E was studied to determine whether this may be a potential transport mechanism (Reneau et al. 1995, 054405). This study concluded that future exposure of the wastes at MDA E by this mechanism over the period of hundreds to thousands of years is improbable.

2.3.3 Potential Receptors

Potential receptors at one or more of the sites may include

- Laboratory workers,
- construction workers, and
- plants and animals both on-site and in areas immediately surrounding the sites.

Laboratory and construction workers could potentially be exposed to contaminants in soil, tuff, and sediment by direct contact, ingestion, or inhalation. Ecological receptors may also be exposed to contaminants in soil and sediment.

2.3.4 Cleanup Levels

As specified in the Consent Order, soil screening levels (SSLs) for inorganic and organic chemicals (NMED 2022, 702484) may be used as soil cleanup levels unless they are determined to be impracticable or values do not exist for the current and reasonably foreseeable future land uses. Screening action levels (SALs) may be used as soil cleanup levels for radionuclides (LANL 2015, 600929). Screening assessments compare chemical of potential concern (COPC) concentrations for each site with industrial, residential, and construction worker SSLs and SALs.

The human-health cleanup goals specified in Section VIII of the Consent Order are a target risk of 1×10^{-5} for carcinogens or a hazard index of 1 for noncarcinogens. For radionuclides, the release requirements in DOE Order 458.1 will be met.

As specified in the Consent Order, ecological cleanup levels may be developed using a methodology and values approved by NMED. LANL created a methodology for developing ecological preliminary remediation goals (Eco-PRGs) (LANL 2018, 602891) that was reviewed and approved by NMED (NMED 2018, 602908). The Eco-PRGs may be used as cleanup levels for mitigating unacceptable ecological risk.

2.4 Data Overview

This Phase III investigation work plan summarizes the available decision-level data and presents the conclusions of the Phase II investigation report for Chaquehui Canyon Aggregate Area regarding the nature and extent of contamination at each site (N3B 2021, 701606). In addition, this investigation work plan proposes sampling and analyses for those sites at which the extent of contamination has not been defined and presents a summary of preliminary risk assessment information used to guide sampling and determine sites that require remediation. The data collected during this investigation, along with existing decision-level data, will be used to define nature and extent and perform risk-screening assessments.

Analytical samples described in this work plan have undergone analyses at off-site laboratories. Because analytical practices and documentation of analyses vary in quality and completeness, analytical data presented are either screening-level or decision-level data. Screening-level data are appropriate for applications that require determination only of gross contamination areas and for site characterization. Screening-level data are also used to specify areas where samples should be collected. Decision-level data are used to quantify the nature and extent of releases and to perform risk assessments. Decision-level data presented in this work plan have been validated for such use and provide supporting information for the investigation activities proposed in the work plan.

3.0 SITE CONDITIONS

Surface and subsurface features and geologic characteristics of the Chaquehui Canyon Aggregate Area are described in detail in the Phase II investigation report (N3B 2021, 701606). Conditions at the sites addressed in this Phase III work plan are predominantly influenced by

- a semiarid climate with low precipitation and a high evapotranspiration rate that limits the extent of subsurface moisture percolation and, therefore, the amount of moisture available to transport radionuclides or hazardous waste constituents in the subsurface, and
- a thick, relatively dry, unsaturated (vadose) zone that greatly restricts or prevents downward migration of contaminants to the regional aquifer.

These and other elements of the environmental setting in the Chaquehui Canyon Aggregate Area are considered when the investigation data are evaluated with respect to the fate and transport of contaminants.

4.0 SITE DESCRIPTIONS AND PROPOSED INVESTIGATION ACTIVITIES

4.1 SWMUs 33-001(a–e), MDA E

SWMUs 33-001(a–e) are collectively referred to as MDA E and consist of waste disposal pits and an underground test chamber (Figure 4.1-1). SWMUs 33-001(a–d) are abandoned waste disposal pits 1 through 4 and SWMU 33-001(e) consists of an underground test chamber (former structure 33-29), underground elevator shaft (former structure 33-3), and a portable cable building (former structure 33-30). The test chamber and shaft were abandoned in place in April 1950 and use of the disposal pits ceased in 1963. Two additional pits (pits 5 and 6) are located within the fenced area of MDA E. There is no documentation indicating that pits 5 and 6 were ever used, and they are not designated as SWMUs or AOCs. MDA E was operational from 1949 to 1956, occupies an area measuring approximately 140 ft long × 220 ft wide, and was enclosed by an 8-ft-high chainlink fence. Based upon 1962 recommendations, radiation control area signs were posted around the fenced sides of MDA E, pit 2 was covered with approximately 2 ft of dirt, and all excess equipment and debris were removed from the site (Rogers 1977, 005708, p. E-5). Most vegetation including trees, shrubs, and grasses, were removed during the 2021–2022 GPR surveys conducted within and around MDA E (Appendix C). Because of the close proximity of the five SWMUs that compose MDA E [SWMUs 33-001(a–e)], the site descriptions and operational histories for all five SWMUs at MDA E are presented in section 4.1.1, summaries of previous investigations are presented in section 4.1.2, summaries of nature and extent and risk are presented in section 4.1.3, and the proposed activities are presented in section 4.1.4.

4.1.1 Site Description and Operational History

4.1.1.1 SWMU 33-001(a), Disposal Pit

SWMU 33-001(a), disposal pit 1, is located inside the western edge of the fenced area of MDA E (Figure 4.1-1). According to the 1990 SWMU Report (LANL 1990, 007513), waste disposal pit 1 measures approximately 15 ft wide × 75 ft long × 7 ft. However, the geophysical anomalies depicted in Figure A-9 of the 2023 TA-33 MDA E Inner AOC Site Geophysical Investigation Report (Collier Geophysics 2023, 702838) indicate waste may have been buried in an area measuring approximately 81 ft long × 16 ft wide (Appendix C). Historical documentation indicates pit 1 contains polonium- and beryllium-contaminated targets. Disposal pit 1 may also contain spent projectiles, uranium components, beryllium, and explosive test shot debris. Pit 1 was active from 1948 to 1951 and was backfilled and compacted in 1963 (Rogers 1977, 005708, p. E-1).

4.1.1.2 SWMU 33-001(b), Disposal Pit

SWMU 33-001(b), disposal pit 2, is located along the southern edge of the fenced area of MDA E (Figure 4.1-1). According to the 1990 SWMU Report (LANL 1990, 007513), waste disposal pit 2 measures approximately 45 ft long × 15 ft wide × 7 ft deep. However, the geophysical anomalies depicted in Figure A-9 of the 2023 TA-33 MDA E Inner AOC Site Geophysical Investigation Report indicate waste may have been buried in an area measuring approximately 100 ft long × 50 ft wide (Appendix C). The 1977 report “History and Environmental Setting of LASL Near-Surface Land Disposal Facilities for Radioactive Wastes (Areas A, B, C, D, E, F, G, and T)” Volume I (Rogers 005707) indicates that pit 2 contains explosive test shot debris, spent explosive devices, and 60 curies of radioactive material. According to engineering drawing R 3644 (LASL Date Unknown, 023309) and Volume II of the 1977 Rogers report, pit 2 was open in July 1950 and was backfilled sometime during 1963 (Rogers 005708, p. E-1).

4.1.1.3 SWMU 33-001(c), Disposal Pit

SWMU 33-001(c), disposal pit 3, is located near the southeast corner of the fenced area of MDA E (Figure 4.1-1). According to the 1990 SWMU Report (LANL 1990, 007513), waste disposal pit 3 was excavated by hand, measured approximately 5 ft in diameter by 7 ft deep, and is located within the southeast corner of MDA E as shown on engineering drawing ENG-R 3644 (023309, p. 9 of 15). However, the geophysical anomalies depicted in Figure A-9 of the 2023 TA-33 MDA E Inner AOC Site Geophysical Investigation Report indicate waste may have been buried in a larger area than described in the 1990 SWMU Report, measuring approximately 10 ft in diameter (Appendix C). The current boundary depicted in Figure 4.1-1 measures 10 ft in diameter. Pit 3 reportedly contains a can of beryllium dust immersed in kerosene (Rogers 1977, 005708, p. E-1) and may have contained other explosive test shot debris. Pit 3 was active from 1949 to 1951 and was backfilled and compacted in 1963.

4.1.1.4 SWMU 33-001(d), Disposal Pit

SWMU 33-001(d), disposal pit 4, is located along the east fenceline of MDA E (Figure 4.1-1). According to the 1990 SWMU Report (LANL 1990, 007513), waste disposal pit 4 measured approximately 100 ft long × 15 ft wide and is located within the eastern portion of MDA E as shown on engineering drawing ENG-R 3644 (023309, p. 9 of 15). However, the geophysical anomalies depicted in Figure A-9 of the 2023 TA-33 MDA E Inner AOC Site Geophysical Investigation Report show that waste may have been buried in a larger area measuring approximately 115 ft long × 16 ft wide (Appendix C). Historical documentation indicates Pit 4 contains explosive test shot debris, a spent explosives device, and miscellaneous radioactive material (Rogers 1977, 005708, p. E-1). According to the Rogers report (1977, 005708, p. E-1), pit 4 was active from 1949 to 1963 and was backfilled and compacted in 1963.

4.1.1.5 SWMU 33-001(e), Soil Contamination from Underground Chamber and Shaft

SWMU 33-001(e) consists of an underground chamber, designated chamber 3 (structure 33-29), and an associated underground elevator shaft (structure 33-3) (Figure 4.1-1). A portable cable building (former building 33-30) was attached to the elevator shaft and housed electrical and ventilation equipment for both the chamber and the shaft. These structures were located just northwest of the center portion of MDA E. The chamber and shaft were constructed between 1949 and 1950. Chamber 33-29 was located underneath a concrete pad that measures 45 ft long × 20 ft wide. The chamber was constructed of 2-ft-thick concrete walls, and measured 11 ft long × 14 ft wide. The chamber was situated 46 ft below ground surface (bgs). The elevator shaft was constructed of wood, iron, and concrete, and its dimensions were 6 ft long × 8 ft wide × 60 ft tall. The bottom of the shaft was 48 ft bgs. Chamber 33-29 was used to conduct tests involving explosives, beryllium, and tungsten (LANL 1992, 007671, p. 3-51). The Chamber collapsed during an experiment conducted in April 1950 and was abandoned in place. Engineering drawing ENG-R 152, Rev. 4 (LASL 1952, 095136.28) indicates the portable cable building (former building 33-30) was relocated outside of the former fenced area of MDA E in 1952. The portable cable building was permanently removed by 1954. The aboveground portion of the former elevator shaft was removed at an unknown date.

4.1.2 Summary of Previous Investigations

In 1982 and 1983, the Laboratory Environmental Surveillance Program conducted surface and subsurface sampling at MDA E; additional subsurface sampling was conducted in 1989 (LANL 1992, 007671, pp. 3-55–3-60). These sampling efforts were undertaken to determine whether releases from MDA E had occurred. Data from samples collected at MDA E in 1982, 1983, and 1989 are screening-level data and summarized below.

In 1982, samples were collected from two 50-ft boreholes located outside the MDA E fence at multiple depth intervals and submitted for analysis of tritium, total uranium, and cesium-137. Tritium was detected, but these results were suspect because of the low moisture content of the samples. Uranium was detected above the background value (BV) and cesium-137 was detected slightly above the fallout value (FV). In 1983, 90 samples were collected within the MDA E fence from 45 random locations on a 30-ft × 30-ft sampling grid. Samples were submitted for analysis of tritium, total uranium, and cesium-137. Uranium was detected above the BV, cesium-137 was detected above the FV, and tritium was detected but has no BV or FV. In 1989, 19 samples were collected from 6 boreholes advanced within the MDA E fence to depths ranging from 9 ft to 59 ft bgs. Samples were submitted for analysis of tritium, total uranium, and lead. Tritium was detected, and lead and uranium were detected above BVs. These data were not used to evaluate the nature and extent of contamination.

During the 1996 Phase I Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) conducted at SWMU 33-001(a), four samples were collected from one borehole drilled approximately 15 ft south of the south end of disposal pit 1 within the fenced area around MDA E. Samples were submitted for analysis of HE, target analyte list (TAL) metals, VOCs, semivolatile organic compounds (SVOCs), gamma-emitting radionuclides, isotopic plutonium, and tritium. Data from the 1996 Phase I RFI meet data-validation standards and are decision-level data.

During the 2019–2020 investigation, sampling was performed outside the fenced area of MDA E to determine whether releases from the disposal pits and underground chamber had occurred and if the site posed unacceptable risks or doses under current conditions outside the fenced area. Seven samples each were collected from five boreholes located outside the fenced area but adjacent to edge of SWMUs 33-001(a–e). Boreholes were drilled to 70 ft bgs and samples were collected every 10 ft. All samples were analyzed at off-site fixed laboratories for TAL metals, cyanide, nitrate, perchlorate, VOCs, SVOCs, explosive compounds, isotopic uranium, isotopic plutonium, tritium, and gamma-emitting radionuclides. In addition, one or two samples from each boring was analyzed for PCBs. No investigation to characterize the nature of the wastes in the disposal pits was performed.

During the 2021 Phase II investigation, 90 samples were collected from 45 locations outside the MDA E fenced area. Surface samples (0.0 to 0.5 ft bgs) and shallow subsurface samples (typically 1.0–1.5 ft bgs) were collected at each location. All samples were analyzed at off-site fixed laboratories for TAL metals, cyanide, nitrate, perchlorate, pH, explosive compounds, isotopic uranium, isotopic plutonium, tritium, and gamma-emitting radionuclides. The proposed surface and subsurface sampling at 9 locations inside the MDA E fenced area was not completed during this sampling event because of access restrictions. However, on July 8, 2021, Triad authorized access inside the MDA E fenced area for walkover surveys and sampling to depths no greater than 18 in., and the samples will be collected as part of the Phase III investigation (Section 4.1.4).

During the fall of 2021, a radiological survey was conducted within the MDA E fence and on the mesa top outside the fence to identify any possible radiological contamination from the period when the pits were open. The radiological survey results identified 22 areas with possible radiological contamination. During the summers of 2021 and 2022, geophysical surveys were conducted within the MDA E fence on the mesa top outside the fence to define disposal pit boundaries and the depth of cover material inside the MDA E fence. The geophysical survey results and additional historical documentation determined that adjustments to the SWMU boundaries were warranted, except for SWMU 33-001(c). The boundaries for the other four SWMUs associated with MDA E were updated in June 2023. The radiological and geophysical walkover survey results are presented in Appendix C.

4.1.3 Nature and Extent of Contamination and Risk

Based on the sampling results presented in the Phase II investigation report (N3B 2021, 701606), the lateral and vertical extent of inorganic, organic, and radionuclide COPCs are defined or no further sampling for extent is warranted for the area characterized outside the MDA E fence at SWMUs 33-001(a–e). Additional sampling is required to define the nature and extent of potential contamination for SWMUs 33-001(a–e) inside the MDA E fence.

Human health and ecological risk assessments for SWMUs 33-001(a–e) were not presented in the Phase II investigation report because the nature and extent of contamination inside the MDA E fence have not been defined (N3B 2021, 701606).

4.1.4 Proposed Activities at SWMUs 33-001(a–e), MDA E

The Phase II investigation report recommended additional characterization sampling to define nature and extent of contamination within the MDA E fence (N3B 2021, 701606).

The surface and subsurface sampling at nine locations (1a-1 to 1a-9) inside the MDA E fence proposed in the Phase II work plan (N3B 2021, 701355; NMED 2021, 701546) will be performed as part of the Phase III investigation (Figure 4.1-1). Samples will be collected from the depth intervals of 0.0–0.5 ft bgs and 1.0–1.5 ft bgs. Samples will be analyzed for TAL metals, cyanide, nitrate, perchlorate, pH, explosive compounds, isotopic uranium, isotopic plutonium, tritium, and gamma-emitting radionuclides.

The Phase II work plan proposed surface and subsurface sampling in areas identified by the radiological walkover survey with elevated readings above 2 times background (N3B 2021, 701355; NMED 2021, 701546). Based on the radiological survey results, 22 new sampling locations (1a-10 to 1a-31 in Figure 4.1-1) will be placed at locations identified by the radiological walkover survey with elevated readings above 2 times background. Surface and subsurface samples will be collected from the depth intervals of 0.0–0.5 ft bgs and 1.0–1.5 ft bgs and analyzed for TAL metals, cyanide, nitrate, perchlorate, pH, explosive compounds, isotopic uranium, isotopic plutonium, tritium, and gamma-emitting radionuclides.

Existing data from surface and subsurface samples collected around the perimeter of MDA E indicate no evidence of releases from the disposal pits and underground chamber. The additional surface and shallow subsurface sampling proposed inside the MDA E fenceline and at locations identified in the radiological survey will be used to further determine if any releases occurred when the disposal pits were open.

Proposed sampling locations MDA E are shown in Figure 4.1-1. Table 4.1-1 summarizes the proposed sampling locations, depths, and analytical suites. Triad has not granted authorization to enter the area inside the MDA E fence with mechanical equipment or to collect samples deeper than 18 in.; therefore, sampling of subsurface soil and/or tuff at depths greater than 18 in. is not planned for this investigation. If permission is received to conduct subsurface investigations deeper than 18 in. depth, a minimum of one location will be placed on each side of the anomalies identified by the geophysical surveys and multiple samples will be collected from each location to determine if a release has occurred. Samples will be collected from the depth intervals of 2.0–3.0 ft bgs, 4.0–5.0 ft bgs, 7.0–8.0 ft bgs, 9.0–10.0 ft bgs, and 14.0–15.0 ft bgs. Samples will be analyzed for TAL metals, cyanide, nitrate, perchlorate, pH, VOCs, SVOCs, explosive compounds, isotopic uranium, isotopic plutonium, tritium, and gamma-emitting radionuclides. In addition, 20% of the samples collected will be analyzed for PCBs.

4.2 SWMUs 33-002(a–e), MDA K

MDA K consists of a former septic system and two former seepage pits and associated inlet and outlet drainlines and outfalls that served the former tritium facility (former building 33-86) and a former surface disposal area. MDA K is located in the southeast area of Main Site at TA-33. Six SWMUs are associated with MDA K: SWMUs 33-002(a); 33-002(b); 33-002(c); 33-002(d); 33-002(e); and 33-010(f); however, only five SWMUs are discussed herein because SWMU 33-010(f) was recommended for corrective action complete without controls in the approved investigation report for Chaquehui Canyon Aggregate Area (N3B 2020, 701046; NMED 2021, 701685). Because of the close proximity of the five SWMUs under investigation at MDA K (SWMUs 33-002[a–e]) and the scope of this Phase III investigation work plan, which is to delineate the extent of subsurface VOCs and tritium contamination in pore gas beneath MDA K, the site descriptions and operational histories for all five SWMUs at MDA K are presented in section 4.2.1, the summaries of previous investigations are presented in section 4.2.2, the summaries of nature and extent and risk are presented in section 4.2.3, and the proposed activities are presented in section 4.2.4.

4.2.1 Site Description and Operational History

4.2.1.1 SWMU 33-002(a) – Septic System

SWMU 33-002(a) is the location of a former septic system that served the former tritium facility (former building 33-86) and a nearby guard station (former building 33-90) at Main Site (Figure 4.2-1). The septic system was installed in 1954 east of former building 33-86 and consisted of an 860-gal. septic tank (former structure 33-93), inlet and outlet drainlines, a siphon tank, and an approximately 50-ft long × 100-ft wide drain field. The septic system operated until 1990 when discharges of effluent from the tritium facility ceased; however, the septic system continued to receive effluent from the guard station until the mid-1990s. The principal waste stream received by the septic system was sanitary wastewater from former buildings 33-86 and 33-90. The system also received tritium- and uranium-contaminated liquids associated with operations and other releases from former building 33-86, including two releases of plutonium-contaminated liquid in 1961 (LANL 1992, 007671) (p. 3-19). The SWMU 33-002(a) septic system was removed during the 2005 voluntary corrective action (VCA) implemented at the site (LANL 2010, 110352).

4.2.1.2 SWMU 33-002(b) – Sump

SWMU 33-002(b) consists of a former seepage pit (former structure 33-134) and former inlet drainline that connected sinks and floor drains in former building 33-86 to the former seepage pit at Main Site (Figure 4.2-1). The seepage pit was an unlined, rubble-filled pit that measured 6 ft in diameter and 8 ft deep, with a 3-in.-thick concrete lid. Discharges to the seepage pit began in 1955 when building 33-86 became operational and ceased in 1959 when the seepage pit was backfilled. Wastes discharged to the seepage pit contained organic solvents, including ethanol, methanol, trichloroethene (TCE), benzene, and acetone. Some of these solvents were contaminated with tritium. The SWMU 33-002(b) seepage pit also may have received beryllium, mercury, and DU. The SWMU 33-002(b) seepage pit and inlet and outlet drainlines were removed during the 2005 VCA implemented at the site (LANL 2010, 110352).

After the SWMU 33-002(b) seepage pit was deactivated and disconnected from the building 33-86 waste inlet, the roof drain for building 33-86 was connected to the original SWMU 33-002(b) inlet drainline, and a new 4-in. vitrified clay pipe (VCP) outlet drainline was extended approximately 90 ft east to an outfall [SWMU 33-002(e)] (LANL 2003, 107491). Operations in building 33-86 ceased in 1990 and the building underwent decontamination and decommissioning (D&D) and was demolished in the mid-1990s.

4.2.1.3 SWMU 33-002(c) – Sump

SWMU 33-002(c) is the location of a former seepage pit (former structure 33-133) and associated inlet drainline constructed in 1955 that received discharges from sinks and floor drains in former building 33-86 at Main Site (Figure 4.2-1). The seepage pit was an unlined, rubble-filled pit that was 6 ft in diameter and 8 ft deep with a 3-in.-thick concrete lid. Discharges to the seepage pit ceased in 1959. When the SWMU 33-002(c) seepage pit was deactivated, an outlet drainline for noncontact cooling water from former building 33-86 was extended through the pit and routed approximately 90 ft downslope to create an outfall [SWMU 33-002(d)]. Wastes discharged to the SWMU 33-002(c) seepage pit contained tritium and organic chemical solvents, including TCE, methanol, ethanol, acetone, and propanol (LANL 1992, 007671, p. 3-19). The SWMU 33-002(c) seepage pit and inlet drainline were removed during the 2005 VCA implemented at the site (LANL 2010, 110352).

Operations in building 33-86 ceased in 1990 and the building underwent D&D and was demolished in the mid-1990s. The SWMU 33-002(c) seepage pit and inlet drainline were removed during the 2005 VCA implemented at the site (LANL 2010, 110352).

4.2.1.4 SWMU 33-002(d) – Drainline and Outfall from Former Building 33-86

SWMU 33-002(d) is a former outfall and associated 90-ft outlet drainline that discharged noncontact cooling water from former building 33-86 (Figure 4.2-1). This outfall was created when the SWMU 33-002(c) seepage pit was deactivated and disconnected from the building 33-86 inlet drainline to the sump in 1959 (LANL 1990, 007513). At that time, a 4-in. VCP outlet drainline was attached to the inactive cast iron inlet to former sump 33-133 [SWMU 33-002(c)] and was extended 90 ft to the east of former sump 33-133 to create an outfall for the discharge of noncontact cooling water from former building 33-86 (LANL 2003, 107491). The outfall operated under the Laboratory's National Pollutant Discharge Elimination System permit (Outfall 04A147) until July 11, 1995, when it was removed from the permit. Tritium and metals were potential contaminants in the noncontact cooling water. The 90-ft outlet drainline that discharged to the outfall was removed during the 2005 VCA implemented at the site (LANL 2010, 110352).

4.2.1.5 SWMU 33-002(e) – Drainline and Outfall from Former Building 33-86

SWMU 33-002(e) consists of a former roof drain, drainline, and outfall that served former building 33-86 at Main Site (Figure 4.2-1). After the SWMU 33-002(b) seepage pit was deactivated and disconnected from the building 33-86 waste inlet, the roof drain for building 33-86 was connected to the original SWMU 33-002(b) inlet drainline, and a new 4-in. VCP outlet drainline was extended approximately 90-ft east to an outfall [SWMU 33-002(e)] (LANL 2003, 107491). Storm water discharges from building 33-86 roof drains potentially contained tritium associated with releases from the former building 33-86 air-emission stacks. The drainline was removed during the 2005 VCA implemented at the site (LANL 2010, 110352).

4.2.2 Summary of Previous Investigations

The summary of previous investigations in surface and subsurface soil and rock for SWMUs 33-002(a–e) are presented in the approved investigation report (N3B 2020, 701046; NMED 2021, 701685). The 2019–2020 investigation evaluated the nature and extent of contamination for each SWMU at MDA K and determined the nature and extent of contamination in soil and rock are defined and no further sampling is warranted. Preliminary human health and ecological risk-screening assessments indicate there is no potential unacceptable human health risk or dose under the industrial and construction worker scenarios

and no potential unacceptable risk to ecological receptors at MDA K. All analytical data collected previously for SWMUs 33-002(a–e) are reported and evaluated in the approved 2020 investigation report (NMED 2021, 701685). Sampling to characterize the nature and extent of subsurface tritium contamination in pore gas at MDA K was not performed during the 2019–2020 investigation and was not presented in the approved investigation report. The addendum to the 2020 Chaquehui Canyon Aggregate Area investigation report presents the subsurface tritium investigation sampling results at MDA K, and the results are summarized below (N3B 2021, 701735).

During the Phase I 2020–2021 investigation conducted at MDA K, three boreholes were drilled to depths ranging from 215.9 to 290.0 ft bgs and stainless-steel vapor-monitoring systems with six ports each were installed in each borehole as part of the subsurface tritium investigation at MDA K.

Fifteen tuff samples were collected from the three borehole locations (Figure 4.2-1). At location 33-60938, tuff samples were collected from 18.1 to 19.1 ft bgs, 81.5 to 82.5 ft bgs, 169.15 to 170.15 ft bgs, 217.15 to 218.15 ft bgs, 228.70 to 230.15 ft bgs, and 286.65 to 287.65 ft bgs. At location 33-60939, tuff samples were collected from 55.0 to 56.0 ft bgs, 146.2 to 147.2 ft bgs, 200.0 to 201.0 ft bgs, 211.2 to 212.0 ft bgs, and 214.9 to 215.9 ft bgs. At location 33-60940, tuff samples were collected from 66.95 to 67.95 ft bgs, 165.0 to 166.0 ft bgs, 218.5 to 219.5 ft bgs, and 229.5 to 230.7 ft bgs. All samples were analyzed at off-site fixed laboratories for pH, temperature, and tritium.

Eighteen pore-gas samples were collected from the three borehole locations. At location 33-60938, samples were collected from 19.0 ft bgs, 82.0 ft bgs, 100.0 ft bgs, 170.0 ft bgs, 220.0 ft bgs, and 241.35 ft bgs. At location 33-60939, samples were collected from 56.0 ft bgs, 100.0 ft bgs, 148.0 ft bgs, 193.5 ft bgs, 203.4 ft bgs, and 213.4 ft bgs. At location 33-60940, samples were collected from 30.0 ft bgs, 68.0 ft bgs, 100.0 ft bgs, 166.0 ft bgs, 217.5 ft bgs, and 228.2 ft bgs. All samples were analyzed at off-site fixed laboratories for VOCs and tritium.

No investigation activities were conducted at MDA K during the 2022 Phase II investigation.

4.2.3 Nature and Extent of Contamination and Risk

Based on the sampling results presented in the addendum to the 2020 investigation report (N3B 2021, 701735), the extent of contamination in pore gas beneath MDA K is not defined and further characterization is required to determine the following:

- the lateral extent of VOC contamination in pore gas, which has not been defined in the central part of MDA K, adjacent to areas where releases occurred (Figure 4.2-2 and Table 4.2-1),
- the extent of the tritium contamination in deep subsurface tuff at location 33-60939 (Figure 4.2-3 and Table 4.2-2), and
- the extent of the tritium contamination in pore gas (Figure 4.2-4 and Table 4.2-3).

Existing pore-gas data show the concentrations of VOCs in pore gas are well below the Tier 1 pore-gas screening concentrations and tritium activities in pore gas are below the Tier I pore-gas maximum contaminant level (N3B 2021, 701735).

4.2.4 Proposed Activities at MDA K

The 2021 addendum to the investigation report recommended the drilling and installation of three additional vapor-monitoring systems to define the extent of the VOC and tritium contamination in pore gas associated with MDA K (N3B 2021, 701735). The addendum also recommended a second round of

pore-gas sampling for tritium and VOC analysis from existing vapor monitoring well locations 33-60938, 33-60939, and 33-60940. In accordance with NMED draft comments to the 2021 addendum to the investigation report, a fourth borehole will be drilled southeast and northeast of existing locations 33-60939 and 33-60940.

Six tritium and six VOC pore-gas samples will be collected from existing monitoring well location 33-60938 from sample ports 1 through 6 (19.0 ft bgs, 82.0 ft bgs, 100.0 ft bgs, 170.0 ft bgs, 220.0 ft bgs, and 241.35 ft bgs, respectively).

Six tritium and six VOC pore-gas samples will be collected from existing monitoring well location 33-60939 from sample ports 1 through 6 (56.0 ft bgs, 100.0 ft bgs, 148.0 ft bgs, 193.5 ft bgs, 203.4 ft bgs, and 213.4 ft bgs, respectively).

Six tritium and six VOC pore-gas samples will be collected from existing monitoring well location 33-60940 from sample ports 1 through 6 (30.0 ft bgs, 68.0 ft bgs, 100.0 ft bgs, 166.0 ft bgs, 217.5 ft bgs, and 228.2 ft bgs, respectively).

Four new borehole locations (BH-1, BH-2, BH-3, and BH-4 in Figure 4.2-1) will be advanced at MDA K and completed as vapor monitoring wells (Figure 4.2-1). BH-1 will be advanced north of the SWMU 33-002(d) outfall, BH-2 will be advanced south of the SWMU 33-002(b) seepage pit, BH-3 will be advanced southeast of location 33-60939, and BH-4 will be advanced east of and between existing vapor monitoring well locations 33-60939 and 33-60940. Each boring will be drilled to a depth of 10 ft into the Cerros del Rio Basalt (estimated depth of the Cerros del Rio Basalt is 255 ft bgs). Each boring will be logged to identify geologic contacts, fractures, or other features of interest. Rock samples may be collected depending on the drilling technology used to reach the required sampling depths. If feasible, rock samples will be collected at the base of each geologic unit; at fractures, if encountered during drilling; and at the bottom of the boring corresponding to the likely depths of the pore-gas sample ports. Rock samples collected during drilling will be analyzed for tritium to determine if there is any correlation between tritium activity in rock and tritium activity in pore gas. The depth of pore-gas sample ports will be determined after a detailed review of the geologic log is conducted. Nominally, a minimum of six sample ports in each well will be placed at the base of each geologic unit encountered during drilling to monitor the contact between the two units, at the bottom of the borehole, and other locations of geologic interest, which is consistent with the construction of vapor monitoring well locations 33-60938, 33-60939, and 33-60940.

Following drilling, tuff sampling, and selection of pore-gas sampling port depths, a permanent stainless-steel vapor-monitoring system will be installed in each borehole. The following general guidelines shall be used to construct each system.

- Boreholes will be drilled to total depth and logged by a geologist to identify geologic contacts. Samples will be collected at the base of each geologic unit encountered and at the borehole total depth.
- A stainless-steel vapor-monitoring system will be installed at each location.
- Each vapor port will be measured and banded every 20 ft to a stainless-steel drop pipe and installed inside the boring or casing following the methods below:
    - ❖ Connect the 0.25-in.- wide × 6-in.-long cylindrical stainless-steel screen to 0.25-in. stainless-steel tubing.
    - ❖ Place the 0.25-in.-wide × 6-in.-long cylindrical stainless-steel screen at the appropriate depth and secure using stainless-steel banding to the drop pipe.

  - ❖ Lower the sample system into borehole and continue to add drop pipe and sample ports until all sample ports are installed.
  - ❖ Maintain the well under tension in the center of the augers while annular fill materials are added.
- In each borehole, 5 ft of sand will be placed to surround the screen.
- Bentonite will be placed above the 5-ft sand interval in lifts and hydrated.
- Drilling team will employ a suitable method to keep the boring open as port installation and backfilling with annular material is progressed.
- The above steps will be repeated for installing additional vapor-monitoring ports based on geological logging results.

Following installation of the vapor-monitoring systems, pore-gas samples will be collected from each port and analyzed for tritium and VOCs.

Proposed sampling locations for MDA K are shown in Figure 4.2-1. Table 4.2-4 summarizes the proposed sampling locations, depths, and analytical suites.

4.3 SWMU 33-004(a), Septic System

4.3.1 Site Description and Operational History

SWMU 33-004(a) is an active septic system consisting of a septic tank (structure 33-31), associated inlet and outlet drainlines, three manholes, two seepage pits, and a drain field in the northwest portion of Main Site (Figure 4.3.1). The septic tank has a capacity of 1360 gal. and is located 50 ft northeast of building 33-39. This septic tank is in use and serves all major buildings at the TA-33 Main Site at the north end of TA-33. Septic tank 33-31 received sanitary wastewater from a laboratory/office building (33-19) and a storage building (33-27). Industrial liquid wastes from building 33-19 were discharged to a separate outfall. Septic tank 33-31 discharged to a 90-ft-long × 80-ft-wide drain field located approximately 200 ft northeast of the septic tank. This drain field was constructed of rows of 4-in. vitrified-clay tiles spaced approximately 10 ft apart. In 1951, the septic system was redesigned to accept industrial wastes from laboratories in buildings 33-19, 33-113, and 33-114 and from the machine shop in building 33-39. Two 4-ft-diameter × 50-ft-deep gravel-filled seepage pits were constructed to receive the discharge from septic tank 33-31, and the drain field was disconnected and removed from service. The seepage pits continue to receive the effluent from the septic tank. Components of the SWMU 33-004(a) septic system are shown in engineering drawings AB1114 (2 of 7) (LANL 2006, 110681) and ENG C-25512 (LASL 1958, 107488).

A 1992 study of drains and discharges at TA-33 identified the following sources of discharges to this septic system: restrooms, water fountains, showers, laboratory floor drains and sink drains in building 33-19; janitor's closet sink drains in buildings 33-19 and 33-113; a floor drain in a shop in building 33-39; a sink drain in a shop in building 33-113; and roof drains from building 33-19 (Santa Fe Engineering Ltd. 1992, 062036, Tables 2, 6, 7, and 13). The specific materials discharged to these drains are not well documented.

A 1954 memorandum mentions occurrences of mercury spills in the electronics laboratory in building 33-19, and spilled mercury could potentially have been released to the drains (Jordan 1954, 007918). The shop in building 33-113 was primarily used to machine uranium but was also used for processing plastics and spray-painting (Hyatt 1956, 007929).

4.3.2 Summary of Previous Investigations

During the 1993 Phase I RFI conducted at SWMU 33-004(a), one sludge sample and one liquid sample were collected from septic tank 33-31 and submitted for analysis of TAL metals, SVOCs, VOCs, uranium, tritium, and gamma-emitting radionuclides (LANL 1995, 071300). One surface sample and two subsurface samples were collected from one borehole drilled to a depth of 15 ft bgs next to the septic tank. Samples were submitted for analysis of TAL metals, SVOCs, tritium, uranium, and gamma-emitting radionuclides. The two subsurface samples were also analyzed for VOCs. One borehole was drilled next to each seepage pit to a depth of 50 ft, and four samples were collected at four depths from each of these boreholes. Samples were submitted for analysis of TAL metals, SVOCs, VOCs, tritium, and gamma-emitting radionuclides, and all but one of the samples were also analyzed for uranium. Four surface and two subsurface samples were collected from random locations in the drain field and submitted for analysis of TAL metals, SVOCs, uranium, tritium, and gamma-emitting radionuclides. Two surface samples were also analyzed for herbicides, pesticides, and PCBs, and the subsurface samples were also analyzed for VOCs. Data from the 1993 Phase I RFI are screening-level data and showed numerous inorganic chemicals detected above BVs; numerous detected organic chemicals including VOCs, SVOCs polycyclic aromatic hydrocarbons (PAHs), and Aroclor-1254; and cesium-137 and tritium detected above FVs. These data were not used to evaluate the nature and extent of contamination.

In 1994, 4 additional samples were collected from the drain field at SWMU 33-004(a) to better characterize potential releases (LANL 1995, 071300). These subsurface samples were collected at joints in the vitrified-clay tiles and submitted for analysis of TAL metals, SVOCs, VOCs, tritium, uranium, and gamma-emitting radionuclides. Data from the 1994 sampling are screening-level data and showed numerous inorganic chemicals detected above BVs, 17 detected organic chemicals (primarily SVOCs/PAHs), and cesium-137 and tritium detected above FVs. These data were not used to evaluate the nature and extent of contamination.

In 1997, the Laboratory's Environmental Restoration (ER) Project collected one soil sample at each of three locations (below the tank, under the inlet, and under the outlet). Samples were submitted for analysis of TAL metals and VOCs (Michelotti and Kidman 1997, 074002). Data from the 1997 sampling event meet data-validation standards and are decision-level data.

During the 2019–2020 investigation, 10 samples were collected from 5 locations beneath septic system structures to determine extent. At each location, samples were collected from 2 depths below the structures. A total of 14 samples were collected from 2 locations drilled next to 2 active seepage pits. At each location, samples were collected from 7 depths. A total of 24 samples were collected from 8 locations within the inactive drain field in order to determine extent. At each location samples were collected from 3 depths below the drainpipes. All samples were analyzed at off-site fixed laboratories for TAL metals, cyanide, perchlorate, nitrate, VOCs, SVOCs, isotopic uranium and isotopic plutonium. In addition, 12 samples were analyzed for PCBs.

During the 2019–2020 investigation, the sampling crew potholed in the drain field and determined the individual tile drainlines were 10 ft apart from each other. Additional trenching was conducted to the east and west of the drainlines and no evidence of additional drainlines was found. The drainlines are shown in Figure 4.3-1.

During the 2021 Phase II investigation, 6 samples were collected at deeper depth intervals from existing locations 33-60595, 33-60597, and 33-60599 to define the vertical extent of PCBs. At existing locations 33-60590, 33-60592, and 33-60597, 3 samples were collected at deeper depth intervals to define the vertical extent of PAHs. A total of 12 samples were collected from 4 new locations within the portion of the drain field that had not been previously sampled to define the nature and extent of potential contamination

in this area. Samples were collected from 3 depths beneath the pipes at each location. Samples were analyzed at off-site fixed laboratories for TAL metals, cyanide, nitrate, perchlorate, SVOCs, VOCs, PCBs, isotopic uranium, isotopic plutonium, tritium, and gamma-emitting radionuclides. At 1 new location east of the eastern seepage pit, 3 samples were collected to define the vertical and lateral extent of potential contamination. Samples were collected over the interval of 5.0 ft bgs to 19.8 ft bgs. Samples were analyzed at off-site fixed laboratories for TAL metals, cyanide, nitrate, perchlorate, SVOCs, VOCs, PCBs, isotopic uranium, isotopic plutonium, tritium, and gamma-emitting radionuclides. At 2 new locations north of location 33-60595, 6 samples were collected to define the lateral extent of PCBs. Samples were collected from 3 depths beneath the pipes at each location. A total of 48 samples were collected from 16 new locations around existing locations 33-60596 and 33-60597 to define the vertical and lateral extent of mercury. Samples were collected from 3 depths beneath the drain pipes at each location and analyzed at an off-site fixed laboratory for mercury. A total of 15 samples were collected from 5 new locations around existing location 33-60597 to define the vertical and lateral extent of PCBs. Samples were collected from 3 depths beneath the drain pipes at each location and analyzed at an off-site fixed laboratory for PCBs. A total of 27 samples were collected from 9 new locations around existing location 33-60601 to define the vertical and lateral extent of PAHs. Samples were collected from 3 depths beneath the drain pipes at each location and analyzed at an off-site fixed laboratory for PAHs.

During the Phase II investigation conducted at SWMU 33-004(a), corrective actions to address potential unacceptable human-health and ecological risk were performed by removing soil with elevated mercury concentrations at location 33-60596, PAHs at location 33-60601, and PCBs at location 33-60597. Approximately 9.8 yd^3 of contaminated environmental media was removed.

4.3.3 Nature and Extent of Contamination and Risk

Based on the sampling results presented in the Phase II investigation report (N3B 2021, 701606), nature and extent of contamination have been defined and/or no further sampling for extent is warranted at SWMU 33-004(a), except for the following:

- lateral extent of lead east of the drain field (Plate 3 and Table 4.3-1) and
- lateral extent of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene south of locations 33-60599, 33-60600, 33-60602, and 33-60961 (Plate 4 and Table 4.3-2).

Human health and ecological risk-screening assessments for SWMU 33-004(a) were not presented in the Phase II investigation report because the nature and extent of contamination have not been defined for the site (N3B 2021, 701606). However, preliminary human health risk-screening assessments indicate there is no potential unacceptable human health risk or dose under the construction worker scenario and no potential unacceptable risk to ecological receptors at SWMU 33-004(a). The industrial scenario was not considered in the preliminary risk screening because the analytical data did not include data from 0.0–1.0 ft bgs.

4.3.4 Proposed Activities at SWMU 33-004(a)

The Phase II investigation report recommended additional characterization sampling to define nature and extent of contamination at SWMU 33-004(a) (N3B 2021, 701606).

Five new locations (4a-1, 4a-2, 4a-3, 4a-4, and 4a-5) will be placed 5 ft around location 33-60964 and 10 ft east of location 33-60964 to define the lateral extent of lead and extent of potential contamination east of the drain field (Figure 4.3-1). Samples will be collected from 1.6–2.6 ft bgs, 3.6–4.6 ft bgs, and

5.6–6.6 ft bgs, corresponding to the depth intervals sampled during the 2019–2020 investigation. Samples will be analyzed for lead.

Four new locations (4a-6, 4a-7, 4a-8, and 4a-9) will be placed 5 ft north, south, east, and west of existing location 33-60599 to define the lateral extent of PAHs (Figure 4.3-1). Samples will be collected from 1.5–2.5 ft bgs, 3.5–4.5 ft bgs, and 5.5–6.5 ft bgs, corresponding to the depth intervals sampled during the 2019–2020 investigation. Samples will be analyzed for PAHs.

Four new locations (4a-10, 4a-11, 4a-12, and 4a-13) will be placed 5 ft north, south, east, and west of existing location 33-60961 to define the lateral extent of PAHs (Figure 4.3-1). Samples will be collected from 2.1–3.1 ft bgs, 4.1–5.1 ft bgs, and 6.1–7.1 ft bgs, corresponding to the depth intervals sampled during the 2019–2020 investigation. Samples will be analyzed for PAHs.

Four new locations (4a-14, 4a-15, 4a-16, and 4a-17) will be placed 5 ft north, south, east, and west of existing location 33-60600 to define the lateral extent of PAHs (Figure 4.3-1). Samples will be collected from 2.2–3.2 ft bgs, 4.2–5.2 ft bgs, and 6.2–7.2 ft bgs, corresponding to the depth intervals sampled during the 2019–2020 investigation. Samples will be analyzed for PAHs.

One new location (4a-18) will be placed 5 ft from the end of the second drainline south of existing location 33-60598 to define lateral extent of PAHs south of the drain field (Figure 4.3-1). Samples will be collected from 1.9–2.9 ft bgs, 3.9–4.9 ft bgs, and 5.9–6.9 ft bgs, corresponding to the depth intervals sampled during the 2019–2020 investigation. Samples will be analyzed for PAHs.

Four new locations (4a-19, 4a-20, 4a-21, and 4a-22) will be placed 5 ft north, south, east, and west of existing location 33-60602 to define the lateral extent of PAHs (Figure 4.3-1). Samples will be collected from 1.9–2.9 ft bgs, 3.9–4.9 ft bgs, and 5.9–6.9 ft bgs, corresponding to the depth intervals sampled during the 2019–2020 investigation. Samples will be analyzed for PAHs.

One new location (4a-23) will be placed 5 ft from the end of the sixth drainline south of existing location 33-60961 to define lateral extent of PAHs south of the drain field (Figure 4.3-1). Samples will be collected from 2.1–3.1 ft bgs, 4.1–5.1 ft bgs, and 6.1–7.1 ft bgs, corresponding to the depth intervals sampled during the 2019–2020 investigation. Samples will be analyzed for PAHs.

Proposed sampling locations for SWMU 33-004(a) are shown in Figure 4.3-1. Table 4.3-3 summarizes the proposed sampling locations, depths, and analytical suites.

4.4 SWMU 33-004(i), Drainline and Outfall Associated with Building 33-39

4.4.1 Site Description and Operational History

SWMU 33-004(i) consists of two inactive drainlines and outfalls associated with a former machine shop (building 33-39) located near the east side of Main Site (Figure 4.4-1). Construction of building 33-39 was completed in 1951. The building housed a welding and soldering bench that used cadmium and silver, a lead-melting facility, a beryllium-machining room, and a sand blaster. Cadmium, uranium, stainless steel, and polystyrene plastic also were machined in the building. Machine shop operations in building 33-29 ceased in the late 1990s. Floor drains in the building were tied into two 4-in.-diameter VCPs that discharged to outfalls east of building 33-39. The northernmost of the two outfalls is located approximately 30 ft east of the building, and the southern outfall is located approximately 40 ft east of the building. However, the sources of the discharges to these outfalls cannot be confirmed because a study of building drains at TA-33 confirmed that all wastewater discharges from building 33-39 are connected to the SWMU 33-004(a) septic system (Santa Fe Engineering, 1992, 062036, p. 7). The 1990 SWMU report

confirms that the SWMU 33-004(a) septic system received discharges from building 33-39 beginning in 1951 (LANL 1990, 007513).

4.4.2 Summary of Previous Investigations

During the 1993 Phase I RFI conducted at SWMU 33-004(i), a geophysical survey was performed and the drainlines and outfalls east of building 33-39 were located. Six samples were collected at each outfall and at two locations in the drainages downstream of each outfall. Samples were submitted for analysis of TAL metals, SVOCs, herbicides, pesticides, tritium, total uranium, and gamma-emitting radionuclides. Data from the 1993 Phase I RFI are screening-level data and showed inorganic chemicals detected above BVs and detected organic chemicals (PAHs). Radionuclides were not detected or detected above BVs/FVs. These data were not used to evaluate the nature and extent of contamination.

During the 2019–2020 investigation, a total of 29 samples were collected from 6 previous RFI locations and 4 new locations downgradient of the outfalls. At each location, samples were collected from depth intervals of 0.0–1.0 ft, 2.0 or 2.3–3.0 ft, and 4.0–5.0 ft bgs. All samples were analyzed at off-site fixed laboratories for TAL metals, cyanide, nitrate, perchlorate, VOCs, SVOCs, and isotopic uranium. In addition, 5 samples were analyzed for PCBs.

During the 2021 Phase II investigation conducted at SWMU 33-004(i), 11 samples were collected from existing locations 33-01055, 33-01057, 33-01058, 33-01059, and 33-01060 to define the vertical extent of PCBs. At each location samples were collected from near the shallow subsurface and from the subsurface. All samples were analyzed at off-site fixed laboratories for PCBs. A total of 35 samples were collected from 7 new locations around existing location 33-01058 to define the lateral extent of PCBs. At each location, samples were collected from the surface and the subsurface. All samples were analyzed at an off-site fixed laboratory for PCBs.

Corrective actions to address potential unacceptable human-health risk were performed during the Phase II investigation by removing approximately 14.25 yd^3 of soil with elevated PCB concentrations at location 33-01058. Two confirmation samples were collected to define the vertical extent of PCBs. Samples were analyzed at an off-site fixed laboratory for PCBs.

4.4.3 Nature and Extent of Contamination and Risk

Based on the sampling results presented in the Phase II investigation report (N3B 2021, 701606), nature and extent of contamination have been defined or no further sampling for extent of contamination is warranted at SWMU 33-004(i), except for the following:

- lateral extent of Aroclor-1254 and Aroclor-1260 north of location 33-60990 (Plate 5 and Table 4.4-1).

Human health and ecological risk-screening assessments for SWMU 33-004(i) were not presented in the Phase II investigation report because the nature and extent of contamination have not been defined for the site (N3B 2021, 701606). However, preliminary human health risk-screening assessments indicate the site still poses potential unacceptable human health risk under two or more risk scenarios. Preliminary ecological risk-screening assessment results indicate there is no potential unacceptable risk to ecological receptors at SWMU 33-004(i).

4.4.4 Proposed Activities at SWMU 33-004(i)

The Phase II investigation report recommended both additional characterization and remediation activities at SWMU 33-004(i) (N3B 2021, 701606). The preliminary risk-screening assessment results were used to guide selection of sample locations and plan remediation activities.

Six new locations (4i-1, 4i-2, 4i-3, 4i-4, 4i-5, and 4i-6) will be placed 5 ft and 10 ft north, south, east, and west of existing location 33-60990 to define the lateral extent of PCBs and to bound the planned excavation around location 33-60990 (Figure 4.4-1). Samples will be collected from the depth intervals of 0.0–1.0 ft bgs, 2.0–3.0 ft bgs, 4.0–5.0 ft bgs, 6.0–7.0 ft bgs, and 8.0–9.0 ft bgs. All samples will be analyzed for PCBs. Additional step-out confirmation samples will be collected to guide excavation activities if elevated PCB concentrations are encountered at these locations.

Four new locations (4i-7, 4i-8, 4i-9, and 4i-10) will be placed near location 33-01058 to define the lateral extent of PCBs and to bound the planned excavation around 33-01058 (Figure 4.4-1). Samples will be collected from the depth intervals of 0.0–1.0 ft bgs, 2.0–3.0 ft bgs, 4.0–5.0 ft bgs, 6.0–7.0 ft bgs, and 8.0–9.0 ft bgs. All samples will be analyzed for PCBs. Additional step-out confirmation samples will be collected to guide excavation activities if elevated PCB concentrations are encountered at these locations.

After the extent of PCB contamination is defined at SWMU 33-004(i), corrective actions to address potential unacceptable human health risk will be performed by removing soil with elevated PCB concentrations to a depth of 6 ft bgs around location 33-60990 and to a depth of 6 to 8 ft bgs around location 33-01058. The exact size and depth of the excavations are not known and will be defined by the collection of additional samples, review of analytical data, and evaluation of risk-screening assessment results before excavation activities begin. No confirmation samples are required at locations 33-60990 and 33-01058 because the vertical extent of contamination is defined by deeper samples previously collected at these two locations.

Before remediation of PCBs, DOE shall submit a request to the U.S. Environmental Protection Agency (EPA) (with a copy to NMED) to manage the waste as PCB remediation waste.

Proposed sampling locations and planned excavation boundaries for SWMU 33-004(i) are shown in Figure 4.4-1. Table 4.4-1 summarizes the proposed sampling locations, depths, and analytical suites.

4.5 SWMU 33-006(a), Firing Site

4.5.1 Site Description and Operational History

SWMU 33-006(a) is an inactive shot pad at South Site where implosion tests were conducted at the southern end of TA-33 (Plate 6). The shot pad is a 50-ft-diameter circular area located immediately north of and next to the roof of structure 33-26, an x-unit chamber (i.e., a control chamber that housed a firing voltage distribution system used for the remote detonation of test firings). The SWMU 33-006(a) shot pad was built in 1948, and the associated support building, known as an x-unit vault (structure 33-26), was constructed in 1950. Implosion tests performed at the shot pad contained up to 5000 lb of HE. Before detonations, wooden boxes covered the assemblages. Use of the site ceased in 1956, and structure 33-26 has remained vacant since then. The detonations conducted at the SWMU 33-006(a) shot pad scattered debris, shrapnel, and wood fragments over the mesa top of South Site and into Chaquehui Canyon. Shrapnel has been found at distances up to a mile away from the shot pad. The shot pad has not been used since 1955 when implosion testing was discontinued at TA-33. Currently, the pad is covered with up to a foot or more of sand (LANL 1995, 051903, p. 58).

4.5.2 Summary of Previous Investigations

During the 1994 Phase I RFI conducted at the SWMU 33-006(a) shot pad and surrounding area, 46 surface soil samples were collected from 42 randomly selected locations across the site. In addition, 11 surface soil samples were collected from 10 locations in the drainage that receives runoff from the site. Samples were submitted for analysis of TAL metals, PCBs, pesticides, herbicides, gamma-emitting radionuclides, and HE. Data from the 1994 Phase I RFI are screening-level data and showed numerous inorganic chemicals detected above BVs; several detected HE; and cesium-137, plutonium-238, plutonium-239/240, and tritium activities detected or detected above FVs. These data were not used to evaluate the nature and extent of contamination.

An interim action (IA) was performed at SWMU 33-006(a) in 1996 to remove contaminated debris within a half-mile radius from the SWMU 33-006(a) shot pad and to prevent the off-site migration from Chaquehui Canyon to the Rio Grande. Firing site shrapnel and debris were removed from mesa-top areas and drainages along the southern rim of Chaquehui Canyon within Bandelier National Monument, from drainage channels along the northern rim of Chaquehui Canyon, and from the canyon bottom. A total of 1261 lb of debris was removed during the IA. Of the total, 770 lb was radioactively contaminated. For waste management purposes, all the debris was screened with an x-ray fluorescence detector to determine whether hazardous metals were present. A total of 20 lb of the debris contained lead and was handled as hazardous waste. Approximately 20 lb of the debris contained lead, was radioactively contaminated, and was handled as mixed waste. The remaining 451 lb of debris was considered nonhazardous and nonradioactive waste and was recycled.

In 1996, eight surface samples (0.0 to 0.5 ft) were collected from eight locations that had been sampled previously during the 1994 Phase I RFI at SWMU 33-006(a) because holding times for the HE analyses had been missed. The eight samples were submitted for analysis of HE. Two organic chemicals, 1,3-dinitrobenzene and 1,3,5-trinitrobenzene, were detected (1.5 mg/kg and 1.9 mg/kg, respectively) in one sample (0333-96-0588) from sampling location 33-01448 in SWMU 33-007(b), directly south of building 33-25. Since 1996, the entire area south of building 33-25 (including former sampling location 33-01448) has been significantly disturbed by the installation of new utilities for the complete renovation of building 33-25. This area was investigated as part of the characterization of SWMU 33-007(b). Although the 1996 data are of decision-level quality, the sampling depths and locations and analytical suites were not sufficient to define the extent of contamination. In addition, the 1996 data may not be representative of current conditions because of disturbance to the site. As a result, the 1996 data were not used to evaluate the nature and extent of contamination.

During the 2019–2020 investigation, 20 samples were collected from 10 locations within and around the former shot pad. At each sampling location, samples were collected from 1 or 2 locations within soil or fill and from 2 locations within the tuff. All samples were analyzed at off-site fixed laboratories for TAL metals, cyanide, nitrate, perchlorate, VOCs, SVOCs, explosive compounds, isotopic uranium, isotopic plutonium, tritium, and gamma-emitting radionuclides. In addition, 6 samples were analyzed for PCBs.

Residual surface debris was removed from SWMU 33-006(a) during the 2019–2020 investigation. A total of 38 pieces of firing site debris was observed, flagged, removed, containerized, and characterized for disposal. Each location was screened for radioactivity, VOCs, and HE (N3B 2020, 701046; NMED 2021, 701685).

During the 2021 Phase II investigation, corrective actions at SWMU 33-006(a) to address potential unacceptable ecological risk were performed by removing soil with elevated copper and di-n-butylphthalate concentrations at location 33-60415. Two samples were collected beneath the excavation to define the vertical extent of di-n-butylphthalate. Samples were analyzed at an off-site fixed

laboratory for copper and di-n-butylphthalate. Sixteen samples were collected from four new locations around location 33-60415 to define the vertical and lateral extent of copper and di-n-butylphthalate. At each location, samples were collected from one or two locations within soil or fill and from two locations within the tuff. All samples were analyzed at an off-site fixed laboratory for copper and di-n-butylphthalate. Soil with elevated copper concentrations was removed at locations 33-60416, 33-60417, and 33-60423. At location 33-60426, samples were collected from the three depths beneath the excavation to define vertical extent of copper. Samples were analyzed at an off-site fixed laboratory for copper. Twelve samples were collected from four 5-ft step out locations around existing location 33-60416 to define the vertical and lateral extent of copper. At each location, samples were collected from one or two locations within soil or fill and from two locations within the tuff and analyzed at an-off-site fixed laboratory for copper. Ten samples were collected from four 5-ft step out locations around existing location 33-60417 to define the vertical and lateral extent of copper. At each location, samples were collected from one or two locations within soil or fill and from two locations within the tuff and analyzed at an-off-site fixed laboratory for copper. Twenty-eight samples were collected from step-out locations around existing location 33-60423 to define the vertical and lateral extent of copper. At each location, samples were collected from one or two locations within soil or fill and from two locations within the tuff. Samples were analyzed at an off-site fixed laboratory for copper. Fifteen samples were collected from four locations around existing location 33-60423 to define the vertical and lateral extent of copper. At each location samples were collected from one or two locations within soil or fill and from two locations within the tuff. All samples were analyzed at an off-site fixed laboratory for copper.

During the Phase II investigation, corrective actions to address potential HE contamination were performed by removing soil to 1.0-ft bgs at 11 locations: 33-60945, 33-60946, 33-60947, 33-60948, 33-60949, 33-60950, 33-60951, 33-60952, 33-60953, 33-60954, and 33-60955 in accordance with the approved 2010 IWP, Revision 1 (LANL 2010, 111298.9; NMED 2011, 201242). These locations were selected based on EnSys immunoassay test kit field-screening results for Royal Demolition Explosive (RDX [hexahydro-1,3,5-trinitro-1,3,5-triazine]) and 2,4,6-trinitrotoluene (TNT) conducted during the 2019–2020 investigation. RDX and/or TNT field-screening concentrations exceeded 2 ppm at these locations. A 1-ft × 1-ft area was excavated at each location and samples were collected at the base of the excavation to define the nature and extent of contamination. A total of 22 samples were collected from the 11 locations at 2 depths below the excavation and analyzed at an off-site fixed laboratory for TAL metals, cyanide, nitrate, perchlorate, VOCs, SVOCs, explosive compounds, isotopic uranium, isotopic plutonium, and gamma-emitting radionuclides.

During the Phase II investigation, approximately 4.28 yd^3 of contaminated soil was removed from SWMU 33-006(a) to address potential HE contamination and potential unacceptable ecological risk.

4.5.3 Nature and Extent of Contamination and Risk

Based on the sampling results presented in the Phase II investigation report (N3B 2021, 701606), nature and extent of contamination have been defined and/or no further sampling for extent of contamination is warranted at SWMU 33-006(a), except for the following:

- lateral extent of copper around locations 33-60415 and 33-60423 (Plates 6 and 7 and Table 4.5-1).

Human health and ecological risk-screening assessments for SWMU 33-006(a) were not presented in the Phase II investigation report because the nature and extent of contamination have not been defined for the site (N3B 2021, 701606). However, preliminary human health risk-screening assessments indicate

there is no potential unacceptable human health risk or dose under two or more scenarios and no potential unacceptable risk to ecological receptors at SWMU 33-006(a).

4.5.4 Proposed Activities at SWMU 33-006(a)

The Phase II investigation report recommended additional characterization sampling to define nature and extent of copper contamination at SWMU 33-006(a).

Sixteen new locations each (6a-1 through 6a-16 and 6a-17 through 6a-32) will be placed on a 20-ft grid around locations 33-60415 and 33-60423 to determine the nature of extent of contamination (Plate 6). Samples will be collected from the depth intervals of 0.0–1.0 ft bgs and 2.0–3.0 ft bgs and 0.0–1.0 ft and 2.0–3.0 ft into tuff. Samples will be analyzed for copper.

Proposed sampling locations and planned excavation boundaries for SWMU 33-006(a) are shown on Plate 6. Table 4.5-2 summarizes the proposed sampling locations, depths, and analytical suites.

4.6 SWMU 33-008(c), Landfill

4.6.1 Site Description and Operational History

SWMU 33-008(c) is a former surface disposal area located east of Main Site buildings 33-39 and 33-113 outside of the Main Site security fence (Plate 8). This former disposal site consists of two areas: one near a culvert outfall directly east of building 33-39 where glass bottles and other debris were discovered and the other consisting of surface debris situated north of the culvert. The culvert receives stormwater runoff from Main Site and is located in a drainage channel that leads to a tributary of Chaquehui Canyon. Debris observed at the site included machined metal turnings, cables, glass bottles, and general trash on the ground surface and in the channel downstream of the culvert. The outlines of a possible trenched area are visible in aerial photographs from 1958 (USAF 1958, 015987). A small asphalt pad is located at the west end of the northern area and a partially full bottle was present on the ground surface. In 1999, a best management practice (BMP) was performed at the site, during which all visible debris was removed from the watercourse (LANL 2000, 068748, p. 5).

4.6.2 Summary of Previous Investigations

During the 1996 Phase I RFI implemented at SWMU 33-008(c), geophysical surveys using metal detection and electromagnetic induction were conducted at the suspected fill areas. Survey results showed the presence of shallow metallic debris but did not indicate the presence of a landfill or buried debris (LANL 1996, 054963, p. 8). Survey results for the trench area did not identify geophysical anomalies. A total of 21 samples were collected from 13 locations in the surface debris areas and the drainage channel, at the culvert, and 40 ft downgradient of the culvert. The samples were submitted for analysis of TAL metals, cyanide, SVOCs, VOCs, and total uranium (LANL 1996, 054963, p. 6). Data from the 1996 Phase I RFI meet data-validation standards and are decision-level data.

During the 1999 BMP performed at SWMU 33-008(c), all visible debris was removed from the surface disposal area and from the watercourse (LANL 2000, 068748, p. 5). A partially full 55-gal. drum of debris was removed from the area. Two sediment catchments were constructed within the drainage below the culvert to prevent migration of contaminated sediments. The first catchment was constructed 15 ft below the culvert, and the second was constructed 200 ft below the culvert.

During the 2019–2020 investigation, a total of 12 samples were collected from 6 locations—2 former RFI sample locations and 4 new locations at deeper depths—to determine extent of contamination. At each

location, samples were collected from the surface and from the subsurface. A total of 30 samples were collected from 6 former RFI sample locations and from 4 new locations, downgradient of the area, in order to determine extent. At each location, samples were collected from the surface and from the subsurface. All samples were analyzed at off-site fixed laboratories for TAL metals, cyanide, VOCs, SVOCs, isotopic uranium, isotopic plutonium, tritium, and gamma-emitting radionuclides. In addition, 8 samples were analyzed for PCBs. Residual debris was removed from SWMU 33-008(c) during the 2019–2020 investigation.

During the 2021 Phase II investigation, four deeper samples were collected from existing location 33-01671 to define the vertical extent of antimony, copper, lead, and zinc, and two deeper samples were collected to define the vertical extent of PAHs. Samples were analyzed at an off-site fixed laboratory for antimony, copper, lead, and zinc or PAHs. Fifteen samples were collected from existing locations 33-01672, 33-01679, 33-01680, 33-01681, 33-01682, 33-01684, and 33-60676 to define the vertical extent of PCBs. At each location, samples were collected from the subsurface and analyzed at an off-site fixed laboratory for PCBs. Two samples were collected from existing locations 33-01673 and 33-01674 to define vertical extent of copper, lead, and zinc. At each location, samples were collected from the subsurface and analyzed at an off-site analytical laboratory for copper, lead, and zinc.

Corrective actions at SWMU 33-008(c) to address potential unacceptable human health and ecological risks were performed by removing soil with elevated chromium, copper, lead, mercury, zinc, and PAH concentrations at locations 33-01671, 33-01673, 33-01674, 33-01680, 33-01681, 33-01682, and 33-01684. A total of 72 samples were collected from 24 locations around the perimeter of the excavation to define the vertical and lateral extent of chromium, copper, lead, mercury, zinc, and PAHs. At each location, samples were collected from the surface and subsurface. All samples were analyzed at an off-site analytical laboratory for chromium, copper, lead, mercury, and zinc, and PAHs.

Corrective actions at SWMU 33-008(c) to address potential unacceptable human health and ecological risks were performed by removing soil with elevated copper, lead, and zinc concentrations at location 33-01672. Twelve samples were collected from four new locations around location 33-01672 to define the vertical and lateral extent of copper, lead, and zinc. At each location, samples were collected from the surface and subsurface. All samples were analyzed for copper, lead, and zinc.

Corrective actions at SWMU 33-008(c) to address potential unacceptable human health and ecological risks were performed by removing soil with elevated copper, lead, and zinc concentrations at location 33-01685. Twelve samples were collected from four new locations around existing location 33-01685 to define the vertical and lateral extent of copper, lead, and zinc. At each location, samples were collected from the surface and subsurface and analyzed at an off-site analytical laboratory for copper, lead, and zinc.

In total, approximately 67 yd^3 of contaminated soil and 4 yd^3 of buried landfill debris was removed at SWMU 33-008(c) to address potential unacceptable human health risk and ecological risk.

4.6.3 Nature and Extent of Contamination and Risk

Based on the sampling results presented in the Phase II investigation report (N3B 2021, 701606), nature and extent of contamination have been defined or and/no further sampling for extent is warranted at SWMU 33-008(c), except for the following:

- vertical extent of lead at location 33-61962 (Plate 9 and Table 4.6-1),

- lateral extent of copper north and east of locations 33-61953 and 33-61954 (Plate 9 and Table 4.6-1),
- lateral extent of lead north and east of location 33-61953 and south of location 33-61962 (Plate 9 and Table 4.6-1),
- lateral extent of mercury north and east of location 33-61954 (Plate 9 and Table 4.6-1),
- vertical extent of benzo(b)fluoranthene at locations 33-60676 and 33-61962; however, this is a mistake in the Phase II investigation report. The vertical extent of benzo(b)fluoranthene at locations 33-60676 and 33-61962 is defined (Plate 10 and Table 4.6-2),
- lateral extent of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and dibenz(a,h)anthracene at locations 33-61956, 33-61957, and 33-61958 (Plate 10 and Table 4.6-2), and
- lateral extent of indeno(1,2,3-cd)pyrene at locations 33-61956 and 33-61958 (Plate 10 and Table 4.6-2).

In accordance with the NMED approval with modifications for the Chaquehui Canyon Aggregate Area Phase II investigation work plan, manganese was added to the list of analytes proposed for SWMU 33-008(c) in this Phase III investigation work plan (N3B 2021, 701355; NMED 2021, 701546). Human health and ecological risk-screening assessments for SWMU 33-008(c) were not presented in the Phase II investigation report because the nature and extent of contamination have not been defined for the site (N3B 2021, 701606). However, preliminary human health risk-screening assessments indicate there is no potential unacceptable human health risk or dose under two or more scenarios, but there are potential adverse effects to the earthworm and generic plant at SWMU 33-008(c).

4.6.4 Proposed Activities at SWMU 33-008(c)

The Phase II investigation report recommended both additional characterization and remediation activities at SWMU 33-008(c) (N3B 2021, 701606). The preliminary risk assessment results were used to guide selection of sample locations and plan remediation activities.

Two new locations (8c-1 to 8c-2) will be placed 5 ft and 10 ft north and east of location 33-61953 to define the lateral extent of copper and lead and to bound the planned excavation (Plate 8). Two new locations (8c-25 to 8c-26) will be placed north and west of location 33-61953 to bound the planned excavation to the north and west (Plate 8). Samples will be collected from the depth intervals of 0.0–1.0 ft bgs, 4.0–5.0 ft bgs, and 9.0–10.0 ft bgs. Samples will be analyzed for copper, lead, and manganese. Additional step-out confirmation samples will be collected to guide excavation activities if elevated copper, lead, or manganese concentrations are encountered at these locations.

Two new locations (8c-3 to 8c-4) will be placed 5 ft and 10 ft north and east of location 33-61954 to define the lateral extent of copper and mercury and to bound the planned excavation (Plate 8). Samples will be collected from the depth intervals of 0.0–1.0 ft bgs, 4.0–5.0 ft bgs, and 9.0–10.0 ft bgs. Samples will be analyzed for copper, manganese, and mercury. Additional step-out confirmation samples will be collected to guide excavation activities if elevated copper, manganese, or mercury concentrations are encountered at these locations.

Two new locations (8c-5 to 8c-6) will be placed 5 ft and 10 ft east of location 33-61955 to define the lateral extent of copper, lead, and mercury and to bound the planned excavation east of locations 33-61953 and 33-61954 (Plate 8). Samples will be collected from the depth intervals of 0.0–1.0 ft bgs, 4.0–5.0 ft bgs, and 9.0–10.0 ft bgs. Samples will be analyzed for copper, lead, manganese, and mercury.

Additional step-out confirmation samples will be collected to guide excavation activities if elevated copper, lead, manganese, or mercury concentrations are encountered at these locations.

Seven new locations (8c-7 to 8c-13) will be placed 5 ft and 10 ft east of locations 33-61956, 33-61957, and 33-61958 and 10 ft south of location 33-61958 to define the lateral extent of PAHs at these locations and to bound the planned excavation for copper, lead, and mercury on the east side of the landfill (Plate 8). Samples will be collected from the depth intervals of 0.0–1.0 ft bgs, 4.0–5.0 ft bgs, and 9.0–10.0 ft bgs and analyzed for copper, lead, manganese, mercury, and PAHs. Additional step-out confirmation samples will be collected to guide excavation activities if elevated concentrations are encountered at these locations.

Five new locations (8c-14 to 8c-18) will be placed 5 ft south, east, and west of location 33-61971 to define the lateral extent of copper and bound the planned excavation around location 33-61971 (Plate 8). Samples will be collected from the depth intervals of 0.0–1.0 ft bgs, 4.0–5.0 ft bgs, and 9.0–10.0 ft bgs and analyzed for copper and manganese. Additional step-out confirmation samples will be collected to guide excavation activities if elevated copper or manganese concentrations are encountered at these locations.

Additional samples will be collected at existing location 33-61962 to define the vertical extent of lead (Plate 8). Samples will be collected from depth intervals of 10.0–11.0 ft bgs and 12.0–13.0 ft bgs. Samples will be analyzed for lead and manganese.

Two new locations (8c-19 to 8c-20) will be placed 5 ft and 10 ft south of location 33-61962 to define the lateral extent of lead (Plate 8). Samples will be collected from depth intervals of 0.0–1.0 ft bgs, 4.0–5.0 ft bgs, 9.0–10.0 ft bgs 10.0–11.0 ft bgs and 12.0–13.0 ft bgs. Samples will be analyzed for lead, manganese, and pH.

Three new locations (8c-21 to 8c-23) will be placed 5 ft south, east, and west of location 33-61975 to define the lateral extent of copper and bound the planned excavation (Plate 8). Samples will be collected from the depth intervals of 0.0–1.0 ft bgs, 4.0–5.0 ft bgs, and 9.0–10.0 ft bgs and analyzed for copper and manganese. Additional step-out confirmation samples will be collected to guide excavation activities if elevated copper or manganese concentrations are encountered at these locations. One confirmation sample location (8c-24) will be placed in the center of the excavation and samples will be collected from 0.0–1.0 ft and 2.0–3.0 ft beneath the excavation.

After the extent of contamination is defined at SWMU 33-008(c), corrective actions to address potential ecological risk will be performed by removing soil with elevated copper concentrations to a depth of 2 ft bgs around locations 33-61975 and 33-61971 and by removing soil with elevated copper, lead, or mercury to a depth of 5 ft bgs along the eastern edge of the landfill. The exact size and depths of the excavations are not known and will be defined by the collection of additional samples, review of analytical data, and evaluation of risk assessment results before excavation activities begin. Confirmation samples will be collected from 0.0–1.0 ft beneath the bottom of the excavation and 2.0–3.0 ft beneath the bottom of the excavation if vertical extent is not defined by deeper samples previously collected.

Proposed sampling locations and planned excavation boundaries for SWMU 33-006(a) are shown on Plate 8. Table 4.6-3 summarizes the proposed sampling locations, depths, and analytical suites.

4.7 SWMU 33-011(a), Soil Contamination from Former Storage Area

4.7.1 Site Description and Operational History

SWMU 33-011(a) is a former 0.25-acre drum storage area directly within the footprint of and south of former building 33-21 in the central portion of TA-33 (Figure 4.7-1). The 1990 SWMU report describes SWMU 33-011(a) as an approximately 0.25-acre area located within the drilling storage yard where steel drums containing waste oil were stored on pallets or directly on the soil following the removal of building 33-21 (LANL 1990, 007513). Following the removal of building 33-21 in 1974, this unpaved area was used to store 55-gal. drums of used oil on pallets or directly on the soil from 1974 to 1989; the drums are visible in a 1986 aerial photograph (Koogle and Pouls Engineering 1986, 017907). The used oil was stored before recycling. By 1989, the drums had been removed and SWMU 33-011(a) was being used to store drilling equipment, including drilling pipe associated with the Hot Dry Rock Program at Fenton Hill (TA-57). Drilling operations associated with the Hot Dry Rock Project ceased by 1992. The former location of building 33-21 remains vacant and unpaved, and several transportainers are located in the southern portion of SWMU 33-011(a).

Former laboratory building 33-21 was constructed in 1950 and an accidental release of plutonium and beryllium powder in 1960 contaminated the entire building. Building 33-21 was decontaminated within a few weeks but was never used again. In 1974, laboratory building 33-21 and the associated wastewater drainage systems [SWMUs 33-005(a–c)] were removed, and radioactively contaminated soil from much of the site was removed down to bedrock and disposed of at MDA G at TA-54. Soil was removed until radiation readings were below approximately 20 pCi/g gross alpha. The area was subsequently backfilled with clean fill and leveled.

4.7.2 Summary of Previous Investigations

During the 1993 Phase I RFI conducted at SWMU 33-011(a), three samples were collected from three locations based on the former drum storage area location reportedly depicted in the 1986 aerial photograph (Koogle and Pouls Engineering 1986, 017907). Samples were submitted for analysis of TAL metals, SVOCs, PCBs, pesticides, herbicides, gamma-emitting radionuclides, and isotopic plutonium. Data from the 1993 Phase I RFI are screening-level data and showed lead as the only inorganic chemical detected above the BV and numerous detected organic chemicals. No radionuclides were detected or detected above BVs/FVs. These data were not used to evaluate the nature and extent of contamination.

During the 2019–2020 investigation, a total of 12 samples were collected from 4 locations within the former storage area. At each location, samples were collected at 3 subsurface intervals. All samples were analyzed at off-site fixed laboratories for TAL metals, nitrate, perchlorate, cyanide, VOCs, SVOCs, isotopic uranium, isotopic plutonium, and gamma-emitting radionuclides. In addition, 4 samples were analyzed for PCBs. The sampling results indicated the nature and extent of contamination have been defined at the southern portion of SWMU 33-011(a). However, following a detailed review of engineering drawings for former building 33-21, the location of the former storage area was revised. As a result of this change, the Phase II investigation work plan (N3B 2021, 701355); (NMED 2021, 701546) proposed additional sampling to define the nature and extent of potential contamination across the entire site.

During the 2021 Phase II investigation, a total of 65 samples were collected at 6 new locations within the footprint of the former storage area and at 8 step-out locations approximately 10 ft outside the footprint of the former storage area. At each location samples were collected at the surface and from the subsurface. All samples were analyzed at an off-site fixed laboratory for TAL metals, nitrate, perchlorate, cyanide, pH, VOCs, SVOCs, PCBs, isotopic uranium, isotopic plutonium, and gamma-emitting radionuclides.

4.7.3 Nature and Extent of Contamination and Risk

Based on the sampling results presented in the Phase II investigation report (N3B 2021, 701606), nature and extent of contamination have been defined or and/no further sampling for extent is warranted at SWMU 33-011(a), except for the following:

- lateral extent of benzo(a)anthracene; benzo(a)pyrene; benzo(b)fluoranthene; dibenz(a,h)anthracene; and indeno(1,2,3-cd)pyrene north of locations 33-61009 and 33-61065 (Plate 11 and Table 4.7-1).

Human health and ecological risk-screening assessments for SWMU 33-011(a) were not presented in the Phase II investigation report because the nature and extent of contamination have not been defined for the site (N3B 2021, 701606). However, preliminary human health risk-screening assessments indicate there is no potential unacceptable human health risk or dose under two or more scenarios and no potential unacceptable risk to ecological receptors at SWMU 33-011(a).

4.7.4 Proposed Activities at SWMU 33-011(a)

The Phase II investigation report recommended additional characterization sampling to define nature and extent of contamination at SWMU 33-011(a) (N3B 2021, 701606).

Samples will be collected at five new locations (11a-1, 11a-2, 11a-3, 11a-4, and 11a-5) north of locations 33-61065 and 33-61009 to define the lateral extent of PAHs (Figure 4.7-1). Samples will be collected from the depth intervals of 0.0–1.0 ft bgs, 2.0–3.0 ft bgs, and 5.0–6.0 ft bgs. All samples will be analyzed for PAHs.

Proposed sampling locations for SWMU 33-011(a) are shown in Figure 4.7-1. Table 4.7-2 summarizes the proposed sampling locations, depths, and analytical suites.

4.8 SWMU 33-012(a), Drum Storage Area

4.8.1 Site Description and Operational History

SWMU 33-012(a) was an SAA for a former machine shop in building 33-39 at Main Site (Figure 4.8-1). This SAA was located on an asphalt pad (approximately 20 ft wide × 20 ft long) on the east side of building 33-39 between the building and a storage shed. The area was used to accumulate spent solvents and solvent-contaminated oil in one 55-gal. drum at a time in accordance with RCRA requirements (40 Code of Federal Regulations [CFR] 262, “Standards Applicable to Generators of Hazardous Waste”). The SAA waste accumulation drum was placed on a pallet or directly on the asphalt pad. Drums containing PCB-contaminated oil and used oil with heavy metals may have also been stored on the asphalt pad. The SAA was established in the mid-1980s and was deactivated by 1992 and moved to the interior of building 33-39.

The 1990 SWMU Report noted the presence of multiple oil stains at this site (LANL 1990, 007513). The 1992 RFI work plan, however, states no evidence of oil staining was observed (LANL 1992, 007671).

4.8.2 Summary of Previous Investigations

During the 1993 Phase I RFI conducted at SWMU 33-012(a), a grid-based radiation survey was conducted, and no anomalies were identified. Soil samples were collected at two random locations on the asphalt pad and at two locations on the edge of the pad. All of the samples were collected beneath the

asphalt. Samples were submitted for analysis of TAL metals, SVOCs, PCBs, herbicides, pesticides, and gamma-emitting radionuclides. Data from the 1993 Phase I RFI are screening-level data and showed inorganic chemicals detected above BVs and detected organic chemicals; radionuclides were not detected or detected above BVs/FVs. These data were not used to evaluate the nature and extent of contamination.

During the 2019–2020 investigation, a total of 21 samples were collected from 7 locations at previous RFI locations beneath the pad, 3 new locations next to the pad, and 1 new location downgradient of the pad. At each location, samples were collected at the surface and from 2 subsurface depths below the structure. A total of 15 samples were collected from 5 locations specified in the NMED approval with modifications letter (NMED 2011, 201242). At each location, samples were collected from 3 depths beneath the pad. All samples were analyzed at off-site fixed laboratories for TAL metals, cyanide, perchlorate, nitrate, VOCs, SVOCs, PCBs, isotopic uranium, tritium, and gamma-emitting radionuclides.

During the 2021 Phase II investigation, 21 samples were collected from 7 locations downgradient from existing locations 33-60659, 33-60660, and 33-60661 to define the lateral extent of PCBs and PAHs. At each location samples were collected at the surface and from the subsurface and were analyzed at an off-site fixed laboratory for PCBs and PAHs. An additional 21 samples were collected from 7 locations between existing locations 33-01089 and 33-60660 to define the vertical and lateral extent of PCBs and PAHs to the east of the former drum storage area. At each location samples were collected at the surface and from the subsurface and were analyzed at an off-site fixed laboratory for PCBs and PAHs.

Corrective actions at SWMU 33-012(a) to address potential unacceptable human health and ecological risks were performed by removing soil with elevated PAH concentrations at location 33-60659.
Nine samples were collected from three new locations around existing location 33-60659 to define the vertical and lateral extent of PAHs. At each location samples were collected at the surface and from the subsurface and were analyzed at an off-site fixed laboratory for PAHs.

Corrective actions at SWMU 33-012(a) to address potential unacceptable human health and ecological risks were performed by removing soil with elevated PCB and PAH concentrations at location 33-60661
Twelve samples were collected from four new locations around existing location 33-60661 to define the vertical and lateral extent of PCBs and PAHs. At each location samples were collected at the surface and from the subsurface and were analyzed at an off-site fixed laboratory for PCBs and PAHs.

In total, approximately 2.2 yd^3 of soil with elevated PAH and/or PCB concentrations was removed from locations 33-60659 and 33-60661 at SWMU 33-012(a) to address potential unacceptable human health risk and ecological risk.

4.8.3 Nature and Extent of Contamination and Risk

Based on the sampling results presented in the Phase II investigation report (N3B 2021, 701606), nature and extent of contamination have been defined and/or no further sampling for extent is warranted at SWMU 33-012(a), except for the following:

- vertical extent of Aroclor-1254 at location 33-61094 (Plate 12 and Table 4.8-1);
- lateral extent of Aroclor-1254 and Aroclor-1260 around location 33-60661 (Plate 12 and Table 4.8-1); and
- lateral extent of benzo(a)anthracene; benzo(a)pyrene; benzo(b)fluoranthene; dibenz(a,h)anthracene; and indeno(1,2,3-cd)pyrene around location 33-60659 (Plate 12 and Table 4.8-1).

Human health and ecological risk-screening assessments were not presented for SWMU 33-012(a) in the Phase II investigation report because the nature and extent of contamination have not been defined for the site (N3B 2021, 701606). However, preliminary human health risk-screening assessments indicate there is potential unacceptable human health risk under two or more scenarios due to PCBs, PAHs, and chromium, but there is no potential unacceptable risk to ecological receptors at SWMU 33-012(a).

4.8.4 Proposed Activities at SWMU 33-012(a)

The Phase II investigation report recommended both additional characterization and remediation activities at SWMU 33-012(a). The preliminary risk assessment results were used to guide selection of sample locations and plan remediation activities.

Two deeper samples will be collected from existing location 33-61094 to define the vertical extent of PCBs (Figure 4.8-1). Samples will be collected from depth intervals of 6.0–7.0 ft bgs and 8.0–9.0 ft bgs. Samples will be analyzed for PCBs.

Samples from 35 locations will be collected around location 33-60661 across a nominal 5-ft grid spacing (locations 12a-1 to 12a-35) to define the lateral extent of PCBs and to bound the planned excavations around locations 33-60661, 33-61094, 33-61095, and 33-61096 (Figure 4.8-1). Samples will be collected from depth intervals 0.0–1.0 ft bgs, 2.0–3.0 ft bgs, and 4.0–5.0 ft bgs. Samples will be analyzed for PCBs. Additional step-out samples will be collected to guide excavation activities if elevated PCB concentrations are encountered at these locations.

Six samples will be collected from two locations north and west of location 33-01086 (locations 12a-36 and 12a-37) to bound the planned excavation around location 33-01086 for elevated chromium and PAHs (Figure 4.8-1). Samples will be collected from depth intervals 0.0–1.0 ft bgs, 2.0–3.0 ft bgs, and 4.0–5.0 ft bgs. Samples will be analyzed for chromium and PAHs. A sample cannot be added to the south because of the presence of building 33-129. Additional step-out samples will be collected to guide excavation activities if elevated chromium concentrations are encountered at these locations.

Samples from six locations will be collected around location 33-60659 (locations 12a-38 to 12a-43 to define the lateral extent of PAHs (Figure 4.8-1). Samples will be collected from depth intervals 0.0–1.0 ft bgs, 2.0–3.0 ft bgs, and 4.0–5.0 ft bgs. Samples will be analyzed for PAHs.

After the extent of chromium, PAHs, and PCBs contamination is defined at SWMU 33-012(a), corrective actions to address potential unacceptable human health risk will be performed at multiple locations. Corrective actions to address potential unacceptable human health risk will be performed by removing soil with elevated PCB concentrations to a depth of 2 ft bgs around location 33-60661, to a depth of 5 ft bgs around location 33-61094, and to a depth of 4 ft bgs around locations 33-61095 and 33-61096. Corrective actions to address potential unacceptable human health risk will be performed by removing soil with elevated chromium and PAH concentrations to a depth of 2 ft bgs around location 33-01086. The exact areas and depths of the planned excavations are not known and will be defined by the collection of additional samples, review of analytical data, and evaluation of risk assessment results before excavation activities begin. Confirmation samples will be collected from 0.0–1.0 ft and 2.0–3.0 ft beneath the bottom of the excavation if vertical extent is not defined by deeper samples previously collected.

If sample results from these investigations determine that the requirements set forth per 40 CFR 761.61 apply, then DOE shall submit a request to EPA (with a copy to NMED) to manage the waste as PCB remediation waste.

Proposed sampling locations for SWMU 33-004(i) are shown in Figure 4.8-1. Table 4.8-2 summarizes the proposed sampling locations, depths, and analytical suites.

4.9 SWMU 33-017, Operational Release

4.9.1 Site Description and Operational History

SWMU 33-017 consists of areas potentially impacted by operational releases from former operations within Main Site at TA-33 (Figure 4.9-1). SWMU 33-017 is located at the northern and eastern edges of Main Site and is approximately 600 ft long × 100 ft to 600 ft wide. The site generally slopes downward to the east and is at the head of a small drainage tributary of Chaquehui Canyon. SWMU 33-017 is potentially impacted by runoff from the paved areas of the Main Site complex, by deposition from airborne releases from TA-33 Main Site facilities, and by operational releases from an area east of building 33-39 used for vehicle maintenance.

Operations conducted within Main Site included uranium processing and machining, cadmium and silver welding and soldering, lead melting and casting, cadmium and beryllium machining, and tritium processing and decontamination. Additional materials handled at Main Site facilities included mercury and organic solvents. These operations began in 1949 and most continued until 1972. When these operations ceased, some of the facilities were used for offices and electronics laboratories.

4.9.2 Summary of Previous Investigations

During the 1993 RFI conducted at SWMU 33-017, 67 samples were collected from 66 locations including random offsets from a 100-ft grid overlying Main Site, 4 radial extensions from the grid, within the vehicle maintenance area, and locations from drainage channels that receive runoff from Main Site. Samples were submitted for analysis of TAL metals, total uranium, SVOCs, herbicides, pesticides, PCBs, isotopic plutonium, tritium, and gamma-emitting radionuclides. Data from the 1993 Phase I RFI are screening-level data and showed several inorganic chemicals detected above BVs; 23 detected organic chemicals; and cesium-137, plutonium-238, plutonium-239/240, and tritium detected or detected above FVs. These data were not used to evaluate the nature and extent of contamination.

During the 1996 Phase II RFI conducted at SWMU 33-017, the investigation focused on the area east of building 33-39 at the location of the former vehicle maintenance area. A total of 25 samples were collected from 24 locations. Samples were submitted for analysis of SVOCs and PCBs. Data from the 1996 Phase II RFI meet data-validation standards and are decision-level data.

During the 2019–2020 investigation, a total of 75 samples were collected from 25 previous RFI locations to determine vertical extent. At each location, samples were collected at the surface and from 2 subsurface depths. A total of 15 samples were collected from 5 locations in the drainage downgradient of Main Site to the stormwater gage station E340 to determine lateral extent. At each location, samples were collected from 3 depths beneath the pad. All samples were analyzed at off-site fixed laboratories for TAL metals, cyanide, perchlorate, nitrate, VOCs, SVOCs, PCBs, isotopic uranium, tritium, isotopic plutonium, and gamma-emitting radionuclides.

During the 2021 Phase II investigation, corrective actions at SWMU 33-017 to address potential unacceptable ecological risk were performed by removing soil with elevated copper, lead, mercury, zinc, and selenium concentrations at locations 33-01114, 33-01106, 33-01107, and 33-01612. Twelve samples were collected from four new locations around existing locations 33-01106, 33-01107, and 33-01612 to define the vertical and lateral extent of copper, lead, mercury, zinc, and selenium. At each location, samples were collected at the surface and from the subsurface. All samples were analyzed for TAL metals.

In total, approximately 17.25 yd^3 of soil with elevated copper, lead, mercury, zinc, and selenium concentrations was removed from locations 33-01106, 33-01107, 33-01114, and 33-01612 at SWMU 33-017 to address potential unacceptable ecological risk.

4.9.3 Nature and Extent of Contamination and Risk

Based on the sampling results presented in the Phase II investigation report (N3B 2021, 701606), nature and extent of contamination have been defined and/or no further sampling for extent is warranted at SWMU 33-017 except for the following:

- lateral extent of lead at location 33-60984 (Plate 13 and Table 4.9-1).

Human health and ecological risk-screening assessments were not presented for SWMU 33-017 in the Phase II investigation report because the extent of contamination has not been defined for the site (N3B 2021, 701606). However, preliminary human health risk-screening assessments indicate there is no potential unacceptable human health risk or dose under two or more scenarios and no potential unacceptable risk to ecological receptors at SWMU 33-017.

4.9.4 Proposed Activities at SWMU 33-017

The Phase II investigation report recommended additional characterization sampling to define the extent of lead contamination at SWMU 33-017.

Samples from five locations will be collected at step-out locations 5 ft and 10 ft north and east of location 33-60984 [locations 17-1 to 17-5 to define the lateral extent of lead (Figure 4.9-1)]. Samples will be collected from depth intervals 0.0–1.0 ft bgs, 2.0–3.0 ft bgs, and 4.0–5.0 ft bgs. Samples will be analyzed for lead.

Proposed sampling locations for SWMU 33-017 are shown in Figure 4.9-1. Table 4.9-2 summarizes the proposed sampling locations, depths, and analytical suites.

4.10 AOC C-33-001, Former Transformer

4.10.1 Site Description and Operational History

AOC C-33-001 consists of a former PCB transformer (former structure 33-124) in the northern portion of Main Site at TA-33 (Figure 4.10-1). The transformer was mounted on a 15-ft-long × 50-ft-wide concrete pad next to the northeast wall of building 33-114 and was bounded by asphalt to the north, east, and south. The pad was enclosed by a fence and accessible only through a locked gate. The transformer (former structure 33-124) was placed into service in the 1950s, and the mineral oil in the transformer contained PCBs. Oil stains were observed on the concrete pad and leaks from the transformer were observed during routine inspections conducted between September 1985 and March 1992. In 1992, the transformer was removed and replaced with a non-PCB transformer as part of DOE's program to remove all PCB-containing electrical equipment. The stained areas on the concrete pad were double-washed and double-rinsed; however, post-cleanup sampling was not conducted to verify the completion of cleanup as required by the Toxic Substances Control Act (TSCA) PCB spill cleanup requirements (40 CFR 761.130). Sampling conducted during the transformer replacement was limited to the area where the old transformer had been placed temporarily during removal.

4.10.2 Summary of Previous Investigations

During the 1993 Phase I RFI conducted at TA-33, the ER Project determined the sampling conducted during the removal and replacement of the PCB transformer did not meet RFI objectives and did not meet the confirmation sampling requirements of the TSCA PCB spill cleanup regulations (40 CFR 761.130). The RFI report, therefore, recommended additional sampling to determine whether historical releases of PCBs had occurred. The proposed sampling included field-screening the stained areas on the concrete pad and the soil around the perimeter of the pad. If field screening detected PCBs in soil at the perimeter of the pad, additional screening samples were to be collected at greater distances from the pad until the extent of PCB contamination had been bounded (LANL 1995, 050113, pp. 90–93).

During the 1996 Phase II RFI conducted at TA-33, four samples were collected from four locations around the AOC C-33-001 transformer pad. The samples were submitted for analysis of PCBs/pesticides. Data from the 1996 RFI meet data-validation standards and are decision-level data.

In 1999, a BMP was performed at AOC C-33-001 consisting of the removal of PCB-contaminated soil and sediment using an industrial vacuum system on the asphalt area between buildings 33-113 and 33-114. The field team began by vacuuming the area closest to the transformer pads next to building 33-114 and continued to pick up sediment present in low-lying depressions on the asphalt. Special emphasis was placed on cracks and potholes that had developed over the years. In addition, the field team followed a low-grade slope from building 33-114 to the east between buildings 33-113 and 33-39 where surface sediment could migrate off-site during storm events. One 55-gal. drum of material was collected. No samples were collected during the 1999 BMP implementation.

During the 2019–2020 investigation, a total of 21 samples were collected from 4 previous RFI locations around the concrete pad and 3 additional locations downgradient to determine extent. At each location, samples were collected at the surface and from 2 subsurface depths. All samples were analyzed at off-site fixed laboratories for PCBs. During fieldwork numerous utilities were encountered, which limited the locations that could be sampled.

During the 2021 Phase II investigation, corrective actions were performed by removing soil with elevated Aroclor-1260 concentrations at location 33-01749 to address potential unacceptable human health risk. Approximately 0.01 yd^3 of soil with elevated Aroclor-1260 concentrations was removed from location 33-01749. Twelve samples were collected from four new locations around location 33-01749 to define the vertical and lateral extent of PCBs. At each location, samples were collected at the surface and from the subsurface and analyzed for PCBs.

4.10.3 Nature and Extent of Contamination and Risk

Based on the sampling results presented in the Phase II investigation report (N3B 2021, 701606), nature and extent of contamination have been defined or no further sampling for extent is warranted at AOC C-33-001 except for the following:

- lateral extent of Aroclor-1254 at location 33-61105 and Aroclor-1260 at locations 33-01749 and 33-01751 (Figure 4.10-2 and Table 4.10-1).

Human health and ecological risk-screening assessments were not presented for AOC C-33-001 in the Phase II investigation report because the nature and extent of contamination have not been defined for the site (N3B 2021, 701606). However, preliminary human health risk screening assessments indicate there is potential unacceptable human health risk under two or more scenarios but no potential unacceptable risk to ecological receptors at AOC C-33-001.

4.10.4 Proposed Activities at AOC C-33-001

The Phase II investigation report recommended both additional characterization and remediation activities at AOC C-33-001. The preliminary risk assessment results were used to guide selection of sample locations and plan remediation activities.

Samples from 13 locations will be collected around location 33-01751 across a nominal 5-ft grid spacing (locations 1-1 to 1-13) to define the lateral extent of PCBs and to bound the planned excavation boundary around location 33-01751 (Figure 4.10-1). Samples will be collected from depth intervals of 0.0–1.0 ft bgs, 2.0–3.0 ft bgs, and 4.0–5.0 ft bgs. Samples will be analyzed for PCBs. Additional step-out samples will be collected to guide excavation activities if elevated PCB concentrations are encountered at these locations.

Samples from 11 locations will be collected around locations 33-61105 and 33-01749 (locations 1-14 to 1-24) to define the lateral extent of PCBs and to bound the planned excavation boundary around locations 33-61105 and 33-01749 (Figure 4.10-1). Samples will be collected from depth intervals 0.0–1.0 ft bgs, 2.0–3.0 ft bgs, and 4.0–5.0 ft bgs. Samples will be analyzed for PCBs. Additional step-out samples will be collected to guide excavation activities if elevated PCB concentrations are encountered at these locations.

After the extent of PCB contamination is defined at AOC C-33-001, corrective actions to address potential unacceptable human health risk will be performed by removing soil with elevated PCB concentrations to a depth of 2 ft bgs around location 33-01751 and to a depth of 4 ft bgs around locations 33-61105 and 33-01749. The exact size of each excavation is not known and will be defined by the collection of additional samples, review of analytical data, and evaluation of risk assessment results before excavation activities begin. Confirmation samples will be collected from 0.0–1.0 ft and 2.0–3.0 ft beneath the bottom of the excavation if vertical extent is not defined by deeper previously collected samples.

Before remediation of PCB-contaminated media, DOE will submit a request to EPA (with a copy provided to NMED) to manage the waste as PCB remediation waste.

Proposed sampling locations and planned excavation boundaries for AOC C-33-001 are shown in Figure 4.10-1. Table 4.10-2 summarizes the proposed sampling locations, depths, and analytical suites.

5.0 INVESTIGATION METHODS

A summary of investigation methods to be implemented is presented in Table 5.0-1. Summaries of the field investigation methods are provided below.

Chemical and radiological analyses will be performed in accordance with the N3B Exhibit D, Scope of Work and Technical Specifications for Off-Site Analytical Laboratory Services. Accredited off-site contract analytical laboratories will use the most recent EPA- and industry-accepted extraction and analytical methods for chemical analyses of analytical suites.

5.1 Establishing Sampling Locations

Proposed sampling locations are identified for each site based on engineering drawings, surveyed locations of existing structures, previous sampling locations, and topography or other features identified in the field. The coordinates of proposed locations will be obtained by georeferencing the points from the proposed sampling maps. The coordinates will be used to locate flags or other markers in the field using a differential Global Positioning System (GPS) unit. If any proposed sampling locations are moved

because of field conditions, utilities, or other unexpected circumstances, the new locations will be surveyed immediately following sample collection as described in section 5.2.

5.2 Geodetic Surveys

Geodetic surveys will be conducted to locate historical structures and to document field activities such as sampling and excavation locations. The surveyors will use a Trimble GeoXT handheld GPS, or equivalent, for the surveys. The coordinate values will be expressed in the New Mexico State Plane Coordinate System (transverse Mercator), Central Zone, North American Datum 1983. Elevations will be reported per the National Geodetic Vertical Datum of 1929.

5.3 Sampling

Soil and rock samples will be collected by the most efficient, least invasive method practicable. The methods will be determined by the field team based on site conditions such as topography, the nature of the material to be sampled, the depth intervals sampled, and accessibility. Typically, samples will be collected using spade-and-scoop, hand-auger, or hollow-stem auger drilling methods. For all methods, samples for VOC analysis will be transferred immediately from the sampling tool to the sample container to minimize the loss of subsurface VOCs during the sample collection process. Containers for VOC samples will be filled as completely as possible, leaving no or minimal headspace, and sealed with a Teflon-lined cap.

5.3.1 Surface Samples

Surface and shallow subsurface samples will be collected in accordance with standard operating procedure (SOP) N3B-SOP-ER-2001, “Soil, Tuff, and Sediment Sampling.” Stainless-steel shovels, spades, scoops, and bowls will be used for ease of decontamination. If the surface location is at bedrock, an axe or hammer and chisel may be used to collect samples.

5.3.2 Sediment Samples

Sediment samples will be collected from areas of sediment accumulation that include sediment judged to be representative of the historical period of Laboratory operations (i.e., post-1943). Sediment samples will be collected using spade-and-scoop (see section 5.3.1) and/or hand-auger (see section 5.3.3) methods. Actual sediment sampling locations will be selected in the field based on geomorphic relationships in areas likely to have been affected by discharges from the SWMU. Because sediment is dynamic and subject to redistribution by runoff events, locations may need to be adjusted when this work plan is implemented. In the course of collecting sediment samples, it may be determined, based on field conditions, that the selected location is not appropriate (e.g., the sediment is much shallower than anticipated, the sediment is predominantly coarse grained, or the sediment shows evidence of being older than the target age). Sediment sampling locations will be adjusted as appropriate based on geomorphic verification to ensure sampling locations are in the drainage(s) downgradient of the site. Any revised locations will be surveyed and the updated coordinates will be submitted for inclusion in the appropriate database.

5.3.3 Subsurface Samples

Subsurface sampling is proposed that may include surface soil and fill, sediment, tuff, and pore gas. Subsurface samples will be collected using hand- or hollow-stem auger methods, depending on the depth

of the samples and the material being sampled. Pore-gas samples will be collected from dedicated sampling ports. A brief description of these methods is provided below.

5.3.3.1 Hand Auger

Hand augers or power-assisted augers may be used to drill shallow holes at locations that can be sampled without the use of a drill rig and at locations inaccessible by a drill rig. The hand auger is advanced by turning the auger into the soil or tuff until the barrel is filled. The auger is removed and the sample is placed in a stainless-steel bowl. Hand-auger samples will be collected in accordance with N3B-SOP-ER-2001, “Soil, Tuff, and Sediment Sampling.”

5.3.3.2 Hollow-Stem Auger

A drill rig equipped with a hollow-stem auger may be used to drill deeper holes at locations that cannot be sampled using a hand-auger or power-assisted augers. The hollow-stem auger consists of a hollow steel shaft with a continuous spiraled steel flight welded onto the exterior of the stem. The stem is connected to an auger bit; when it is rotated, it transports cuttings to the surface. The hollow stem of the auger allows insertion of drill rods, split-spoon core barrels, Shelby tubes, and other samplers through the center of the auger so samples may be retrieved during drilling operations.

A bottom plug or pilot bit can be fastened onto the bottom of the auger to keep out most of the soil and/or water that tends to clog the bottom of augers during drilling. Drilling without a center plug is acceptable if the soil plug, formed in the bottom of the auger, is removed before sampling or installing a well casing. The soil plug can be removed by washing out the plug using a side-discharge rotary bit or by auguring out the plug with a solid-stem auger bit sized to fit inside the hollow-stem auger.

During sampling, the auger will be advanced to just above the desired sampling interval. The sample will be collected by driving a split-spoon sampler into undisturbed soil/tuff to the desired depth. Samples will be collected in accordance with N3B-SOP-ER-2001, “Soil, Tuff, and Sediment Sampling.”

Field documentation will include detailed borehole logs for each borehole drilled using the hollow-stem auger method. The borehole logs will document the matrix material in detail and will include the results of all field screening; fractures and matrix samples will be assigned unique identifiers.

5.3.3.3 Pore-Gas

One round of subsurface pore-gas samples will be collected from existing vapor-monitoring well locations 33-60938, 33-60939, and 33-60940 and one round of subsurface pore-gas samples will also be collected from the newly installed vapor monitoring wells at MDA K. All pore-gas samples will be collected in accordance with N3B-SOP-ER-2008, “Sampling Subsurface Vapor.”

The static subsurface pressure will be monitored at the time of sample collection. Concentrations of purge indicator gases (carbon dioxide and oxygen) will be monitored continuously using a multigas monitor air analyzer during the purge cycle. Once indicator-gas concentrations are stable and proper purging has been verified, pore-gas samples will be collected in SUMMA canisters for VOC analysis, and in silica-gel cartridges for tritium analysis in accordance with N3B-SOP-ER-2008.

5.4 Borehole Abandonment

Hand auger or power-assisted auger holes advanced for the purpose of collecting soil and rock samples may be backfilled with clean fill or base course to the surface.

All hollow-stem auger boreholes will be properly abandoned in accordance with N3B-SOP-ER-6005, "Monitoring Well and Borehole Abandonment." All hollow-stem auger boreholes are expected to have a total depth of 20 ft or less and will be abandoned by filling the borehole with bentonite chips and then hydrating the chips in 1- to 2-ft lifts. The borehole will be visually inspected while the bentonite chips are added to ensure bridging does not occur.

The use of backfill materials, such as bentonite and grout, will be documented in a field logbook with regard to volume (calculated and actual), intervals of placement, and additives used to enhance backfilling. All borehole abandonment information will be provided in the Phase III investigation report.

5.5 Field-Screening Methods

The primary field-screening methods to be used on samples include radiological screening and organic vapor screening using a photoionization detector (PID). Field screening for HE may also be required by the facility operator.

Field screening will be used primarily for health and safety purposes and for determining transportability of samples from the field sites to the Sample Management Office (SMO) and from the SMO to the analytical laboratories. Field-screening results may be used at the discretion of the field personnel to collect additional samples beyond those planned or to extend the depth of sampling as required. Field changes to sampling plans will be approved by the subcontractor technical representative and will be documented on field paperwork and in the Phase III investigation report.

5.5.1 Radiological Screening

Based on the results of past sampling, field screening for radioactivity will be conducted primarily to ensure worker health and safety and to meet U.S. Department of Transportation shipping requirements, rather than to direct sampling. Each sample will be screened by N3B radiation control technicians before being transported to the SMO for processing. Screening results for each sample will be documented in field logbooks and on sample collection logs. Radiological surveys will also be performed on the exterior of sample containers and shipping containers to meet U.S. Department of Transportation shipping requirements in accordance with Radiation Protection procedures. Radiological screening will target gross-alpha, -beta, and -gamma radiation. Field screening for alpha, beta, and gamma radiation will be conducted within 0.25 in. of soil and tuff samples and core material using appropriate field instruments. All instrument response and performance tests will be performed and documented in accordance with N3B Radiation Protection Program requirements.

5.5.2 Organic Vapor Field Screening

Based on 2019–2020 and Phase II investigation results, significant VOC contamination is not expected to be encountered, and screening will be conducted for health and safety purposes.

Vapor screening of soil, sediment, and subsurface core will be conducted using a PID equipped with an 11.7-electronvolt lamp and capable of measuring quantities as low as 1.0 ppm. All samples will be screened for organic vapors in headspace gas.

The PID will be calibrated daily to the manufacturer's standard for instrument operation, and the daily calibration results will be documented in the field logbooks. All instrument background checks, background ranges, and calibration procedures will be documented daily in the field logbooks.

5.6 Requesting Samples through the Sample Management Office

Sample collection and analyses will be coordinated with the N3B SMO. Per N3B-SOP-SDM-1101, "Sample Control and Field Documentation," to request samples through the SMO, sampling personnel must complete the Sample Request Module, obtain sample plan requestor permission within the Environmental Information Management (EIM) database, and submit a sample plan request at least 5 business days before the sampling event. Once the sample plan request is submitted, a summarized copy will be available for download. The sample plan requestor will be notified by the SMO if the plan is rejected, accepted, or if changes are necessary, and when the sampling paperwork is available. Sampling paperwork will consist of sample collection logs, container labels, and a shipping classification determination checklist.

5.7 Chain of Custody for Samples

The collection, screening, and transport of samples will be documented on standard forms (either paper of electronic) generated by the SMO. These include sample collection logs, chain-of-custody forms, and sample container labels. Sample collection logs will be completed at the time of sample collection and signed by the sampler and a reviewer who will verify the logs for completeness and accuracy. Corresponding labels will be initialed and applied to each sample container, and custody seals will be placed around container lids or openings. Chain-of-custody forms will be completed and signed to verify that sample custody has been maintained throughout the sample life cycle.

5.8 Quality Assurance/Quality Control Samples

Quality assurance (QA) and quality control (QC) samples will include field duplicates, field rinsate samples, and field trip blanks. Field duplicates and field rinsates will be collected at an overall frequency of at least 1 for every 10 regular samples as specified in Appendix F, Section I.B.4.f, of the Consent Order and as directed by the current version of N3B-SOP-SDM-1100, "Sample Containers, Preservation, and Field Quality Control." Field trip blanks will be collected at a rate of at least 1 per day on days when VOC samples are collected.

5.9 Cleanup Activities

Removal of contaminated media is proposed for SWMUs 33-004(i), 33-008(c), and 33-012(a), and AOC C-33-001 in this Phase III work plan to address potential unacceptable human health risk and/or ecological risk. Excavation of contaminated media, waste disposition, and confirmation sampling will be completed at these sites. Excavations will be completed using a track excavator, backhoe, or by hand. The general sequence of activities for excavation, transportation, disposal, and confirmation sampling is summarized below. Specific details are provided in section 4.0.

5.9.1 Confirmation Sampling

Sampling will be performed at all sites to be excavated to define the size of the proposed excavation area (section 4).

5.9.2 Removal of Contaminated Soil

- Mobilize:
  - ❖ Prepare staging area.
  - ❖ Determine boundaries of contamination after surveying and staking coordinates of the area to be excavated, as identified in this Phase III investigation work plan.
  - ❖ Mobilize heavy equipment to site.
  - ❖ Identify underground utilities.
- Prepare site:
  - ❖ Install fencing.
  - ❖ Install stormwater controls.
  - ❖ Conduct pre-excavation survey.
- Remove contaminated soil:
  - ❖ Excavate contaminated soil.
  - ❖ Stockpile and load rolloff container.
  - ❖ Survey boundaries of excavation.
  - ❖ Characterize waste for dispositioning.
  - ❖ Transport waste to off-site disposal facility.
- Backfill:
  - ❖ Backfill and compact.
  - ❖ Vegetate surface.
  - ❖ Survey finished surface.
- Demobilize

5.9.3 Waste Management and Disposal

Management of all investigation waste, including waste generated during cleanup, is described in Appendix B.

5.10 Laboratory Analytical Methods

Analytical suites for samples to be collected include TAL metals, nitrate, perchlorate, total cyanide, SVOCs, VOCs, PCBs, explosive compounds, PAHs, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium. Analytical methods are summarized in Table 5.10-1. Sample collection and analysis will be coordinated with the SMO.

Analytical results meet the N3B minimum data quality objectives as outlined in N3B-PLN-SDM-1000, “Sample and Data Management Plan.” N3B-PLN-SDM-1000 sets the validation frequency criteria at 100% Level 1 examination and Level 2 verification of data, and at 10% minimum Level 3 validation of data. A Level 1 examination assesses the completeness of the data as delivered from the analytical laboratory, identifies any reporting errors, and checks the usability of the data based on the analytical

laboratory's evaluation of the data. A Level 2 verification evaluates the data to determine the extent to which the laboratory met the analytical method and the contract-specific QC and reporting requirements. A Level 3 validation includes Level 1 and 2 criteria and determines the effect of potential anomalies encountered during analysis and possible effects on data quality and usability. A Level 3 validation is performed manually with method-specific data validation procedures. Laboratory analytical data are validated by N3B personnel as outlined in N3B-PLN-SDM-1000; N3B-AP-SDM-3000, "General Guidelines for Data Validation"; N3B-AP-SDM-3014, "Examination and Verification of Analytical Laboratory Data"; and additional method-specific analytical data validation procedures. All associated validation procedures have been developed, where applicable, from the EPA QA/G-8 "Guidance on Environmental Data Verification and Data Validation"; the Department of Defense/Department of Energy "Consolidated Quality Systems Manual for Environmental Laboratories"; the EPA "National Functional Guidelines for Data Validation"; and the American National Standards Institute/American Nuclear Society 41.5, "Verification and Validation of Radiological Data."

5.11 Health and Safety

The field investigations described in this Phase III investigation work plan will comply with all applicable requirements pertaining to worker health and safety. An integrated work document and a site-specific health and safety plan will be in place before fieldwork is conducted.

5.12 Equipment Decontamination

Equipment for drilling and sampling will be decontaminated before and after sampling activities to minimize the potential for cross-contamination. Dry decontamination methods will be used whenever possible to minimize waste and avoid generating liquid waste. Dry decontamination uses disposable paper towels and over-the-counter cleaner, such as Fantastik or equivalent. All sampling equipment will be decontaminated in accordance with N3B-SOP-ER-2002, "Field Decontamination of Equipment."

Dry decontamination may be followed by wet decontamination, if necessary. Wet decontamination may include washing with a nonphosphate detergent and water, followed by a water rinse and a second rinse with deionized water. Alternatively, drilling/exploration equipment that may come in contact with a borehole will be decontaminated by steam cleaning, by hot water pressure-washing, or by another method before each new borehole is drilled. The equipment will be pressure-washed on a high-density polyethylene liner at a temporary decontamination pad. Cleaning solutions and wash water will be collected and contained for proper disposal. Decontamination solutions will be sampled and analyzed to determine the final disposition of the wastewater and the effectiveness of the decontamination procedures.

5.13 Waste Management

Waste generated during field-investigation activities may include, but is not limited to, drill cuttings; contaminated soil; contaminated personal protective equipment (PPE), sampling supplies, and plastic; fluids from the decontamination of PPE and sampling equipment; and all other waste that has potentially come into contact with contaminants.

All waste generated during field-investigation activities will be managed in accordance with N3B-AP-TRU-2150, "Waste Characterization Strategy Form," applicable EPA and NMED regulations, and DOE orders. Appendix B presents the waste management plan.

6.0 MONITORING PROGRAMS

Groundwater, sediment, and surface-water monitoring are conducted in the Chaquehui Canyon Aggregate Area as part of other environmental activities. This monitoring is summarized below.

6.1 Groundwater

Groundwater monitoring is not performed to specifically monitor potential releases from any of the sites addressed in this Phase III investigation work plan. Monitoring of alluvial, perched-intermediate, and regional groundwater within the Ancho Canyon watershed is performed under the Consent Order as described for the General Surveillance monitoring group in the "Interim Facility-Wide Groundwater Monitoring Plan" (e.g., N3B 2020, 700927). No monitoring locations are within the Chaquehui Canyon Aggregate Area.

6.2 Stormwater

Twenty-one SWMUs and one AOC (Plate 1) are subject to the storm water monitoring requirements of the 2022 LANL National Pollutant Discharge Elimination System Individual Permit (IP) (NM0030759) for stormwater discharges from SWMUs and AOCs. Monitoring under the IP is performed using site-monitoring areas (SMAs) that monitor stormwater runoff from individual SWMUs and AOCs or groups of SWMUs and AOCs. The SMAs in the Chaquehui Canyon Aggregate Area monitored under the IP and the corresponding sites are

- CHQ-SMA-0.5: SWMUs 33-004(g), 33-007(c), and 33-009
- CHQ-SMA-1.01: SWMU 33-002(d)
- CHQ-SMA-1.02: SWMUs 33-004(h), 33-008(c), 33-011(d), and 33-015
- CHQ-SMA-1.03: SWMUs 33-008(c) and 33-012(a); AOC C-33-003
- CHQ-SMA-2: SWMUs 33-004(d) and 33-007(c); AOC C-33-003
- CHQ-SMA-3: SWMU 33-010(f)
- CHQ-SMA-4: SWMU 33-011(e)
- CHQ-SMA-4.1: SWMU 33-016
- CHQ-SMA-4.5: SWMU 33-011(b)
- CHQ-SMA-5.05: SWMU 33-007(b)
- CHQ-SMA-6: SWMUs 33-004(j), 33-006(a), 33-007(b), 33-008(c), 33-010(c), 33-010(g), 33-010(h), and 33-014
- CHQ-SMA-7.1: SWMU 33-010(g)

The monitoring results are reported to NMED and EPA annually.

7.0 SCHEDULE

Following approval of this work plan, the work will be implemented in accordance with milestones or targets for the Southern External Boundary Campaign established under the 2016 Consent Order.

8.0 REFERENCES AND MAP DATA SOURCES

8.1 References

The following reference list includes documents cited in this plan. Parenthetical information following each reference provides the author(s), publication date, and ERID, ESHID, or EMID.ERIDs were assigned by Los Alamos National Laboratory's (the Laboratory's) Associate Directorate for Environmental Management (IDs through 599999); ESHIDs were assigned by the Laboratory's Associate Directorate for Environment, Safety, and Health (IDs 600000 through 699999); and EMIDs are assigned by N3B (IDs 700000 and above).

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8.2 Map Data Sources

Map data sources used in original figures and/or plates created for this report are described below and identified by legend title.

Legend Item	Data Source
LANL Technical Areas	Technical Area Boundaries; Los Alamos National Laboratory, Site Planning & Project Initiation Group, Infrastructure Planning Office; September 2007; as published 04 December 2008.
Paved roads	Paved Road Arcs; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.
Paved parking	Paved Parking; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.
Dirt roads	Dirt Road Arcs; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.
LANL structures	Structures; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.
LANL fence lines	Security and Industrial Fences and Gates; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.
LANL communications lines	Communication Lines; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 08 August 2002; as published 28 May 2009.
LANL electric lines	Primary Electric Grid; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.
LANL gas lines	Primary Gas Distribution Lines; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.
LANL sewer lines	Sewer Line System; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.
LANL steam lines	Steam Line Distribution System; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 15 January 2009.
LANL water lines	Water Lines; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.
LANL industrial waste lines	Primary Industrial Waste Lines; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 15 October 2008.
LANL historical sampling locations	Point Feature Locations of the Environmental Restoration Project Database; Los Alamos National Laboratory, Waste and Environmental Services Division, 5 June 2010.
LANL PRS boundaries	Potential Release Sites; Los Alamos National Laboratory, Waste and Environmental Services Division, Environmental Data and Analysis Group, EP2009-0137; 1:2,500 Scale Data; 25 January 2010.
Contours	Hypsography, 2, 10, 20, and 100 Foot Contour Interval; Los Alamos National Laboratory, ENV Environmental Remediation and Surveillance Program; 1991.

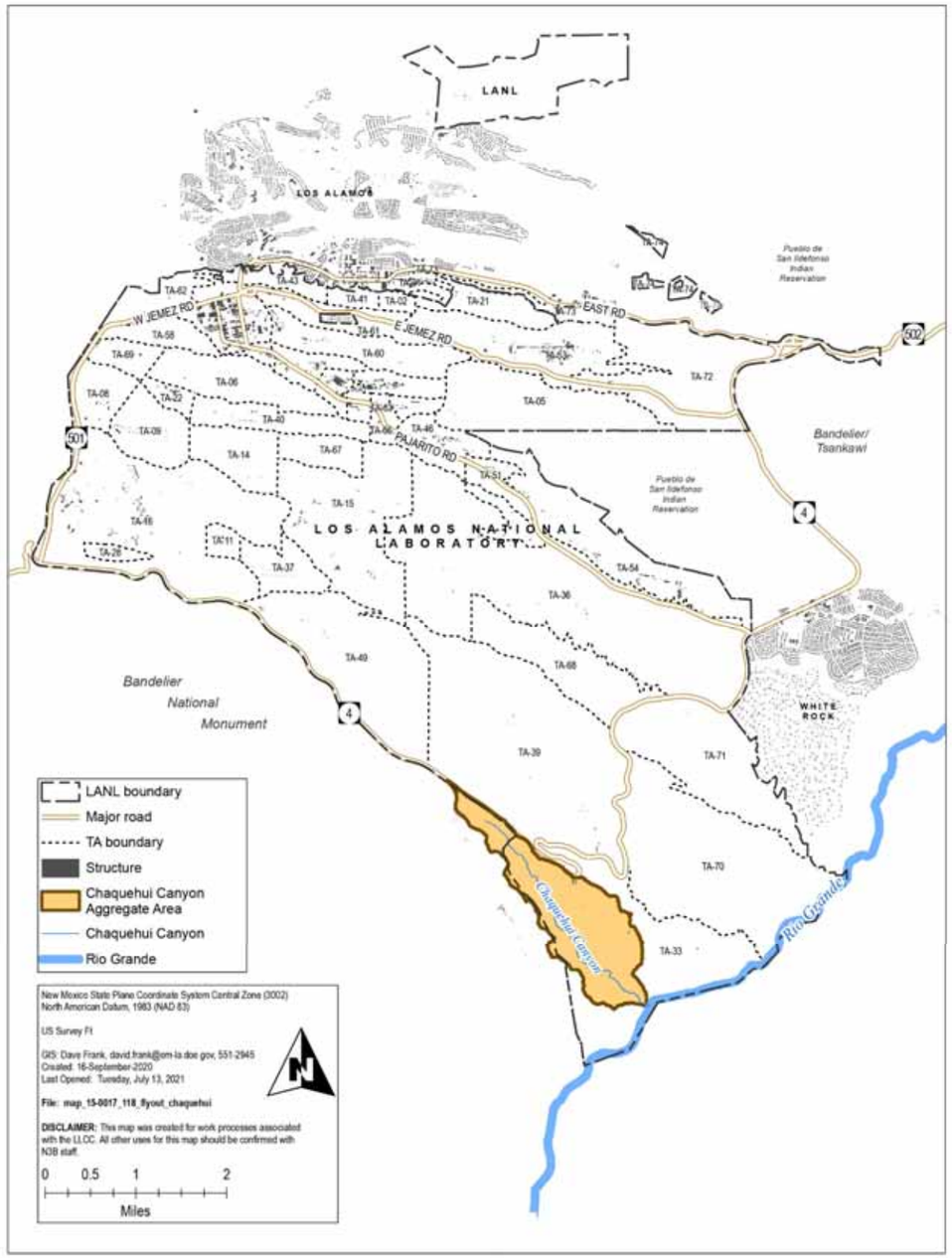


Figure 1.0-1 Location of Chaquehui Canyon Aggregate Area with respect to Laboratory technical areas

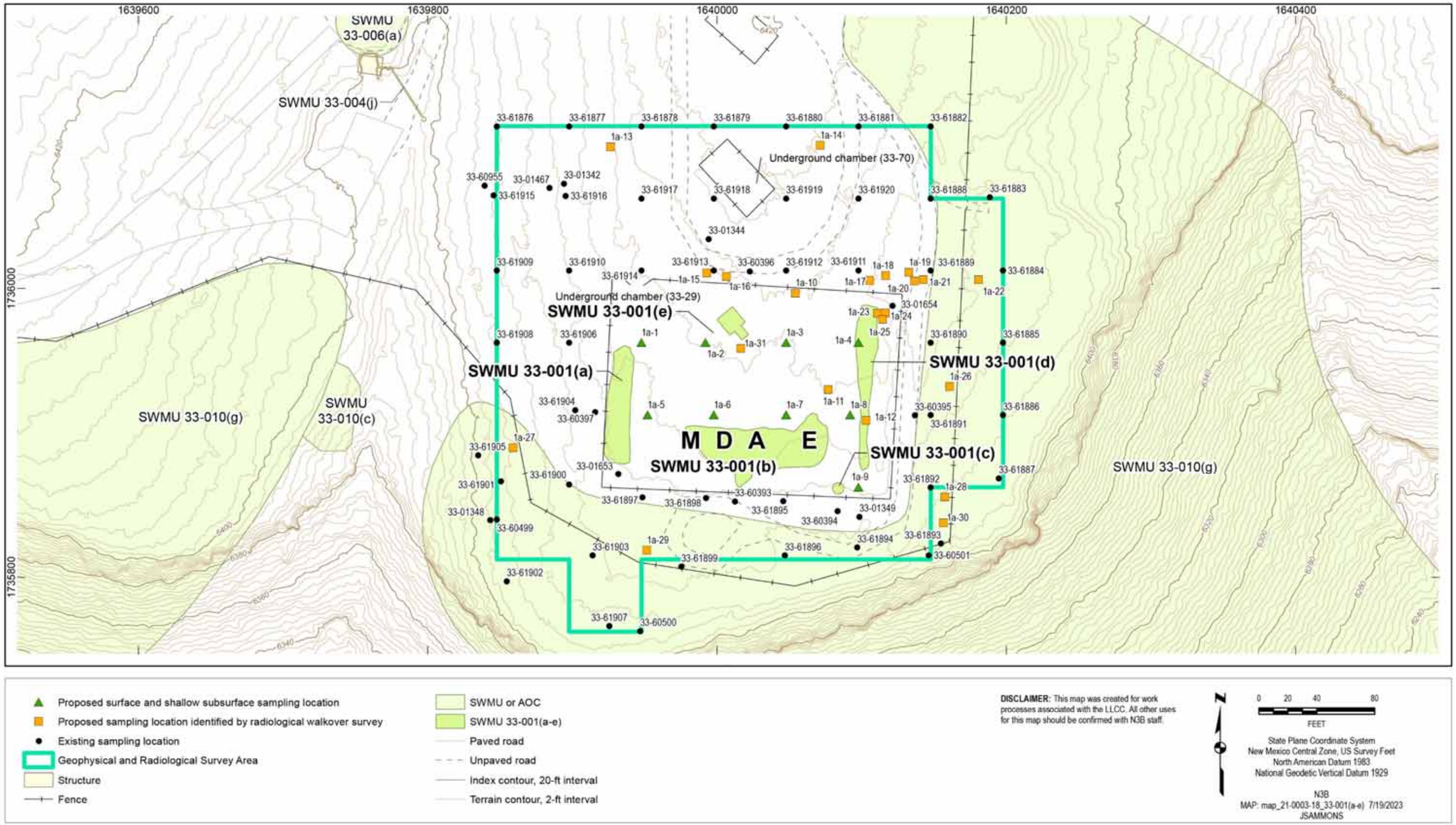


Figure 4.1-1 Site map and proposed sampling locations at MDA E

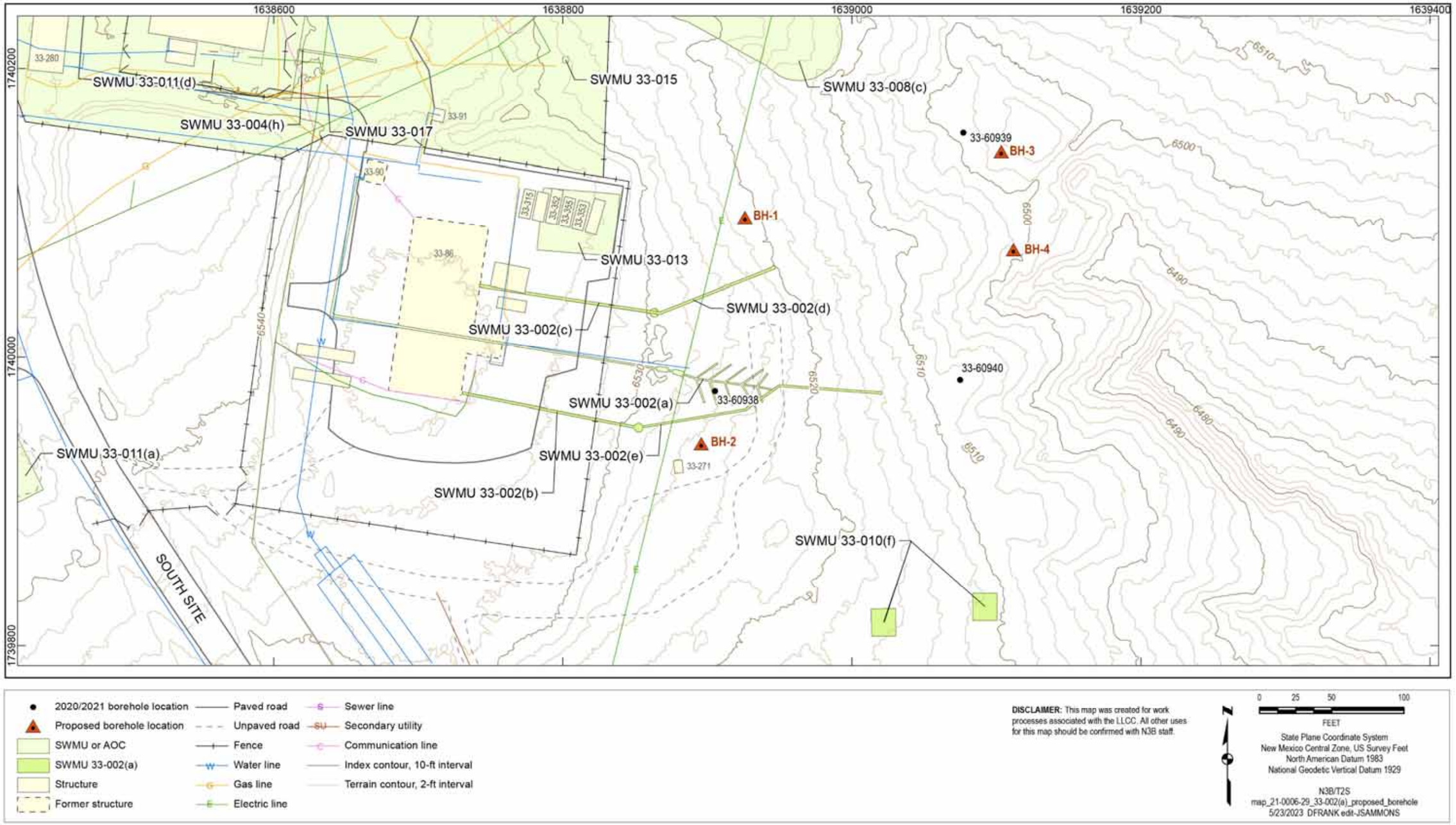


Figure 4.2-1 Site map and proposed sampling locations at MDA K

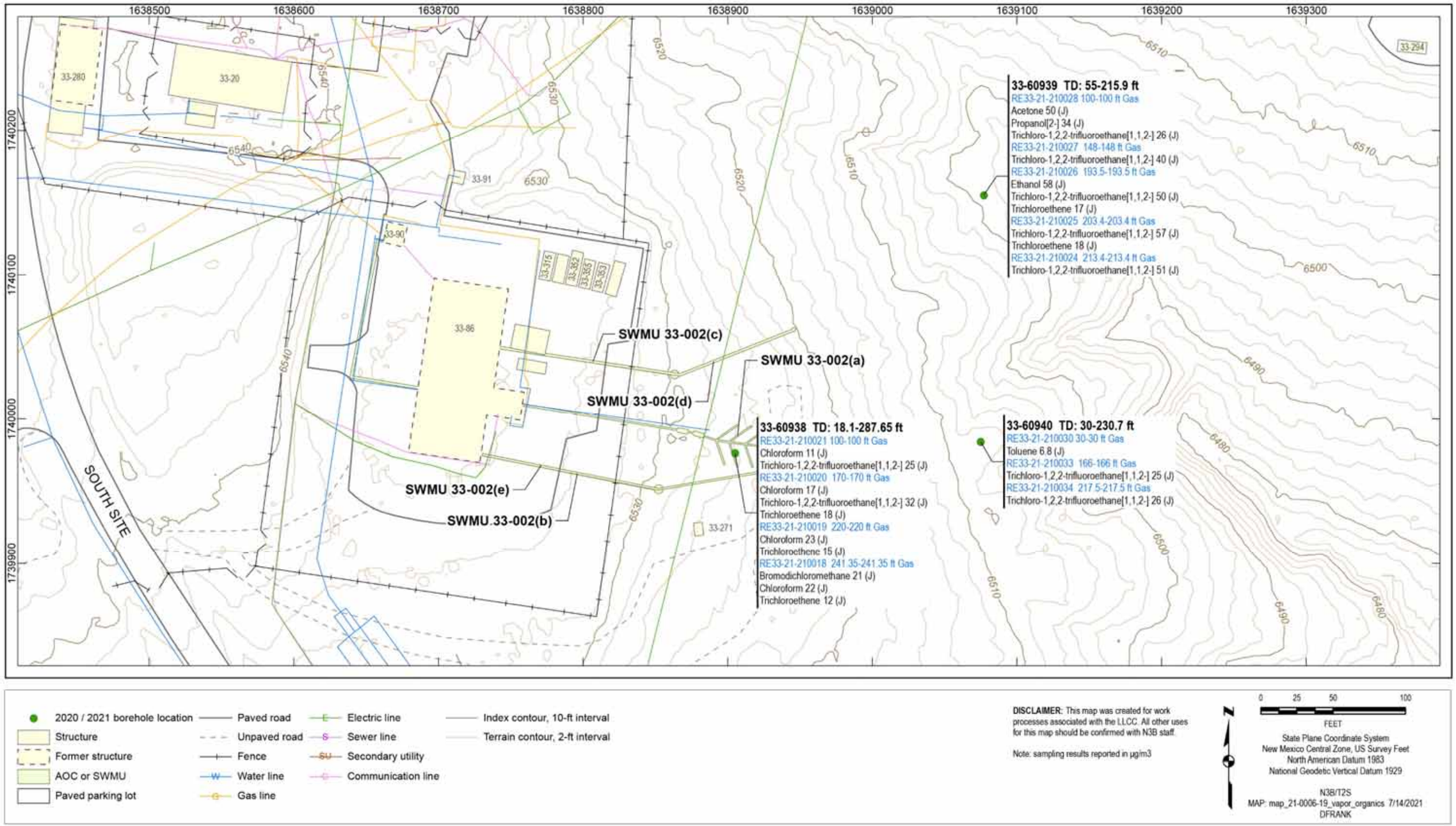


Figure 4.2-2 Organic chemicals detected in pore gas in boreholes at MDA K

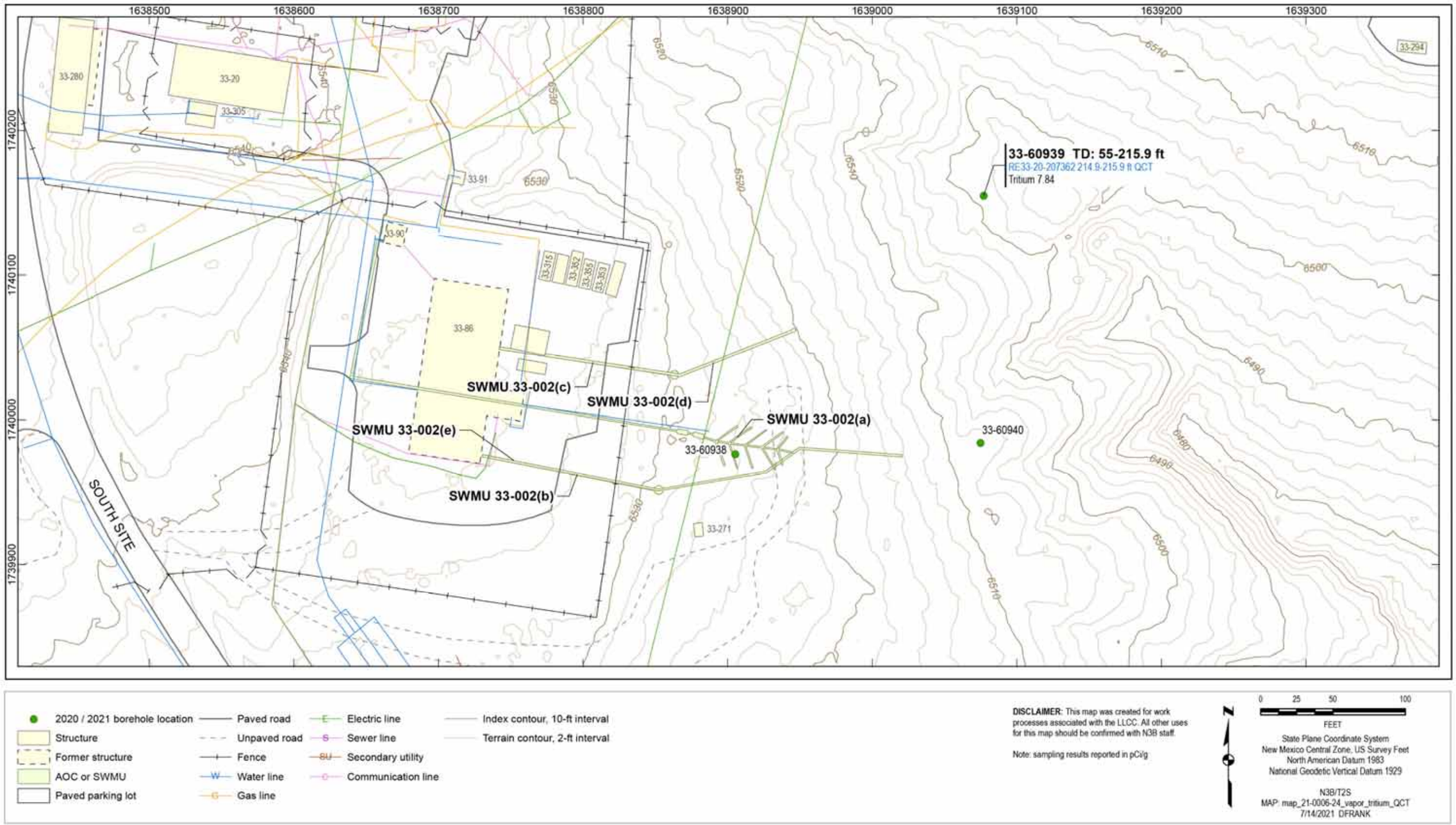


Figure 4.2-3 Tritium detected or detected above BVs/FVs in tuff in boreholes at MDA K

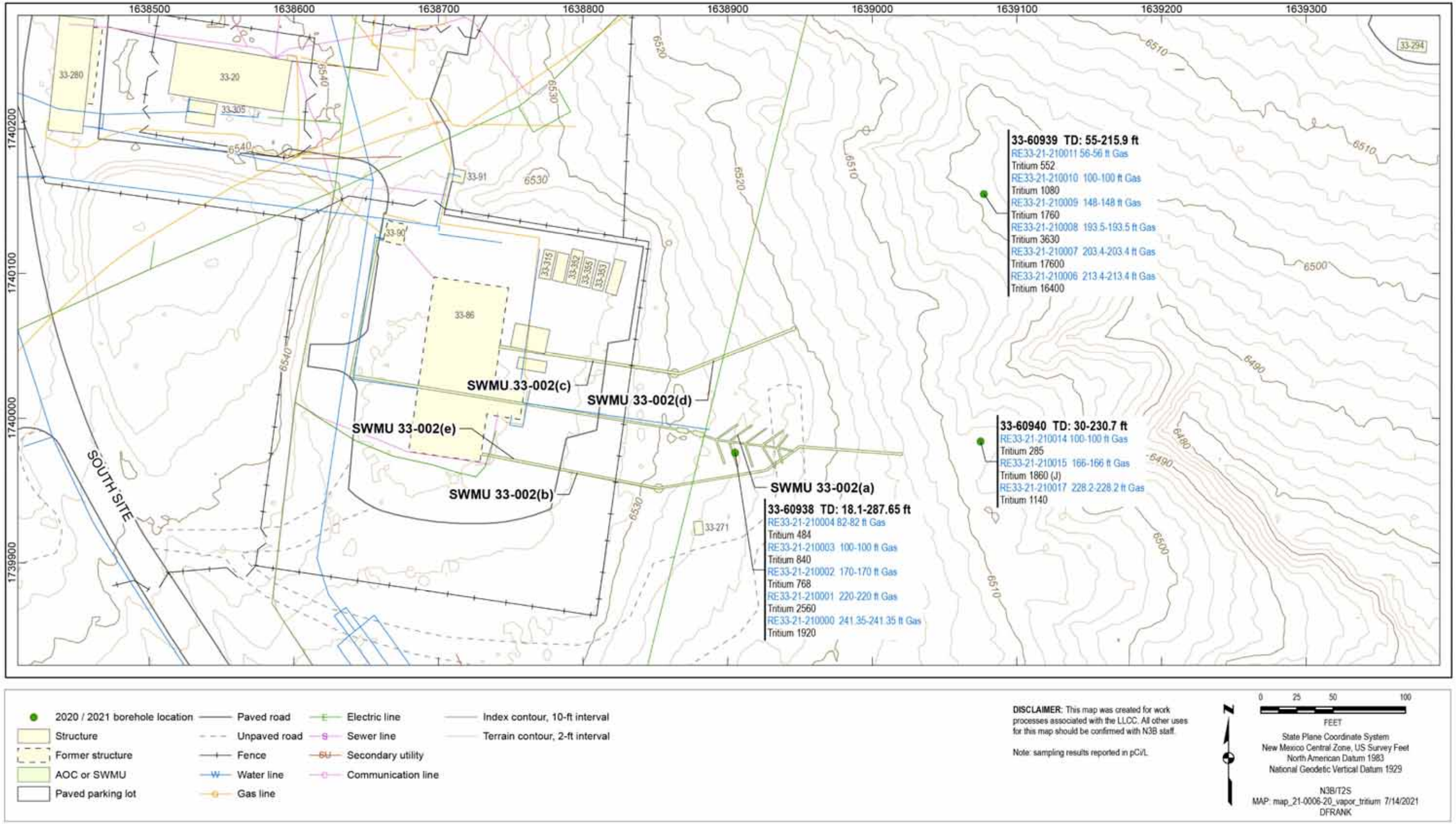


Figure 4.2-4 Tritium detected in pore gas in boreholes at MDA K

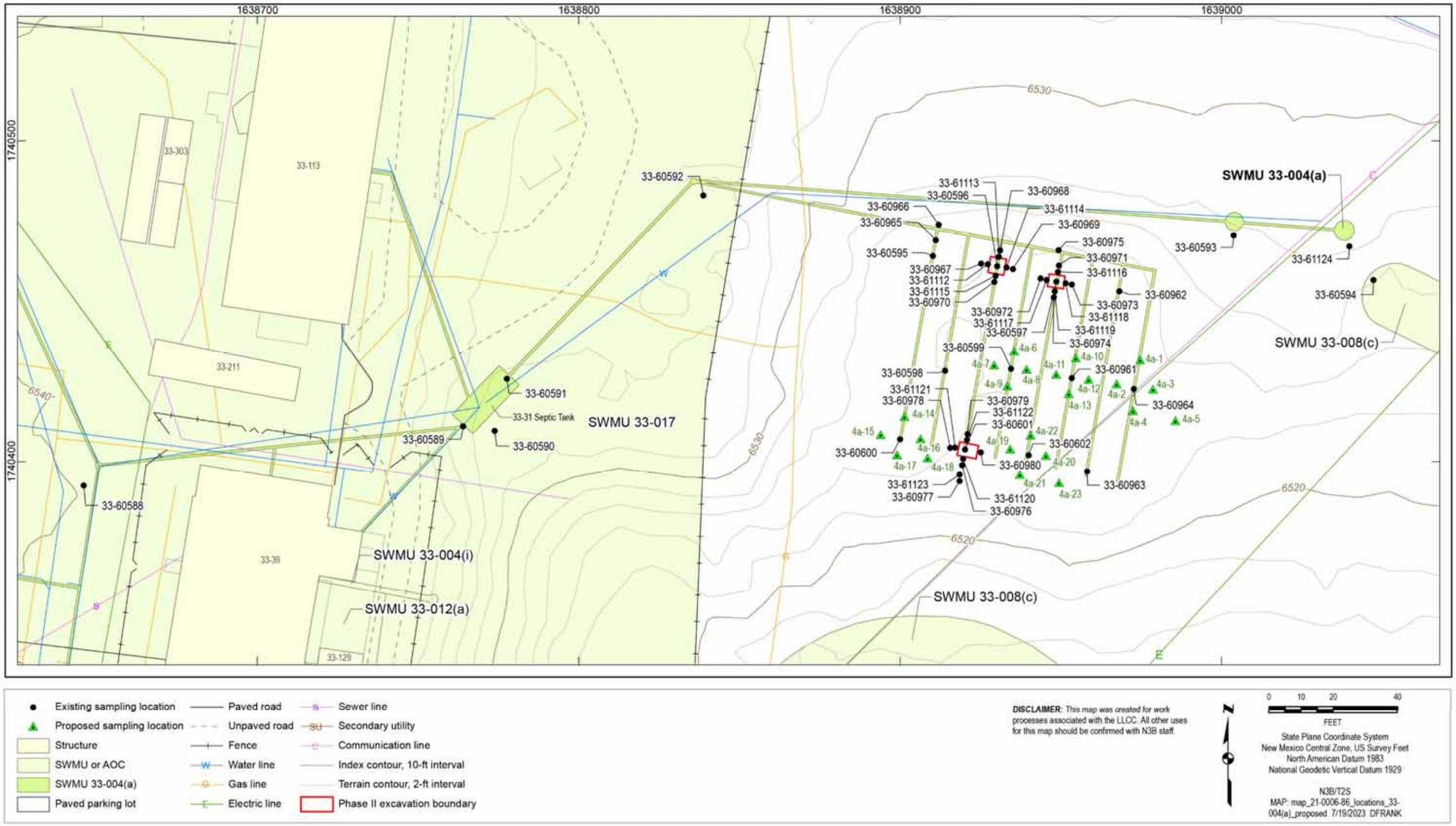


Figure 4.3-1 Site map and proposed sampling locations at SWMU 33-004(a)

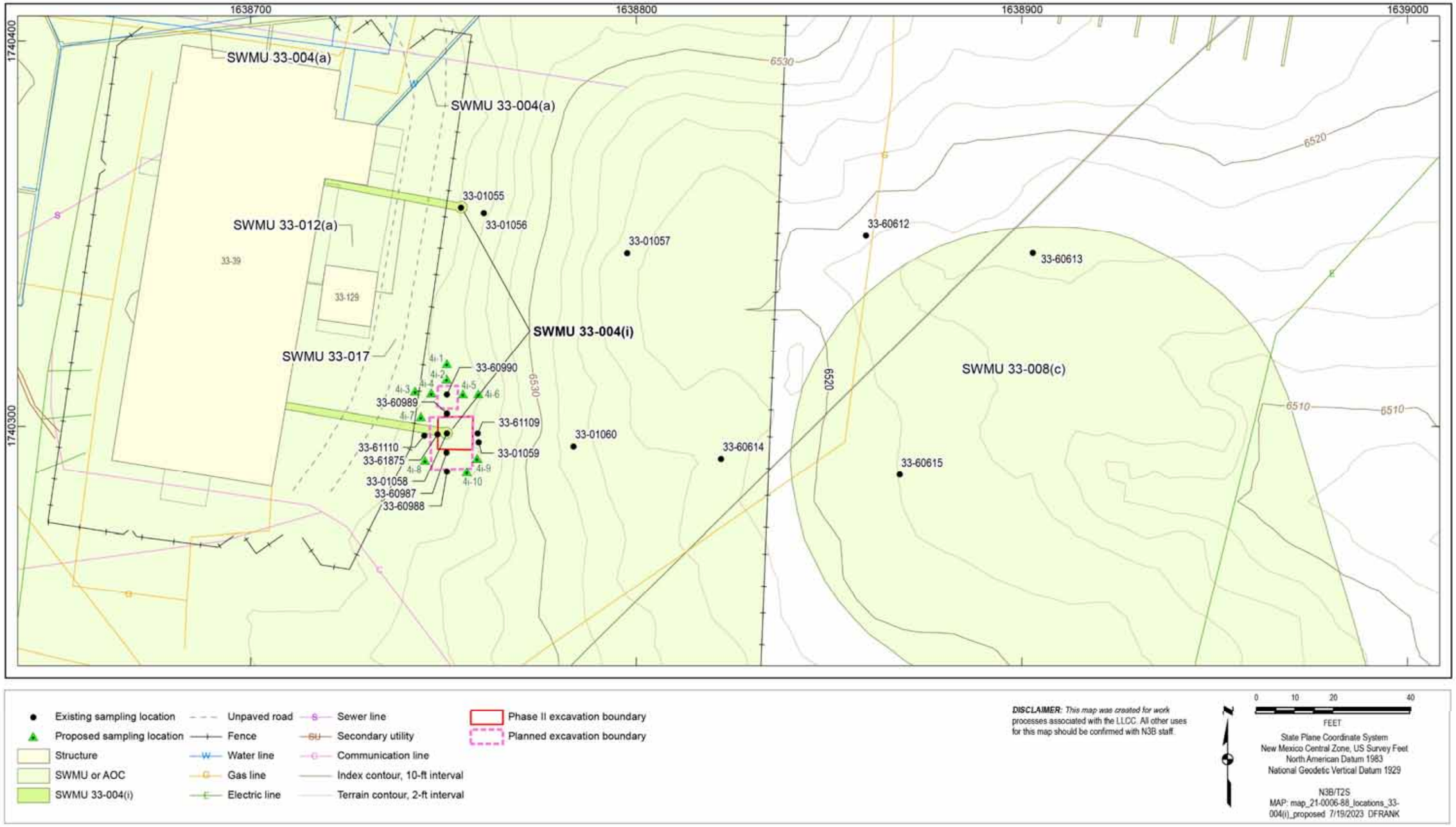


Figure 4.4-1 Site map and proposed sampling locations at SWMU 33-004(i)

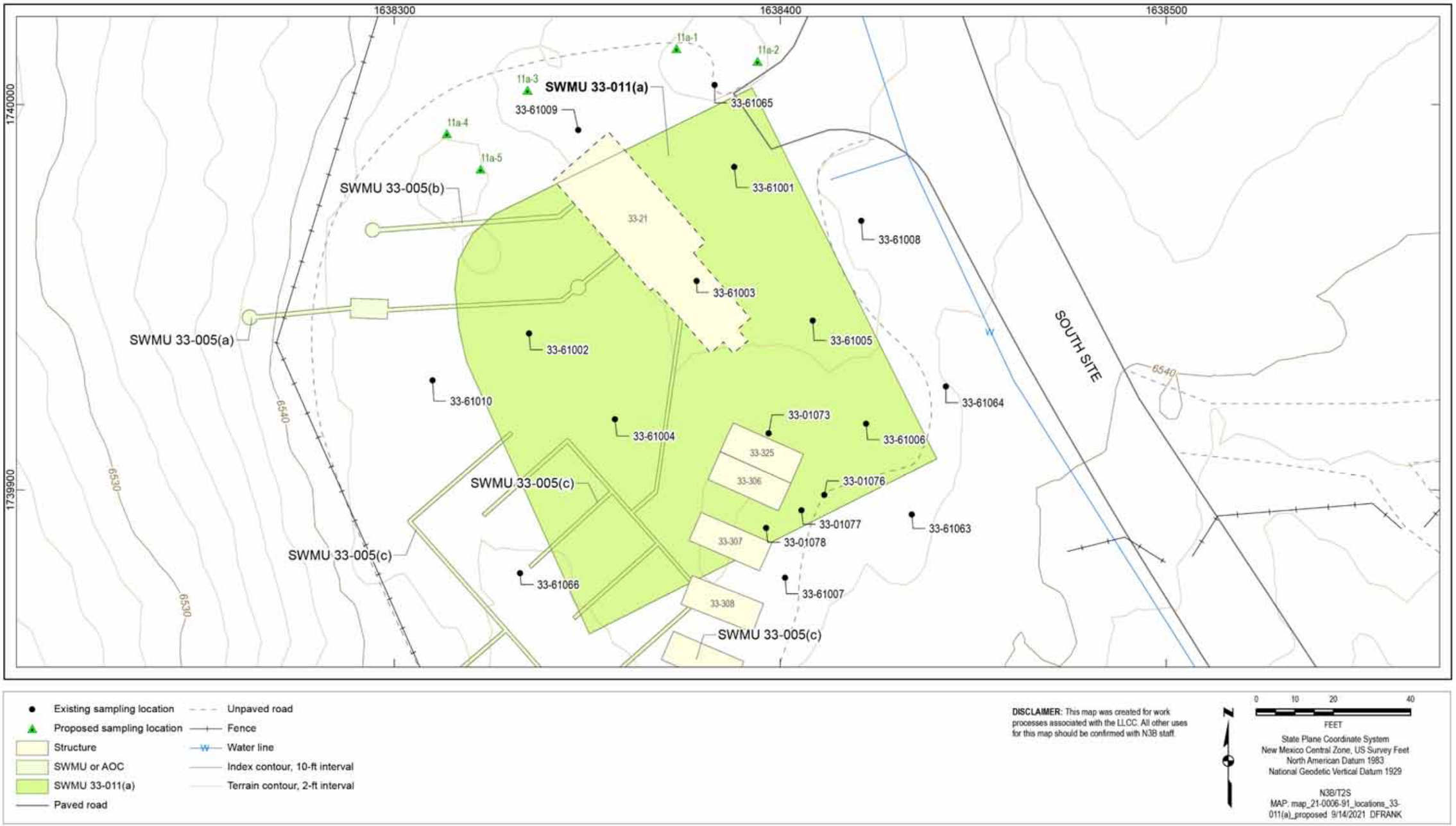


Figure 4.7-1 Site map and proposed sampling locations at SWMU 33-011(a)

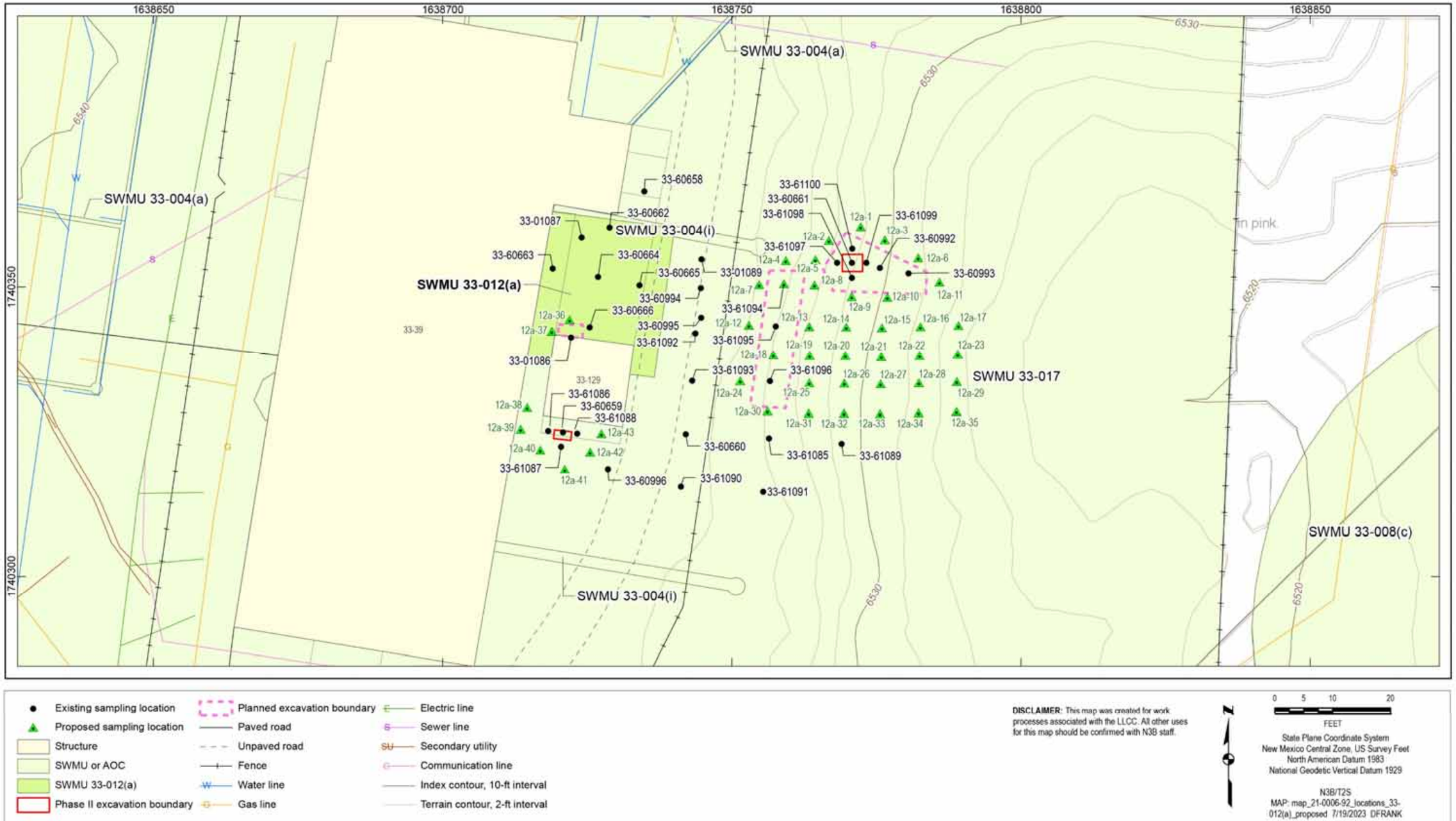


Figure 4.8-1 Site map and proposed sampling locations at SWMU 33-012(a)

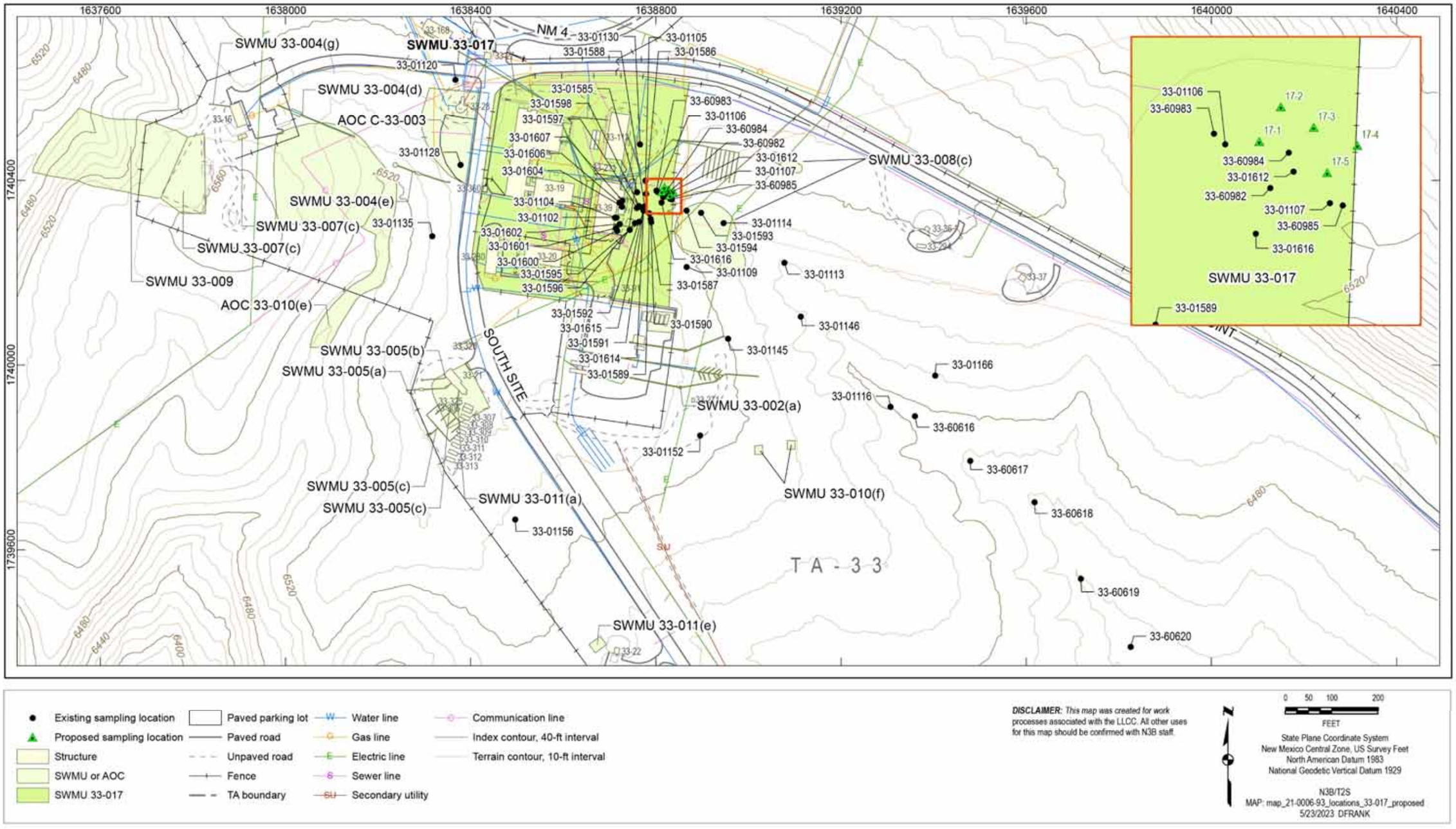


Figure 4.9-1 Site map and proposed sampling locations at SWMU 33-017

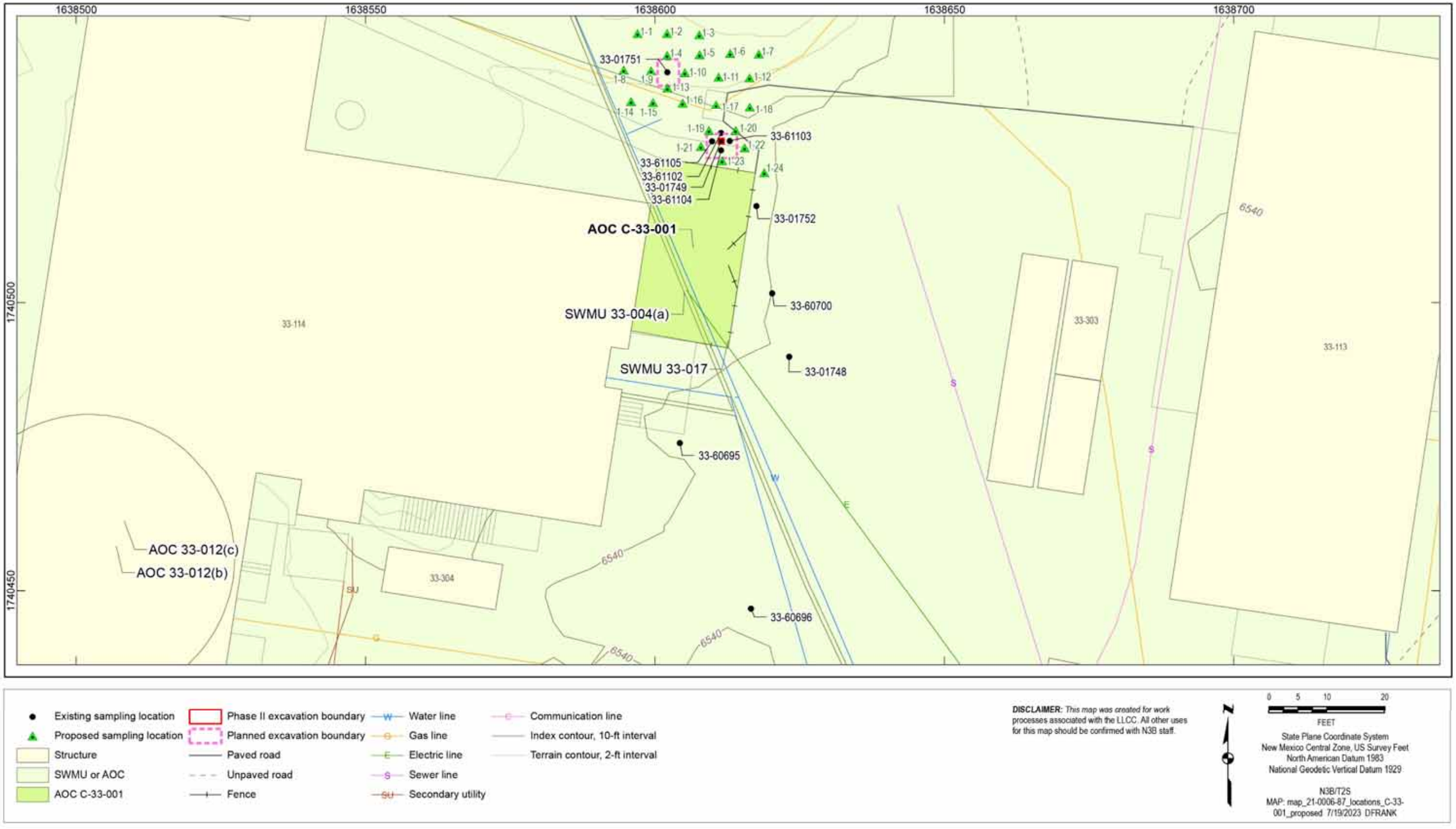


Figure 4.10-1 Site map and proposed sampling locations at AOC C-33-001

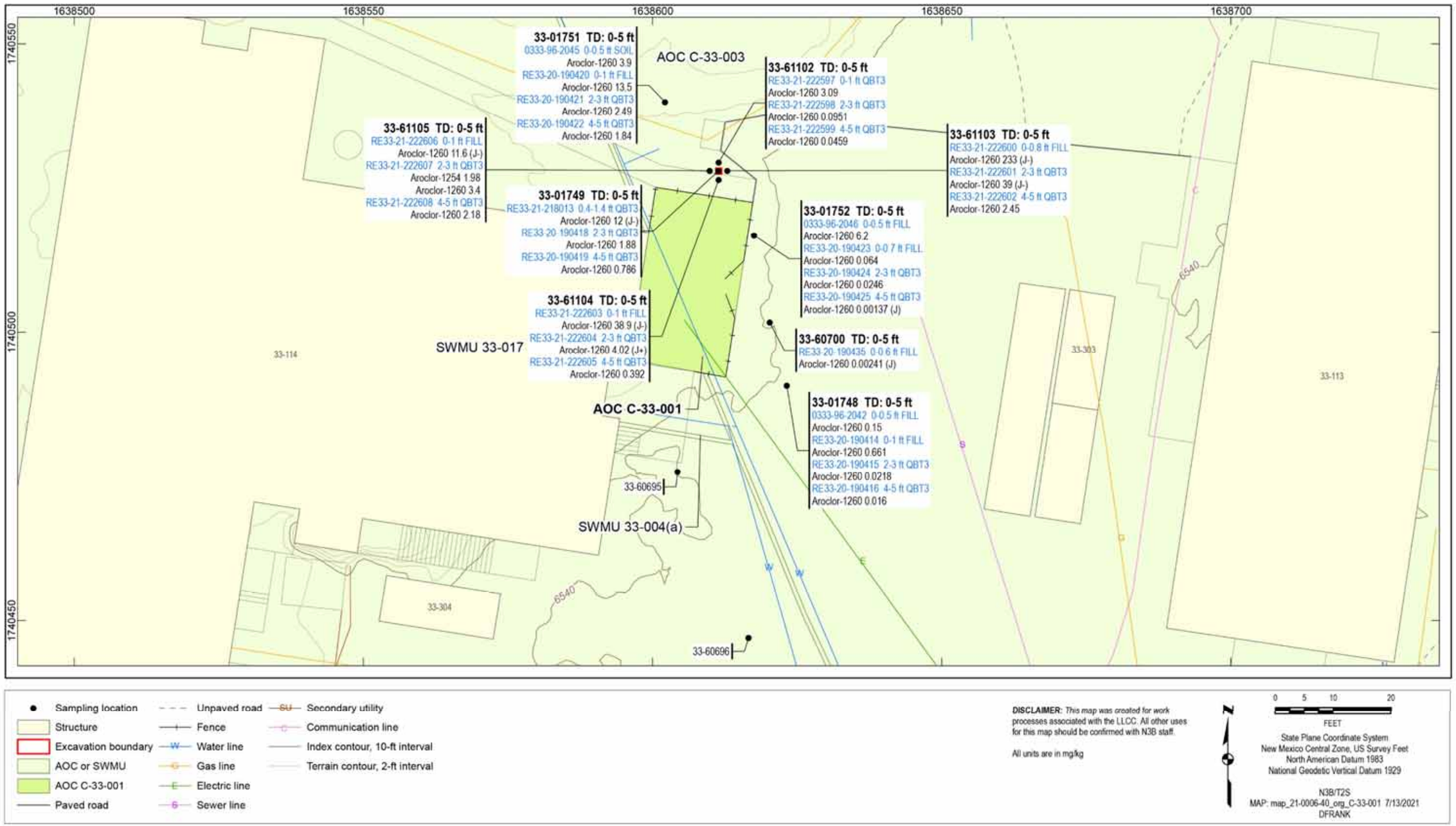


Figure 4.10-2 Organic chemicals detected at AOC C-33-001

Table 1.2-1
Sites under Phase III Investigation in the Chaquehui Canyon Aggregate Area

SWMU/AOC	Brief Description	Phase II Investigation Results	Proposed Activities
SWMU 33-001(a)	Disposal Pit (MDA E)	Nature and extent of contamination at MDA E are not defined.	Additional extent sampling
SWMU 33-001(b)	Disposal Pit (MDA E)	Nature and extent of contamination at MDA E are not defined.	Additional extent sampling
SWMU 33-001(c)	Disposal Pit (MDA E)	Nature and extent of contamination at MDA E are not defined.	Additional extent sampling
SWMU 33-001(d)	Disposal Pit (MDA E)	Nature and extent of contamination at MDA E are not defined.	Additional extent sampling
SWMU 33-001(e)	Soil Contamination from Underground Chamber and Shaft (MDA E)	Nature and extent of contamination at MDA E are not defined.	Additional extent sampling
SWMU 33-002(a)	Septic System (MDA K)	Nature and extent of subsurface tritium and VOC contamination in pore gas at MDA K are not defined.	Additional extent sampling
SWMU 33-002(b)	Sump (MDA K)	Nature and extent of subsurface tritium and VOC contamination in pore gas at MDA K are not defined.	Additional extent sampling
SWMU 33-002(c)	Sump (MDA K)	Nature and extent of subsurface tritium and VOC contamination in pore gas at MDA K are not defined.	Additional extent sampling
SWMU 33-002(d)	Drainline and Outfall from Former Building 33-86 (MDA K)	Nature and extent of subsurface tritium and VOC contamination in pore gas at MDA K are not defined.	Additional extent sampling
SWMU 33-002(e)	Drainline and Outfall from Former Building 33-86 (MDA K)	Nature and extent of subsurface tritium and VOC contamination in pore gas at MDA K are not defined.	Additional extent sampling
SWMU 33-004(a)	Septic System	Lateral extent of lead east of drainfield is not defined. Lateral extent of benzo(a)anthracene; benzo(a)pyrene; benzo(b)fluoranthene; dibenz(a,h)anthracene; and indeno(1,2,3-cd)pyrene south of locations 33-60599, 33-60600, 33-60602, and 33-60961 is not defined.	Additional extent sampling
SWMU 33-004(i)	Drainline and Outfall associated with Building 33-39	Lateral extent of Aroclor-1254 and Aroclor-1260 to the north of location 33-60990 is not defined.	Soil removal and additional extent sampling
SWMU 33-006(a)	Firing Site	Lateral extent of copper around locations 33-60415 and 33-60423 is not defined.	Additional extent sampling
SWMU 33-008(c)	Landfill	Lateral extent of copper north and east of locations 33-61953 and 33-61954 is not defined. Vertical extent of lead at location 33-61962 is not defined. Lateral extent of lead north and east of location 33-61953 and to the south of location 33-61962 is not defined. Lateral extent of mercury north and east of location 33-61954 is not defined. Lateral extent of benzo(a)anthracene; benzo(a)pyrene; benzo(b)fluoranthene; and dibenz(a,h)anthracene at locations 33-61956, 33-61957, and 33-61958 is not defined. Lateral extent of indeno(1,2,3-cd)pyrene at locations 33-61956 and 33-61958 is not defined.	Soil removal and additional extent sampling
SWMU 33-011(a)	Soil Contamination from Former Storage Area	Lateral extent of benzo(a)anthracene; benzo(a)pyrene; benzo(b)fluoranthene; dibenz(a,h)anthracene; and indeno(1,2,3-cd)pyrene north of locations 33-61009 and 33-61065 is not defined.	Additional extent sampling
SWMU 33-012(a)	Drum Storage Area	Vertical extent of Aroclor-1254 at location 33-61094 is not defined. Lateral extent of Aroclors-1254 and -1260 around location 33-60661 is not defined. Lateral extent of benzo(a)anthracene; benzo(a)pyrene; benzo(b)fluoranthene; dibenz(a,h)anthracene; and indeno(1,2,3-cd)pyrene around location 33-60659 is not defined.	Soil removal and additional extent sampling
SWMU 33-017	Operational Release	Lateral extent of lead at location 33-60984 is not defined.	Additional extent sampling
AOC C-33-001	Former Transformer	Lateral extent of Aroclor-1254 at location 33-61105 Is not defined. Lateral extent of Aroclor-1260 at location 33-01749 is not defined.	Soil removal and additional extent sampling

Table 4.1-1
Proposed Sampling and Analysis at MDA E

Sampling Objective	Location Number	Location Description	Depth[a] (ft)	TAL Metals (SW-846:6010D[b]/6020B[b]/7471B[b])	Cyanide (SW-846:9012A[b])	Nitrate (SW-846:9056A[b])	Perchlorate (SW-846:6850)	pH (SW-846-9045D[b])	VOCs (SW-846:8260D[b])	SVOCs (SW-846:8270E[b])	Explosive Compounds (SW-846:8330B[b])	PCBs (SW-846:8082A[b])	Isotopic Uranium (HASL-300)	Isotopic Plutonium (HASL-300)	Tritium (EPA 906.0)	Gamma-Emitting Radionuclides (EPA 901.1)
Determine nature and extent of contamination associated with a surface release from the disposal pits outside and inside the fence at MDA E	1a-1 through 1a-9	Grid spacing every 50 ft on the mesa top inside the MDA E fence	0.0–0.5 1.0–1.5	X[c]	X	X	X	X	—[d]	—	X	—	X	X	X	X
Determine nature and extent of contamination in areas with elevated readings above 2 times background identified by the radiological walkover survey	1a-10 through 1a-31	Areas that exceed 2 times background identified by the radiological walkover survey	0.0–0.5 1.0–1.5	X	X	X	X	X	—	—	X	—	X	X	X	X
Determine nature and extent of potential contamination associated with SWMUs 33-001(a–e)	To be determined	A mimimum of one location will be placed on each side of the geophysical anomalies identified by the geophysical surveys	2.0–3.0 4.0–5.0 7.0–8.0 9.0–10.0 14.0–15.0	X	X	X	X	X	X	X	X	X[e]	X	X	X	X

[a] Depths are below ground surface.

[b] Most recent promulgated, certified, and appropriate method will be used during field investigations.

[c] X = Analysis will be performed.

[d] — = Analysis will not be performed.

[e] 20% of samples collected will be analyzed for PCBs.

Table 4.2-1
Organic Chemicals Detected in Pore Gas at MDA K

Sample ID	Location ID	Depth (ft)	Media	Acetone	Bromodichloromethane	Chloroform	Ethanol	Propanol[2-]	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethene
Tier I Pore-Gas Screening Concentrations				**20,300**	**116**	**12,000**	**na**[a]	**136**	**272,000**	**1,190,000,000**	**2020**
RE33-21-210021	33-60938	100.0–100.0	Gas	—[b]	—	11 (J)	—	—	—	25 (J)	—
RE33-21-210020	33-60938	170.0–170.0	Gas	—	—	17 (J)	—	—	—	32 (J)	18 (J)
RE33-21-210019	33-60938	220.0–220.0	Gas	—	—	23 (J)	—	—	—	—	15 (J)
RE33-21-210018	33-60938	241.35–241.35	Gas	—	21 (J)	22 (J)	—	—	—	—	12 (J)
RE33-21-210028	33-60939	100.0–100.0	Gas	50 (J)	—	—	—	34 (J)	—	26 (J)	—
RE33-21-210027	33-60939	148.0–148.0	Gas	—	—	—	—	—	—	40 (J)	—
RE33-21-210026	33-60939	193.5–193.5	Gas	—	—	—	58 (J)	—	—	50 (J)	17 (J)
RE33-21-210025	33-60939	203.4–203.4	Gas	—	—	—	—	—	—	57 (J)	18 (J)
RE33-21-210024	33-60939	213.4–213.4	Gas	—	—	—	—	—	—	51 (J)	—
RE33-21-210030	33-60940	30.0–30.0	Gas	—	—	—	—	—	6.8 (J)	—	—
RE33-21-210033	33-60940	166.0–166.0	Gas	—	—	—	—	—	—	25 (J)	—
RE33-21-210034	33-60940	217.5–217.5	Gas	—	—	—	—	—	—	26 (J)	—

Notes: Results are in µg/m^3. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] — = Not detected.

Table 4.2-2
Radionuclides Detected above BVs/FVs in Tuff at MDA K

Sample ID	Location ID	Depth (ft)	Media	Tritium
Qct Background Value[a]				**0.3**
Construction Worker SAL[b]				**1,600,000**
Industrial SAL[b]				**2,400,000**
Residential SAL[b]				**1700**
RE33-20-207362	33-60939	214.9–215.9	QCT	7.84

Note: Results are in pCi/g.

[a] BVs from LANL (1998, 059730).

[b] SALs from LANL (2015, 600929).

Table 4.2-3
Radionuclides Detected in Pore Gas at MDA K

Sample ID	Location ID	Depth (ft)	Media	Tritium
Tier I Pore-Gas Maximum Contaminant Level*				**20,000**
RE33-21-210004	33-60938	82.0–82.0	Gas	484.024
RE33-21-210003	33-60938	100.0–100.0	Gas	839.911
RE33-21-210002	33-60938	170.0–170.0	Gas	768.004
RE33-21-210001	33-60938	220.0–220.0	Gas	2563.48
RE33-21-210000	33-60938	241.35–241.35	Gas	1915.01
RE33-21-210011	33-60939	56.0–56.0	Gas	551.886
RE33-21-210010	33-60939	100.0–100.0	Gas	1078.65
RE33-21-210009	33-60939	148.0–148.0	Gas	1757.64
RE33-21-210008	33-60939	193.5–193.5	Gas	3631.89
RE33-21-210007	33-60939	203.4–203.4	Gas	17,627.2
RE33-21-210006	33-60939	213.4–213.4	Gas	16,407.9
RE33-21-210014	33-60940	100.0–100.0	Gas	284.735
RE33-21-210015	33-60940	166.0–166.0	Gas	1864.57 (J)
RE33-21-210017	33-60940	228.2–228.2	Gas	1142.82

Note: Results are in pCi/L. Data qualifiers are presented in Appendix A.

*Maximum contaminant level from the Safe Drinking Water Act.

Table 4.2-4
Proposed Sampling and Analysis at MDA K

Sampling Objective	Location Number	Location Description	Depth[a] (ft)	Tritium (EPA 906.0)	VOCs (EPA TO-15)
Collect vapor samples from 6 ports at vapor monitoring well 33-60938	Well 33-60938 Ports 1 through 6	Borehole 33-60938	19.0 82.0 100.0 170.0 220.0 241.35	X[b]	X
Collect vapor samples from 6 ports at vapor monitoring well 33-60939	Well 33-60939 Ports 1 through 6	Borehole 33-60939	56.0 100.0 148.0 193.5 203.4 213.4	X	X
Collect vapor samples from 6 ports at vapor monitoring well 33-60940	Well 33-60940 Ports 1 through 6	Borehole 33-60940	30.0 68.0 100.0 166.0 217.5 228.2	X	X
Collect rock samples from 6 depths each at 4 new wells	BH-1, BH-2, BH-3, BH-4	BH-1 through BH-4	To be determined	X	—[c]
Collect vapor samples from 6 ports at 4 new wells	BH-1, BH-2, BH-3, BH-4	BH-1 through BH-4	To be determined	X	X

[a] Depths are below ground surface.

[b] X = Analysis will be performed.

[c] — = Analysis will not be performed.

Table 4.3-1
Inorganic Chemicals above BVs at SWMU 33-004(a)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Chromium	Copper	Cyanide (Total)	Lead	Mercury	Nitrate	Perchlorate	Selenium	Silver	Zinc
Soil Background Value[a]				**0.83**	**295**	**0.4**	**6120**	**19.3**	**14.7**	**0.5**	**22.3**	**0.1**	**na**[b]	**na**	**1.52**	**1**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.63**	**2220**	**7.14**	**4.66**	**0.5**	**11.2**	**0.1**	**na**	**na**	**0.3**	**1**	**63.5**
Construction Worker SSL[c]				**142**	**4390**	**72.1**	**na**	**134**[d]	**14,200**	**12.1**	**800**	**77.1**	**566,000**	**248**	**1750**	**1770**	**106,000**
Industrial SSL[c]				**519**	**255,000**	**1110**	**na**	**505**[d]	**51,900**	**63.3**	**800**	**389**	**2,080,000**	**908**	**6490**	**6490**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**70.5**	**na**	**96.6**[d]	**3130**	**11.2**	**400**	**23.5**	**125,000**	**54.8**	**391**	**391**	**23,500**
RE33-20-189907	33-60588	7.1–8.1	QBT3	0.903 (U)	—[e]	—	—	21.8	—	—	—	—	5.34	—	0.675 (J)	—	—
RE33-20-189912	33-60588	10.0–11.0	QBT3	—	—	—	—	29.6	—	—	—	—	3.24	—	2.51	—	—
RE33-20-189908	33-60589	7.4–8.4	FILL	—	—	—	—	—	—	—	—	0.172 (J+)	16.5	—	2.33	—	—
RE33-20-189913	33-60589	10.4–11.3	FILL	—	—	—	—	—	—	—	—	—	14.6	—	2.45	—	—
RE33-20-189909	33-60590	9.5–10.5	QBT3	—	—	—	—	16.1	5.73	—	—	—	103	—	0.749 (J)	—	—
RE33-20-189914	33-60590	12.5–13.5	QBT3	—	—	—	—	24.6	—	—	—	—	23.3	—	0.848 (J)	—	—
RE33-20-189910	33-60591	7.4–7.9	FILL	—	—	—	—	—	—	—	—	—	4.26	—	—	—	55.8
RE33-20-189915	33-60591	10.4–11.4	QBT3	—	—	—	—	25	—	—	—	—	1.92	—	0.79 (J)	—	—
RE33-20-189911	33-60592	9.2–10.2	QBT3	—	—	—	—	23.7	—	—	—	—	9.38	—	0.998 (J)	—	—
RE33-20-189916	33-60592	12.2–13.2	QBT3	0.501 (U)	—	—	—	48.4	—	—	—	—	5.72	—	0.942 (J)	—	—
RE33-20-189957	33-60593	9.0–10	QBT3	—	—	—	—	—	—	—	—	—	1.86	0.000577 (J)	1.35	—	—
RE33-20-189958	33-60593	19.0–20.0	QBT2	—	—	—	—	—	—	—	—	—	1.52	0.00075 (J)	0.567 (J)	—	—
RE33-20-189959	33-60593	29.0–30.0	QBT2	—	—	—	—	—	—	—	—	—	1.41	—	1.14	—	—
RE33-20-189960	33-60593	39.0–40.0	QBT2	—	—	—	—	—	—	—	—	—	1.66	0.000759 (J)	0.969	—	—
RE33-20-189961	33-60593	52.0–53.0	QBT2	—	—	7.99	—	—	—	—	—	—	2	—	1.1	—	—
RE33-20-189962	33-60593	60.0–61.0	QBT2	—	—	—	—	—	—	—	—	—	2.51	—	1.14	—	—
RE33-20-189963	33-60593	74.5–75.5	QBT2	—	—	—	—	—	—	—	—	—	1.93	—	1.09	—	—
RE33-20-189964	33-60594	9.0–10.0	QBT3	—	—	—	—	—	—	—	—	—	—	0.00106 (J)	0.915 (J)	—	—
RE33-20-189965	33-60594	19.0–20.0	QBT2	—	—	—	—	—	—	—	—	—	0.587 (J)	0.000931 (J)	0.72 (J)	—	—
RE33-20-189966	33-60594	29.0–30.0	QBT2	—	—	—	—	—	—	—	—	—	—	0.000694 (J)	0.898 (J)	—	—
RE33-20-189967	33-60594	39.0–40.0	QBT2	—	—	—	—	—	—	—	—	—	—	—	0.915 (J)	—	—
RE33-20-189968	33-60594	52.5–53.5	QBT2	—	—	—	—	—	—	—	—	—	—	—	0.971	—	—
RE33-20-189969	33-60594	59.0–60.0	QBT2	—	—	—	—	—	—	—	—	—	—	—	0.98 (J)	—	—
RE33-20-189970	33-60594	69.0–70.0	QBT2	—	—	—	—	—	—	—	—	—	0.67 (J)	—	0.967 (J)	—	—
RE33-20-189971	33-60595	2.1–2.9	FILL	—	—	—	—	—	25.9	—	73.1	0.261	22.2	—	—	1.5	74.5
RE33-20-189979	33-60595	4.1–5.1	QBT3	—	55.6	—	—	24.7	4.87	—	—	—	7.85	—	0.898 (J)	—	—

Table 4.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Chromium	Copper	Cyanide (Total)	Lead	Mercury	Nitrate	Perchlorate	Selenium	Silver	Zinc
Soil Background Value[a]				**0.83**	**295**	**0.4**	**6120**	**19.3**	**14.7**	**0.5**	**22.3**	**0.1**	**na**[b]	**na**	**1.52**	**1**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.63**	**2220**	**7.14**	**4.66**	**0.5**	**11.2**	**0.1**	**na**	**na**	**0.3**	**1**	**63.5**
Construction Worker SSL[c]				**142**	**4390**	**72.1**	**na**	**134**[d]	**14,200**	**12.1**	**800**	**77.1**	**566,000**	**248**	**1750**	**1770**	**106,000**
Industrial SSL[c]				**519**	**255,000**	**1110**	**na**	**505**[d]	**51,900**	**63.3**	**800**	**389**	**2,080,000**	**908**	**6490**	**6490**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**70.5**	**na**	**96.6**[d]	**3130**	**11.2**	**400**	**23.5**	**125,000**	**54.8**	**391**	**391**	**23,500**
RE33-20-189987	33-60595	6.1–7.1	QBT3	—	—	—	—	18.7	—	—	—	—	5.82	—	0.898 (J)	—	—
RE33-20-189980	33-60596	3.6–4.6	QBT3	—	—	—	—	29.4	—	—	—	—	3.11	—	1.13	—	—
RE33-20-189988	33-60596	5.6–6.6	QBT3	—	—	—	—	11.8	—	—	—	—	3.81	—	1.44	—	—
RE33-20-189981	33-60597	3.7–4.7	QBT3	—	—	—	—	64.1	—	—	—	—	3.69	—	1.06	—	—
RE33-20-189989	33-60597	5.7–6.7	QBT3	—	—	—	—	24.5	6.19	—	11.4 (J+)	—	3.37	—	1.02	—	—
RE33-20-189974	33-60598	1.9–2.9	FILL	—	—	—	—	—	—	—	—	0.132 (J-)	9.56	—	—	—	54.9
RE33-20-189982	33-60598	3.9–4.9	QBT3	—	—	—	—	35	—	—	—	—	4.37	—	1.01 (J)	—	—
RE33-20-189990	33-60598	5.9–6.9	QBT3	—	—	—	—	53.9	—	—	—	—	3.86	—	1.08	—	—
RE33-20-189975	33-60599	1.5–2.3	FILL	—	—	—	—	—	15	—	28.2 (J+)	0.183 (J-)	12.6	—	—	—	52.9
RE33-20-189983	33-60599	3.5–4.5	QBT3	—	—	—	—	14.6	—	—	—	—	4.02	—	1.04	—	—
RE33-20-189991	33-60599	5.5–6.5	QBT3	—	—	—	—	11.1	—	—	—	—	2.86	—	1.35	—	—
RE33-20-189976	33-60600	2.2–3.2	FILL	—	—	—	—	—	—	—	—	—	32.5	—	—	—	—
RE33-20-189984	33-60600	4.2–5.2	QBT3	—	—	—	—	21	—	—	—	—	1.5	—	0.777 (J)	—	—
RE33-20-189992	33-60600	6.2–7.2	QBT3	—	—	—	—	32.6	—	—	—	—	1.46	—	0.716 (J)	—	—
RE33-20-189985	33-60601	3.8–4.8	QBT3	—	—	—	—	25.4	—	—	—	—	33.2	—	1.06	—	—
RE33-20-189993	33-60601	5.8–6.8	QBT3	—	—	—	—	25	—	0.532	—	—	8.87	—	1.34	—	—
RE33-20-189978	33-60602	1.9–2.8	FILL	—	—	0.487 (J)	—	—	32.8	—	44.7 (J+)	0.31 (J-)	35	—	—	—	50.2
RE33-20-189986	33-60602	3.9–4.9	QBT3	—	—	—	—	17	—	—	—	—	17.8	—	0.933 (J)	—	—
RE33-20-189994	33-60602	5.9–6.9	QBT3	—	—	—	—	22.6	—	—	—	—	3.71	—	1.2	—	—
RE33-21-217780	33-60961	2.1–2.7	FILL	—	—	0.431 (J)	—	—	34.8	—	95.9	1.32	30.3	0.000538 (J)	—	2.99	—
RE33-21-217781	33-60961	4.1–5.1	QBT3	—	—	—	—	—	—	—	—	—	1.6	—	1.01	—	—
RE33-21-217782	33-60961	6.1–7.1	QBT3	0.655 (J)	—	—	—	—	—	—	—	—	5.11	—	1.1	—	—
RE33-21-217783	33-60962	1.9–2.7	QBT3	—	—	—	—	—	8.07	—	13 (J+)	0.153 (J)	5.55	—	1.23	—	—
RE33-21-217784	33-60962	3.7–4.7	QBT3	—	—	—	—	—	—	—	—	—	16.8	—	1.31	—	—
RE33-21-217785	33-60962	5.7–6.7	QBT3	—	—	—	—	—	—	—	—	—	13.1	—	1.29	—	—
RE33-21-217786	33-60963	1.6–2.6	ALLH	—	—	1.19	—	—	47.1	—	56.8	0.197	47.6	—	—	—	85.3
RE33-21-217787	33-60963	3.6–4.6	QBT3	—	—	—	—	—	—	—	—	—	19.8	—	1.21	—	—
RE33-21-217788	33-60963	5.6–6.6	QBT3	—	—	—	—	—	—	—	—	—	10.5	—	1.14	—	—

Table 4.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Chromium	Copper	Cyanide (Total)	Lead	Mercury	Nitrate	Perchlorate	Selenium	Silver	Zinc
Soil Background Value[a]				**0.83**	**295**	**0.4**	**6120**	**19.3**	**14.7**	**0.5**	**22.3**	**0.1**	**na**[b]	**na**	**1.52**	**1**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.63**	**2220**	**7.14**	**4.66**	**0.5**	**11.2**	**0.1**	**na**	**na**	**0.3**	**1**	**63.5**
Construction Worker SSL[c]				**142**	**4390**	**72.1**	**na**	**134**[d]	**14,200**	**12.1**	**800**	**77.1**	**566,000**	**248**	**1750**	**1770**	**106,000**
Industrial SSL[c]				**519**	**255,000**	**1110**	**na**	**505**[d]	**51,900**	**63.3**	**800**	**389**	**2,080,000**	**908**	**6490**	**6490**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**70.5**	**na**	**96.6**[d]	**3130**	**11.2**	**400**	**23.5**	**125,000**	**54.8**	**391**	**391**	**23,500**
RE33-21-217789	33-60964	1.6–2.6	FILL	—	—	1.74	—	36.4	101	—	155	1.34	15.2	—	—	3.35	85.4
RE33-21-217790	33-60964	3.6–4.6	QBT3	—	—	—	—	—	—	—	—	—	3.95	—	1.09	—	—
RE33-21-217791	33-60964	5.6–6.6	QBT3	—	—	—	—	—	—	—	—	—	4.34	—	1.28	—	—
RE33-21-217798	33-60967	1.6–2.25	QBT3	NA[f]	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217799	33-60967	3.6–4.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217800	33-60967	5.6–6.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217801	33-60968	1.6–2.3	FILL	NA	NA	NA	NA	NA	NA	NA	NA	0.412	NA	NA	NA	NA	NA
RE33-21-217802	33-60968	3.6–4.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217803	33-60968	5.6–6.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217804	33-60969	1.6–2.25	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217805	33-60969	3.6–4.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217806	33-60969	5.6–6.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217807	33-60970	1.6–2.25	FILL	NA	NA	NA	NA	NA	NA	NA	NA	0.303	NA	NA	NA	NA	NA
RE33-21-217808	33-60970	3.6–4.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217809	33-60970	5.6–6.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217810	33-60971	1.7–2.4	FILL	NA	NA	NA	NA	NA	NA	NA	NA	0.54 (J+)	NA	NA	NA	NA	NA
RE33-21-217811	33-60971	3.7–4.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217812	33-60971	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217813	33-60972	1.7–2.4	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217814	33-60972	3.7–4.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217815	33-60972	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217816	33-60973	1.7–2.4	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217817	33-60973	3.7–4.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217818	33-60973	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217819	33-60974	1.7–2.4	FILL	NA	NA	NA	NA	NA	NA	NA	NA	0.232 (J+)	NA	NA	NA	NA	NA
RE33-21-217820	33-60974	3.7–4.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-217821	33-60974	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222772	33-61112	1.6–2.25	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA

Table 4.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Chromium	Copper	Cyanide (Total)	Lead	Mercury	Nitrate	Perchlorate	Selenium	Silver	Zinc
Soil Background Value[a]				**0.83**	**295**	**0.4**	**6120**	**19.3**	**14.7**	**0.5**	**22.3**	**0.1**	**na**[b]	**na**	**1.52**	**1**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.63**	**2220**	**7.14**	**4.66**	**0.5**	**11.2**	**0.1**	**na**	**na**	**0.3**	**1**	**63.5**
Construction Worker SSL[c]				**142**	**4390**	**72.1**	**na**	**134**[d]	**14,200**	**12.1**	**800**	**77.1**	**566,000**	**248**	**1750**	**1770**	**106,000**
Industrial SSL[c]				**519**	**255,000**	**1110**	**na**	**505**[d]	**51,900**	**63.3**	**800**	**389**	**2,080,000**	**908**	**6490**	**6490**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**70.5**	**na**	**96.6**[d]	**3130**	**11.2**	**400**	**23.5**	**125,000**	**54.8**	**391**	**391**	**23,500**
RE33-21-222773	33-61112	3.6–4.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222774	33-61112	5.6–6.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222775	33-61113	1.6–2.25	FILL	NA	NA	NA	NA	NA	NA	NA	NA	0.573	NA	NA	NA	NA	NA
RE33-21-222776	33-61113	3.6–4.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222777	33-61113	5.6–6.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222778	33-61114	1.6–2.25	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222779	33-61114	3.6–4.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222780	33-61114	5.6–6.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222781	33-61115	1.6–2.25	FILL	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222782	33-61115	3.6–4.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222783	33-61115	5.6–6.6	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222784	33-61116	1.7–2.4	FILL	NA	NA	NA	NA	NA	NA	NA	NA	1.11 (J+)	NA	NA	NA	NA	NA
RE33-21-222785	33-61116	3.7–4.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	0.13 (J+)	NA	NA	NA	NA	NA
RE33-21-222786	33-61116	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222787	33-61117	1.7–2.4	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222788	33-61117	3.7–4.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222789	33-61117	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222790	33-61118	1.7–2.4	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222791	33-61118	3.7–4.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222792	33-61118	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222793	33-61119	1.7–2.4	FILL	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222794	33-61119	3.7–4.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA
RE33-21-222795	33-61119	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA

Table 4.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Chromium	Copper	Cyanide (Total)	Lead	Mercury	Nitrate	Perchlorate	Selenium	Silver	Zinc
Soil Background Value[a]				**0.83**	**295**	**0.4**	**6120**	**19.3**	**14.7**	**0.5**	**22.3**	**0.1**	**na**[b]	**na**	**1.52**	**1**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.63**	**2220**	**7.14**	**4.66**	**0.5**	**11.2**	**0.1**	**na**	**na**	**0.3**	**1**	**63.5**
Construction Worker SSL[c]				**142**	**4390**	**72.1**	**na**	**134**[d]	**14,200**	**12.1**	**800**	**77.1**	**566,000**	**248**	**1750**	**1770**	**106,000**
Industrial SSL[c]				**519**	**255,000**	**1110**	**na**	**505**[d]	**51,900**	**63.3**	**800**	**389**	**2,080,000**	**908**	**6490**	**6490**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**70.5**	**na**	**96.6**[d]	**3130**	**11.2**	**400**	**23.5**	**125,000**	**54.8**	**391**	**391**	**23,500**
RE33-21-222808	33-61124	5.0–6.0	QBT3	—	—	—	2300 (J)	—	—	—	—	—	1.7	—	1.77	—	—
RE33-21-222809	33-61124	9.0–10.0	QBT3	—	—	—	2360 (J)	—	—	—	—	—	1.43	0.00111 (J)	1.6	—	—
RE33-21-222810	33-61124	19.0–19.8	QBT3	—	—	—	—	—	—	—	—	—	1.3	0.000922 (J)	1.53	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] BVs from LANL (1998, 059730).

[b] na = Not available.

[c] SSLs from NMED (2019, 700550) unless otherwise noted.

[d] SSL for total chromium.

[e] — = Not detected or not detected above BV.

[f] NA = Not analyzed.

Table 4.3-2
Organic Chemicals Detected at SWMU 33-004(a)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Acrylonitrile	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate
Construction Worker SSL[a]				**15,100**	**7530[b]**	**242,000**	**35.2**	**75,300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**7530**	**2310**	**5380**
Industrial SSL[a]				**50,500**	**25,300[b]**	**960,000**	**24.6**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300**	**323**	**1830**
Residential SSL[a]				**3480**	**1740[b]**	**66,300**	**4.93**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740**	**15.3**	**380**
RE33-20-189907	33-60588	7.1–8.1	QBT3	—[c]	—	—	—	—	—	—	0.0125 (J)	—	—	—	—	—
RE33-20-189908	33-60589	7.4–8.4	FILL	—	—	—	—	—	NA[d]	NA	0.0374 (J)	0.0404 (J)	0.0523	0.0242 (J)	—	0.136
RE33-20-189913	33-60589	10.4–11.3	FILL	—	—	—	—	—	0.0595	0.0326	—	0.0156 (J)	0.0219 (J)	0.0153 (J)	—	0.0606
RE33-20-189909	33-60590	9.5–10.5	QBT3	—	—	0.0207	—	—	NA	NA	0.023 (J)	0.0183 (J)	0.0233 (J)	0.0129 (J)	—	—
RE33-20-189914	33-60590	12.5–13.5	QBT3	—	—	—	—	—	NA	NA	0.0249 (J)	0.0231 (J)	0.0264 (J)	—	—	—
RE33-21-222765	33-60590	15.0–16.0	QBT3	—	—	NA	NA	—	NA	NA	0.032 (J)	0.032 (J)	0.0392	0.0285 (J+)	—	NA
RE33-20-189910	33-60591	7.4–7.9	FILL	—	—	—	—	—	NA	NA	0.0749 (J)	—	0.0749 (J)	—	—	—
RE33-20-189915	33-60591	10.4–11.4	QBT3	—	—	0.0274	—	—	NA	NA	—	—	—	—	—	—
RE33-20-189911	33-60592	9.2–10.2	QBT3	—	—	0.00213 (J)	—	—	NA	NA	0.0247 (J)	0.023 (J)	0.023 (J)	0.0178 (J)	—	—
RE33-20-189916	33-60592	12.2–13.2	QBT3	—	—	—	—	—	NA	NA	0.0203 (J)	0.0199 (J)	0.0256 (J)	—	—	—
RE33-21-222766	33-60592	15.0–16.0	QBT3	0.0119 (J)	—	NA	NA	0.0204	NA	NA	0.0543	0.0628	0.0662	0.0509	0.0271	NA
RE33-20-189957	33-60593	9.0–10	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	0.0259 (J)
RE33-20-189958	33-60593	19.0–20.0	QBT2	—	—	—	—	—	—	—	—	—	—	—	—	0.0883
RE33-20-189960	33-60593	39.0–40.0	QBT2	—	—	—	—	—	NA	NA	—	—	—	—	—	0.165
RE33-20-189961	33-60593	52.0–53.0	QBT2	—	—	—	—	—	NA	NA	—	—	—	—	—	0.0537
RE33-20-189962	33-60593	60.0–61.0	QBT2	—	—	—	—	—	NA	NA	—	—	—	—	—	0.0418
RE33-20-189963	33-60593	74.5–75.5	QBT2	—	—	—	—	—	NA	NA	—	—	—	—	—	0.11
RE33-20-189964	33-60594	9.0–10.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	0.0246 (J)
RE33-20-189965	33-60594	19.0–20.0	QBT2	—	—	—	—	—	—	—	—	—	—	—	—	0.0213 (J)
RE33-20-189966	33-60594	29.0–30.0	QBT2	—	—	—	—	—	NA	NA	—	—	—	—	—	0.0586
RE33-20-189967	33-60594	39.0–40.0	QBT2	—	—	—	—	—	NA	NA	—	—	—	—	—	0.0116 (J)
RE33-20-189968	33-60594	52.5–53.5	QBT2	—	—	—	—	—	NA	NA	—	—	—	—	—	0.0396
RE33-20-189969	33-60594	59.0–60.0	QBT2	—	—	—	—	—	NA	NA	—	—	—	—	—	0.0205 (J)
RE33-20-189970	33-60594	69.0–70.0	QBT2	—	—	—	—	—	NA	NA	—	—	—	—	—	0.0389

Table 4.3-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Acrylonitrile	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate
Construction Worker SSL[a]				**15,100**	**7530[b]**	**242,000**	**35.2**	**75,300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**7530**	**2310**	**5380**
Industrial SSL[a]				**50,500**	**25,300[b]**	**960,000**	**24.6**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300**	**323**	**1830**
Residential SSL[a]				**3480**	**1740[b]**	**66,300**	**4.93**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740**	**15.3**	**380**
RE33-20-189971	33-60595	2.1–2.9	FILL	—	—	—	—	0.071 (J)	4.96	1.8	0.666	0.597	0.856	0.345	0.318	0.561
RE33-20-189979	33-60595	4.1–5.1	QBT3	—	—	—	—	—	NA	NA	—	—	—	—	—	0.0113 (J)
RE33-21-222767	33-60595	4.1–5.1	QBT3	NA	NA	NA	NA	NA	0.375	0.158 (J-)	NA	NA	NA	NA	NA	NA
RE33-20-189987	33-60595	6.1–7.1	QBT3	—	—	—	—	—	NA	NA	0.0418	0.0404	0.0537	0.0211 (J)	0.0176 (J)	0.072
RE33-21-222768	33-60595	6.1–7.1	QBT3	NA	NA	NA	NA	NA	3.08	1.19 (J-)	NA	NA	NA	NA	NA	NA
RE33-20-189988	33-60596	5.6–6.6	QBT3	—	—	—	—	—	0.00533	0.00234 (J)	—	—	—	—	—	—
RE33-20-189981	33-60597	3.7–4.7	QBT3	—	—	0.00888	—	—	NA	NA	—	—	—	—	—	—
RE33-21-217778	33-60597	3.7–4.7	QBT3	NA	NA	NA	NA	NA	0.00362	0.00177 (J)	NA	NA	NA	NA	NA	NA
RE33-20-189989	33-60597	5.7–6.7	QBT3	—	—	0.00215 (J)	—	—	NA	NA	0.0293 (J)	0.0363	0.0435	0.0166 (J)	0.0162 (J)	0.0207 (J)
RE33-21-217779	33-60597	5.7–6.7	QBT3	—	NA	NA	NA	NA	—	—	NA	NA	NA	NA	NA	NA
RE33-21-222769	33-60597	9.0–10.0	QBT3	—	—	NA	NA	—	NA	NA	—	—	—	—	—	—
RE33-20-189974	33-60598	1.9–2.9	FILL	—	—	—	—	—	NA	NA	0.461	0.426	0.562	0.211	0.204	—
RE33-20-189982	33-60598	3.9–4.9	QBT3	—	—	—	—	—	NA	NA	0.028 (J+)	0.0211 (J+)	0.0259 (J+)	—	0.0167 (J+)	—
RE33-20-189990	33-60598	5.9–6.9	QBT3	—	—	—	—	—	0.00918	0.00398	0.0145 (J)	—	—	—	—	—
RE33-20-189975	33-60599	1.5–2.3	FILL	—	—	—	—	0.359	1.04	0.394	3.1	2.95	3.96	1.56	1.34	0.162 (J)
RE33-20-189983	33-60599	3.5–4.5	QBT3	—	—	—	—	—	NA	NA	0.0398	0.0312 (J)	0.0367	0.0237 (J)	—	—
RE33-21-222770	33-60599	3.5–4.5	QBT3	NA	NA	NA	NA	NA	0.0204	0.00761	NA	NA	NA	NA	NA	NA
RE33-21-222771	33-60599	5.5–6.5	QBT3	NA	NA	NA	NA	NA	0.00328 (J)	—	NA	NA	NA	NA	NA	NA
RE33-20-189976	33-60600	2.2–3.2	FILL	—	—	—	—	0.371	NA	NA	3.6	3.07	4.17	1.55	1.37	0.12 (J)
RE33-20-189992	33-60600	6.2–7.2	QBT3	—	—	—	—	—	0.00178 (J)	—	—	—	—	—	—	—
RE33-20-189985	33-60601	3.8–4.8	QBT3	—	—	—	—	0.0272 (J)	NA	NA	0.258	0.234	0.334	0.141	0.0898	—
RE33-20-189993	33-60601	5.8–6.8	QBT3	—	—	—	—	—	NA	NA	0.0663	0.0546	0.0755	0.0311 (J)	0.0205 (J)	—
RE33-20-189978	33-60602	1.9–2.8	FILL	—	—	—	—	0.305	NA	NA	3.12	3.05	3.92	1.69	1.44	—
RE33-20-189986	33-60602	3.9–4.9	QBT3	—	—	—	—	—	NA	NA	—	—	—	—	—	—
RE33-21-217780	33-60961	2.1–2.7	FILL	—	—	—	0.00187 (J)	0.414	2.74 (J+)	1.37 (J+)	3.07	3.22	3.96	1.81	1.7	—

Table 4.3-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Acrylonitrile	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate
Construction Worker SSL[a]				**15,100**	**7530[b]**	**242,000**	**35.2**	**75,300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**7530**	**2310**	**5380**
Industrial SSL[a]				**50,500**	**25,300[b]**	**960,000**	**24.6**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300**	**323**	**1830**
Residential SSL[a]				**3480**	**1740[b]**	**66,300**	**4.93**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740**	**15.3**	**380**
RE33-21-217781	33-60961	4.1–5.1	QBT3	—	—	—	—	—	0.0426	0.0183	—	—	—	—	—	—
RE33-21-217782	33-60961	6.1–7.1	QBT3	—	—	—	—	—	0.0103	0.00455	—	—	—	—	—	—
RE33-21-217783	33-60962	1.9–2.7	QBT3	—	—	—	—	0.0113 (J)	0.297 (J)	0.132 (J)	0.11	0.124	0.157	0.0707	0.055	0.0236 (J)
RE33-21-217784	33-60962	3.7–4.7	QBT3	—	—	—	—	—	0.0194 (J)	0.00869 (J)	—	—	—	—	—	—
RE33-21-217785	33-60962	5.7–6.7	QBT3	—	—	—	—	—	0.00729 (J)	0.00375 (J)	0.0166 (J)	—	—	—	—	—
RE33-21-217786	33-60963	1.6–2.6	ALLH	—	—	—	—	0.0821 (J)	1	0.485	0.693	0.693	0.931	0.421	0.322	—
RE33-21-217787	33-60963	3.6–4.6	QBT3	—	—	—	—	—	0.0105	0.00488	—	—	—	—	—	—
RE33-21-217788	33-60963	5.6–6.6	QBT3	—	—	—	—	—	0.00502	0.0027 (J)	—	—	—	—	—	—
RE33-21-217789	33-60964	1.6–2.6	FILL	—	—	—	—	0.136 (J)	3.34	1.61	1.03	1.06	1.38	0.642	0.564	—
RE33-21-217790	33-60964	3.6–4.6	QBT3	—	—	—	—	—	0.0135	0.0065	—	—	—	—	—	—
RE33-21-217791	33-60964	5.6–6.6	QBT3	—	—	—	—	—	0.151	0.0722	0.0298 (J)	0.0295 (J)	0.0291 (J)	—	0.0116 (J)	—
RE33-21-217792	33-60965	2.1–2.9	FILL	NA	NA	NA	NA	NA	1.13 (J+)	0.606 (J+)	NA	NA	NA	NA	NA	NA
RE33-21-217793	33-60965	4.1–5.1	QBT3	NA	NA	NA	NA	NA	0.0515	0.0246	NA	NA	NA	NA	NA	NA
RE33-21-217794	33-60965	6.1–7.1	QBT3	NA	NA	NA	NA	NA	0.0159	0.00747	NA	NA	NA	NA	NA	NA
RE33-21-217795	33-60966	2.1–2.9	FILL	NA	NA	NA	NA	NA	0.0357	0.0343	NA	NA	NA	NA	NA	NA
RE33-21-217796	33-60966	4.2–5.1	QBT3	NA	NA	NA	NA	NA	0.0158	0.0111	NA	NA	NA	NA	NA	NA
RE33-21-217797	33-60966	6.1–7.1	QBT3	NA	NA	NA	NA	NA	0.00494	0.00338 (J)	NA	NA	NA	NA	NA	NA
RE33-21-217810	33-60971	1.7–2.4	FILL	NA	NA	NA	NA	NA	3.12 (J+)	1.61 (J+)	NA	NA	NA	NA	NA	NA
RE33-21-217811	33-60971	3.7–4.7	QBT3	NA	NA	NA	NA	NA	0.0105	0.00558	NA	NA	NA	NA	NA	NA
RE33-21-217812	33-60971	5.7–6.7	QBT3	NA	NA	NA	NA	NA	0.00783	0.00444	NA	NA	NA	NA	NA	NA
RE33-21-217815	33-60972	5.7–6.7	QBT3	NA	NA	NA	NA	NA	0.00348	0.00313 (J)	NA	NA	NA	NA	NA	NA
RE33-21-217816	33-60973	1.7–2.4	QBT3	NA	NA	NA	NA	NA	0.00248 (J)	0.00156 (J)	NA	NA	NA	NA	NA	NA
RE33-21-217817	33-60973	3.7–4.7	QBT3	NA	NA	NA	NA	NA	0.00153 (J)	—	NA	NA	NA	NA	NA	NA
RE33-21-217818	33-60973	5.7–6.7	QBT3	NA	NA	NA	NA	NA	0.00182 (J)	0.00134 (J)	NA	NA	NA	NA	NA	NA
RE33-21-217819	33-60974	1.7–2.4	FILL	NA	NA	NA	NA	NA	2.79 (J+)	1.32 (J+)	NA	NA	NA	NA	NA	NA

Table 4.3-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Acrylonitrile	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate
Construction Worker SSL[a]				**15,100**	**7530[b]**	**242,000**	**35.2**	**75,300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**7530**	**2310**	**5380**
Industrial SSL[a]				**50,500**	**25,300[b]**	**960,000**	**24.6**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300**	**323**	**1830**
Residential SSL[a]				**3480**	**1740[b]**	**66,300**	**4.93**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740**	**15.3**	**380**
RE33-21-217820	33-60974	3.7–4.7	QBT3	NA	NA	NA	NA	NA	0.0425	0.023	NA	NA	NA	NA	NA	NA
RE33-21-217821	33-60974	5.7–6.7	QBT3	NA	NA	NA	NA	NA	0.0048	0.00325 (J)	NA	NA	NA	NA	NA	NA
RE33-21-217822	33-60975	1.7–2.4	QBT3	NA	NA	NA	NA	NA	1.34	0.643	NA	NA	NA	NA	NA	NA
RE33-21-217823	33-60975	3.7–4.7	QBT3	NA	NA	NA	NA	NA	0.0304	0.016	NA	NA	NA	NA	NA	NA
RE33-21-217824	33-60975	5.7–6.7	QBT3	NA	NA	NA	NA	NA	0.00265 (J)	—	NA	NA	NA	NA	NA	NA
RE33-21-217825	33-60976	1.8–2.8	FILL	—	—	NA	NA	—	NA	NA	0.0622 (J)	0.083	0.0968	0.0553 (J)	—	NA
RE33-21-217826	33-60976	3.8–4.8	QBT3	—	—	NA	NA	—	NA	NA	—	—	—	0.00237 (J)	—	NA
RE33-21-217827	33-60976	5.8–6.8	QBT3	—	—	NA	NA	—	NA	NA	—	—	—	0.00176 (J)	—	NA
RE33-21-217828	33-60977	1.8–2.8	FILL	—	—	NA	NA	0.138	NA	NA	1.05	1.03	1.2	0.572	0.448	NA
RE33-21-217831	33-60978	1.8–2.8	FILL	—	—	NA	NA	—	NA	NA	—	—	—	—	—	NA
RE33-21-217833	33-60978	5.8–6.8	QBT3	—	—	NA	NA	—	NA	NA	—	—	—	—	—	NA
RE33-21-217834	33-60979	1.8–2.8	FILL	—	—	NA	NA	0.0557	NA	NA	0.414	0.4	0.473	0.216	0.174	NA
RE33-21-217837	33-60980	2–2.8	QBT3	—	—	NA	NA	—	NA	NA	—	—	—	—	—	NA
RE33-21-217838	33-60980	3.8–4.8	QBT3	—	—	NA	NA	—	NA	NA	—	—	—	—	—	NA
RE33-21-222796	33-61120	1.8–2.8	FILL	—	0.135 (J)	NA	NA	0.488 (J+)	NA	NA	2.38 (J+)	2.07 (J+)	2.7 (J+)	1.27 (J+)	0.893 (J+)	NA
RE33-21-222797	33-61120	3.8–4.8	QBT3	—	0.00205 (J)	NA	NA	0.0065	NA	NA	0.0349	0.0311	0.0407	0.0209 (J+)	0.0157 (J+)	NA
RE33-21-222798	33-61120	5.8–6.8	QBT3	0.0037 (J)	0.00773 (J)	NA	NA	0.0323	NA	NA	0.161	0.148	0.191	0.0972 (J+)	0.0646 (J+)	NA
RE33-21-222799	33-61121	1.8–2.8	QBT3	—	—	NA	NA	—	NA	NA	0.00444	0.00444	0.00547	0.00342	0.00239 (J)	NA
RE33-21-222802	33-61122	1.8–2.8	FILL	—	0.146	NA	NA	0.686 (J)	NA	NA	3.77 (J)	3.37 (J)	4.61 (J)	1.82 (J)	1.47 (J)	NA
RE33-21-222805	33-61123	1.8–2.8	FILL	—	—	NA	NA	0.0278 (J)	NA	NA	0.0905	0.111	0.139	0.101	0.0522	NA
RE33-21-222806	33-61123	3.8–4.8	QBT3	—	—	NA	NA	—	NA	NA	0.00303 (J)	0.00337	0.00405	0.0027 (J)	—	NA

Table 4.3-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Carbazole	Chloronapthalene[2-]	Chrysene	Di-n-butylphthalate	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Hexanone[2-]	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	Styrene	Toluene
Construction Worker SSL[a]				**85[e,f]**	**28,300**	**23,100**	**26,900**	**24**	**10,000**	**10,000**	**340[f]**	**240**	**1000**	**159**	**7530**	**7530**	**10,200**	**14,000**
Industrial SSL[a]				**1200[e,g]**	**104,000**	**3230**	**91,600**	**3.23**	**33,700**	**33,700**	**1300[g]**	**32.3**	**3370**	**241**	**25,300**	**25,300**	**51,300**	**61,300**
Residential SSL[a]				**78[e,g]**	**6260**	**153**	**6160**	**0.153**	**2320**	**2320**	**200[g]**	**1.53**	**232**	**49.7**	**1740**	**1740**	**7260**	**5230**
RE33-20-189907	33-60588	7.1–8.1	QBT3	—	—	—	—	—	0.0189 (J)	—	—	—	—	—	0.0113 (J)	0.0125 (J)	—	—
RE33-20-189908	33-60589	7.4–8.4	FILL	—	—	0.0319 (J)	—	—	0.054	—	—	0.0221 (J)	—	—	0.0204 (J)	0.0438	—	—
RE33-20-189913	33-60589	10.4–11.3	FILL	—	—	—	—	—	0.0176 (J)	—	—	—	—	—	—	0.0203 (J)	—	—
RE33-20-189909	33-60590	9.5–10.5	QBT3	—	—	0.0201 (J)	—	—	0.0251 (J)	—	—	0.0118 (J)	—	—	0.0158 (J)	0.0323 (J)	—	—
RE33-20-189914	33-60590	12.5–13.5	QBT3	—	—	0.0199 (J)	—	—	0.0365	—	—	—	—	—	0.0311 (J)	0.0419	—	—
RE33-21-222765	33-60590	15.0–16.0	QBT3	NA	—	0.032 (J+)	NA	—	0.0569	—	NA	0.0249 (J)	—	—	0.0356	0.0605 (J)	NA	NA
RE33-20-189910	33-60591	7.4–7.9	FILL	—	—	—	—	—	0.0954 (J)	—	—	—	—	—	0.0861 (J)	0.112 (J)	—	—
RE33-20-189915	33-60591	10.4–11.4	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189911	33-60592	9.2–10.2	QBT3	—	—	0.0185 (J)	—	—	0.0289 (J)	—	—	—	—	—	0.0251 (J)	0.0345 (J)	—	—
RE33-20-189916	33-60592	12.2–13.2	QBT3	—	—	0.0167 (J)	—	—	0.0335 (J)	—	—	—	—	—	0.0242 (J)	0.0313 (J)	—	—
RE33-21-222766	33-60592	15.0–16.0	QBT3	NA	—	0.0526	NA	0.0136 (J)	0.0899	0.0102 (J)	NA	0.056	—	0.00848 (J)	0.0763	0.105	NA	NA
RE33-20-189957	33-60593	9.0–10	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189958	33-60593	19.0–20.0	QBT2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189960	33-60593	39.0–40.0	QBT2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189961	33-60593	52.0–53.0	QBT2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189962	33-60593	60.0–61.0	QBT2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189963	33-60593	74.5–75.5	QBT2	NA	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189964	33-60594	9.0–10.0	QBT3	NA	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189965	33-60594	19.0–20.0	QBT2	NA	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189966	33-60594	29.0–30.0	QBT2	NA	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189967	33-60594	39.0–40.0	QBT2	NA	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189968	33-60594	52.5–53.5	QBT2	NA	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189969	33-60594	59.0–60.0	QBT2	NA	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189970	33-60594	69.0–70.0	QBT2	NA	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4.3-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Carbazole	Chloronapthalene[2-]	Chrysene	Di-n-butylphthalate	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Hexanone[2-]	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	Styrene	Toluene
Construction Worker SSL[a]				**85[e,f]**	**28,300**	**23,100**	**26,900**	**24**	**10,000**	**10,000**	**340[f]**	**240**	**1000**	**159**	**7530**	**7530**	**10,200**	**14,000**
Industrial SSL[a]				**1200[e,g]**	**104,000**	**3230**	**91,600**	**3.23**	**33,700**	**33,700**	**1300[g]**	**32.3**	**3370**	**241**	**25,300**	**25,300**	**51,300**	**61,300**
Residential SSL[a]				**78[e,g]**	**6260**	**153**	**6160**	**0.153**	**2320**	**2320**	**200[g]**	**1.53**	**232**	**49.7**	**1740**	**1740**	**7260**	**5230**
RE33-20-189971	33-60595	2.1–2.9	FILL	—	—	0.68	0.352	0.0924 (J)	1.43	—	—	0.377	—	—	0.291	1.33	—	0.000546 (J)
RE33-20-189979	33-60595	4.1–5.1	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-21-222767	33-60595	4.1–5.1	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-189987	33-60595	6.1–7.1	QBT3	—	—	0.0442	0.0326 (J)	—	0.0744	—	—	0.0256 (J)	—	—	0.0218 (J)	0.0727	—	—
RE33-21-222768	33-60595	6.1–7.1	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-189988	33-60596	5.6–6.6	QBT3	—	—	—	—	—	—	0.0918 (J)	—	—	—	—	—	—	—	—
RE33-20-189981	33-60597	3.7–4.7	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-21-217778	33-60597	3.7–4.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-189989	33-60597	5.7–6.7	QBT3	—	—	0.0331 (J)	0.0162 (J)	—	0.0539	—	—	0.0204 (J)	—	—	0.0276 (J)	0.0532	—	—
RE33-21-222768	33-60597	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217779	33-60597	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222769	33-60597	9.0–10.0	QBT3	NA	NA	—	NA	NA	—	NA	NA	—	NA	NA	—	—	NA	NA
RE33-20-189974	33-60598	1.9–2.9	FILL	—	—	0.485	—	—	0.681	—	—	0.264	—	—	0.164 (J)	0.911	—	0.000903 (J)
RE33-20-189982	33-60598	3.9–4.9	QBT3	—	—	0.0211 (J+)	—	—	0.0378 (J+)	—	—	—	—	—	0.0102 (J+)	0.0498 (J+)	—	—
RE33-20-189990	33-60598	5.9–6.9	QBT3	—	—	—	—	—	0.0169 (J)	—	—	—	—	—	—	0.0169 (J)	—	—
RE33-20-189975	33-60599	1.5–2.3	FILL	0.215 (J)	—	2.54	—	0.482	5.35	—	—	1.78	—	—	1.4	7.08	—	0.00094 (J)
RE33-20-189983	33-60599	3.5–4.5	QBT3	—	—	0.0336 (J)	—	—	0.0624	—	—	0.0158 (J)	—	—	0.0161 (J)	0.0789	—	—
RE33-21-222770	33-60599	3.5–4.5	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222771	33-60599	5.5–6.5	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-189976	33-60600	2.2–3.2	FILL	0.202	—	3.35	—	0.484	5.16	0.0709 (J)	—	1.84	—	—	1.28	7.15	—	—
RE33-20-189992	33-60600	6.2–7.2	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-189985	33-60601	3.8–4.8	QBT3	0.0122 (J)	—	0.263	—	0.0444	0.446	—	—	0.146	—	—	0.101	0.5	—	0.000432 (J)
RE33-20-189993	33-60601	5.8–6.8	QBT3	—	—	0.0557	—	—	0.113	—	—	0.0338 (J)	—	—	0.0321 (J)	0.118	—	—
RE33-20-189978	33-60602	1.9–2.8	FILL	0.0937 (J)	—	3.2	0.154 (J)	0.508	4.66	0.085 (J)	—	1.75	—	—	1.12	6.63	—	0.00041 (J)
RE33-20-189986	33-60602	3.9–4.9	QBT3	—	—	—	—	—	0.0126 (J)	—	—	—	—	—	—	0.0153 (J)	—	—
RE33-21-217780	33-60961	2.1–2.7	FILL	—	—	3.25	—	0.601	4.8	0.132 (J)	—	1.94	—	0.000356 (J)	1.19	5.21	0.00194	—

Table 4.3-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Carbazole	Chloronapthalene[2-]	Chrysene	Di-n-butylphthalate	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Hexanone[2-]	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	Styrene	Toluene
Construction Worker SSL[a]				**85[e,f]**	**28,300**	**23,100**	**26,900**	**24**	**10,000**	**10,000**	**340[f]**	**240**	**1000**	**159**	**7530**	**7530**	**10,200**	**14,000**
Industrial SSL[a]				**1200[e,g]**	**104,000**	**3230**	**91,600**	**3.23**	**33,700**	**33,700**	**1300[g]**	**32.3**	**3370**	**241**	**25,300**	**25,300**	**51,300**	**61,300**
Residential SSL[a]				**78[e,g]**	**6260**	**153**	**6160**	**0.153**	**2320**	**2320**	**200[g]**	**1.53**	**232**	**49.7**	**1740**	**1740**	**7260**	**5230**
RE33-21-217781	33-60961	4.1–5.1	QBT3	—	—	—	—	—	0.0117 (J)	—	—	—	—	—	—	—	—	—
RE33-21-217782	33-60961	6.1–7.1	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-21-217783	33-60962	1.9–2.7	QBT3	—	—	0.11	0.0195 (J)	—	0.216 (J)	—	—	0.0768	—	—	0.0502	0.192	—	—
RE33-21-217784	33-60962	3.7–4.7	QBT3	—	—	—	—	—	0.0122 (J)	—	—	—	—	—	—	0.0115 (J)	—	—
RE33-21-217785	33-60962	5.7–6.7	QBT3	—	—	0.0145 (J)	—	—	0.0274 (J)	—	—	—	—	—	—	0.027 (J)	—	—
RE33-21-217786	33-60963	1.6–2.6	ALLH	—	—	0.748	—	0.132 (J)	1.12	—	—	0.419	—	—	0.299	1.14	—	—
RE33-21-217787	33-60963	3.6–4.6	QBT3	—	—	—	—	—	—	—	0.0545	—	—	—	—	—	—	—
RE33-21-217788	33-60963	5.6–6.6	QBT3	—	—	—	—	—	—	—	0.0092	—	—	—	—	—	—	—
RE33-21-217789	33-60964	1.6–2.6	FILL	0.0475 (J)	—	1.18	—	0.173	1.37	0.0461 (J)	—	0.649	—	—	0.433	1.33	—	—
RE33-21-217790	33-60964	3.6–4.6	QBT3	—	—	—	—	—	—	—	0.0261	—	—	—	—	—	—	—
RE33-21-217791	33-60964	5.6–6.6	QBT3	—	—	0.0325 (J)	—	—	0.0411	—	—	—	—	—	0.0116 (J)	0.0421	—	—
RE33-21-217792	33-60965	2.1–2.9	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217793	33-60965	4.1–5.1	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217794	33-60965	6.1–7.1	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217795	33-60966	2.1–2.9	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217796	33-60966	4.2–5.1	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217797	33-60966	6.1–7.1	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217810	33-60971	1.7–2.4	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217811	33-60971	3.7–4.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217812	33-60971	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217815	33-60972	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217816	33-60973	1.7–2.4	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217817	33-60973	3.7–4.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217818	33-60973	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217819	33-60974	1.7–2.4	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 4.3-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Carbazole	Chloronapthalene[2-]	Chrysene	Di-n-butylphthalate	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Hexanone[2-]	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	Styrene	Toluene
Construction Worker SSL[a]				**85[e,f]**	**28,300**	**23,100**	**26,900**	**24**	**10,000**	**10,000**	**340[f]**	**240**	**1000**	**159**	**7530**	**7530**	**10,200**	**14,000**
Industrial SSL[a]				**1200[e,g]**	**104,000**	**3230**	**91,600**	**3.23**	**33,700**	**33,700**	**1300[g]**	**32.3**	**3370**	**241**	**25,300**	**25,300**	**51,300**	**61,300**
Residential SSL[a]				**78[e,g]**	**6260**	**153**	**6160**	**0.153**	**2320**	**2320**	**200[g]**	**1.53**	**232**	**49.7**	**1740**	**1740**	**7260**	**5230**
RE33-21-217820	33-60974	3.7–4.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217821	33-60974	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217822	33-60975	1.7–2.4	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217823	33-60975	3.7–4.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217824	33-60975	5.7–6.7	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217825	33-60976	1.8–2.8	FILL	NA	—	0.0761	NA	—	0.138	—	NA	0.0692	—	—	0.0899	0.118	NA	NA
RE33-21-217826	33-60976	3.8–4.8	QBT3	NA	0.00339	—	NA	0.00169 (J)	—	—	NA	0.00237 (J)	—	—	0.00237 (J)	—	NA	NA
RE33-21-217827	33-60976	5.8–6.8	QBT3	NA	—	—	NA	—	—	—	NA	0.00212 (J)	—	—	0.00282 (J)	—	NA	NA
RE33-21-217828	33-60977	1.8–2.8	FILL	NA	—	1.05	NA	0.207	2.21	—	NA	0.744	—	—	0.496	1.72	NA	NA
RE33-21-217831	33-60978	1.8–2.8	FILL	NA	—	—	NA	—	—	—	NA	—	—	—	0.00211 (J)	—	NA	NA
RE33-21-217833	33-60978	5.8–6.8	QBT3	NA	—	—	NA	—	—	—	NA	—	—	—	0.00272 (J)	—	NA	NA
RE33-21-217834	33-60979	1.8–2.8	FILL	NA	—	0.393	NA	0.0766	0.933	—	NA	0.271	—	—	0.198	0.71	NA	NA
RE33-21-217837	33-60980	2–2.8	QBT3	NA	—	—	NA	—	—	—	NA	—	—	—	0.00171 (J)	—	NA	NA
RE33-21-217838	33-60980	3.8–4.8	QBT3	NA	—	—	NA	—	—	—	NA	—	—	—	0.00243 (J)	—	NA	NA
RE33-21-222796	33-61120	1.8–2.8	FILL	NA	—	2.22 (J+)	NA	0.375 (J+)	5.08 (J+)	0.0826 (J+)	NA	1.56 (J+)	—	0.0375 (J+)	1.3 (J+)	3.96 (J)	NA	NA
RE33-21-222797	33-61120	3.8–4.8	QBT3	NA	—	0.0342 (J+)	NA	0.00718	0.0646	0.00239 (J)	NA	0.0253	—	—	0.0209	0.0629 (J)	NA	NA
RE33-21-222798	33-61120	5.8–6.8	QBT3	NA	—	0.154 (J+)	NA	0.0286	0.33	0.00706	NA	0.118	0.00437 (J)	0.0249 (J)	0.0945	0.281 (J)	NA	NA
RE33-21-222799	33-61121	1.8–2.8	QBT3	NA	—	0.00479	NA	—	0.00923	—	NA	0.00376	—	—	0.00718	0.0103	NA	NA
RE33-21-222802	33-61122	1.8–2.8	FILL	NA	—	3.58 (J)	NA	0.555 (J)	7.89 (J)	0.131	NA	2.26 (J)	—	—	2.09 (J)	7.4 (J)	NA	NA
RE33-21-222805	33-61123	1.8–2.8	FILL	NA	—	0.104	NA	0.0209 (J)	0.181	—	NA	0.108	—	—	0.146	0.223	NA	NA
RE33-21-222806	33-61123	3.8–4.8	QBT3	NA	—	0.00337	NA	—	0.00573	—	NA	0.00303 (J)	—	—	0.00472	0.00641	NA	NA

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED (2019, 700550) unless otherwise noted.

[b] Pyrene used as a surrogate based on structural similarity.

[c] — = Not detected.

[d] NA= Not analyzed.

[e] Dibenzofuran used as a surrogate based on structural similarity.

[f] Construction worker SSLs calculated using the equations outlined in NMED (2022, 702484), incorporating toxicity and chemical-specific parameters from EPA regional screening level (RSL) tables (https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables).

[g] SSL from EPA RSL tables (https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables).

Table 4.3-3
Proposed Sampling and Analysis at SWMU 33-004(a)

Sampling Objective	Location Number	Location Description	Depth[a] (ft)	Lead (SW-846:6010D[b])	PAHs (SW-846:8270-SIM_PAHS)
Define lateral extent of lead east of the septic tank drain field	4a-1 through 4a-5	5-ft and 10-ft step-outs east of septic drain field	1.6–2.6 3.6–4.6 5.6–6.6	X[c]	—[d]
Define lateral extent of PAHs south of location 33-60599	4a-6 through 4a-9	Four 5-ft step-outs from location 33-60599	1.5–2.5 3.5–4.5 5.5–6.5	—	X
Define lateral extent of PAHs south of location 33-60961	4a-10 through 4a-13	Four 5-ft step-outs from location 33-60961	2.1–3.1 4.1–5.1 6.1–7.1	—	X
Define lateral extent of PAHs south of location 33-60600	4a-14 through 4a-17	Four 5-ft step-outs from location 33-60600	2.2–3.2 4.2–5.2 6.2–7.2	—	X
Determine extent of PAH contamination south of drain field	4a-18	5-ft step-out from second drainline south of location 33-60598	1.9–2.9 3.9–4.9 5.9–6.9	—	X
Define lateral extent of PAHs south of location 33-60602	4a-19 through 4a-22	Four 5-ft step-outs from location 33-60602	1.9–2.9 3.9–4.9 5.9–6.9	—	X
Determine extent of PAH contamination south of drain field	4a-23	5-ft step-out from sixth drainline south of location 33-60961	2.1–3.1 4.1–5.1 6.1–7.1	—	X

[a] Depths are below ground surface, unless specified otherwise.

[b] Most recent promulgated, certified, and appropriate method will be used during field investigations.

[c] X = Analysis will be performed.

[d] — = Analysis will not be performed.

Table 4.4-1
Organic Chemicals Detected at SWMU 33-004(i)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Carbazole	Chrysene	Di-n-butylphthalate
Construction Worker SSL[a]				**15,100**	**75,300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**7530[b]**	**2310**	**85[c,d]**	**23,100**	**26,900**
Industrial SSL[a]				**50,500**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300[b]**	**323**	**1200[c,e]**	**3230**	**91,600**
Residential SSL[a]				**3480**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740[b]**	**15.3**	**78[c,e]**	**153**	**6160**
RE33-20-190004	33-01055	0.0–1.0	FILL	0.114 (J)	0.17 (J)	0.249	0.116	0.407	0.39	0.46	0.206	0.187	0.0766 (J)	0.379	0.0729 (J)
RE33-20-190014	33-01055	2.0–3.0	FILL	0.27	0.728	NA[f]	NA	1.52	1.34	1.62	0.665	0.642	0.363	1.42	—[g]
RE33-21-217964	33-01055	2.0–3.0	FILL	NA	NA	0.168	0.106 (J+)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190024	33-01055	4.0–5.0	FILL	0.0232 (J)	0.0532	NA	NA	0.158	0.178	0.198	0.0946	0.0774	0.0203 (J)	0.148	—
RE33-21-217965	33-01055	4.0–5.0	FILL	NA	NA	0.0469	0.0373 (J+)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190005	33-01056	0.0–1.0	FILL	0.159 (J)	0.314 (J)	NA	NA	0.966	1	1.24	0.553	0.494	0.203 (J)	0.955	—
RE33-20-190015	33-01056	2.0–3.0	FILL	—	0.0889 (J)	NA	NA	1.01	1.16	1.46	0.664	0.569	—	1.01	—
RE33-20-190006	33-01057	0.0–1.0	SOIL	—	—	0.629	0.268	0.0385 (J)	0.0452	0.0586	0.0256 (J)	0.0224 (J)	—	0.0373 (J)	—
RE33-21-217966	33-01057	2.0–2.5	SOIL	NA	NA	0.0243	0.0139 (J+)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217967	33-01057	4.0–5.0	QBT3	NA	NA	0.00978	0.00486 (J+)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217970	33-01058	6.0–7.0	FILL	NA	NA	0.0571	0.0104	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217971	33-01058	8.0–9.0	FILL	NA	NA	0.0112	0.00289 (J)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190008	33-01059	0.0–1.0	FILL	—	0.2 (J)	0.0496	0.0287	0.555	0.571	0.669	0.28 (J)	0.223 (J)	—	0.521	—
RE33-20-190018	33-01059	2.0–3.0	FILL	1.48	2.32	NA	NA	3.39	2.8	3.44	1.2	1.37	1.02	3.22	—
RE33-21-217972	33-01059	2.0–3.0	FILL	NA	NA	0.181	0.074 (J+)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190028	33-01059	4.0–5.0	FILL	—	—	NA	NA	—	—	—	—	—	—	—	—
RE33-21-217973	33-01059	4.0–5.0	FILL	NA	NA	0.401	0.141 (J+)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190009	33-01060	0.0–1.0	FILL	—	—	NA	NA	0.256	0.252	0.294	0.0981 (J)	0.115 (J)	—	0.241	—
RE33-21-222626	33-01060	0.0–1.0	SOIL	NA	NA	0.512	0.207	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190019	33-01060	2.0–3.0	FILL	—	—	NA	NA	0.0163 (J)	—	0.0141 (J)	—	—	—	—	—
RE33-21-222627	33-01060	2.0–3.0	SOIL	NA	NA	0.0209	0.0102	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190029	33-01060	4.0–5.0	FILL	—	—	0.00885	0.00464	—	—	—	—	—	—	—	—
RE33-21-222628	33-01060	6.0–7.0	QBT3	NA	NA	0.00783	0.00324 (J)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190010	33-60612	0.0–1.0	SOIL	0.0149 (J)	0.0206 (J)	NA	NA	0.0988	0.123	0.148	0.0896	0.0562	0.0206 (J)	0.118	0.0224 (J)
RE33-20-190020	33-60612	2.0–3.0	SOIL	0.0305 (J)	0.0674	NA	NA	0.162	0.18	0.195	0.145	0.0692	0.0319 (J)	0.172	—

Table 4.4-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Carbazole	Chrysene	Di-n-butylphthalate
Construction Worker SSL[a]				**15,100**	**75,300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**7530[b]**	**2310**	**85[c,d]**	**23,100**	**26,900**
Industrial SSL[a]				**50,500**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300[b]**	**323**	**1200[c,e]**	**3230**	**91,600**
Residential SSL[a]				**3480**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740[b]**	**15.3**	**78[c,e]**	**153**	**6160**
RE33-20-190011	33-60613	0.0–1.0	SOIL	0.106 (J)	0.185 (J)	NA	NA	0.492	0.5	0.551	0.283	0.226	0.112 (J)	0.46	—
RE33-20-190021	33-60613	2.0–3.0	QBT3	—	—	NA	NA	0.0151 (J)	0.013 (J)	0.0151 (J)	—	—	—	0.012 (J)	—
RE33-20-190031	33-60613	4.0–5.0	QBT3	—	0.0214 (J)	NA	NA	0.0669	0.0634	0.0767	0.0371	0.0294 (J)	0.0154 (J)	0.0683	—
RE33-20-190012	33-60614	0.0–1.0	SOIL	—	—	NA	NA	0.0332 (J)	0.0368 (J)	0.0428 (J)	0.0216 (J)	0.0189 (J)	—	0.0327 (J)	—
RE33-20-190013	33-60615	0.0–1.0	SOIL	—	—	NA	NA	0.0384 (J)	0.0389 (J)	0.046	0.0223 (J)	0.0188 (J)	—	0.038 (J)	—
RE33-21-217974	33-60987	0.0–1.0	FILL	NA	NA	1.18	0.608 (J+)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217975	33-60987	2.0–3.0	FILL	NA	NA	0.178	0.0997 (J+)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217976	33-60987	4.0–5.0	FILL	NA	NA	47 (J-)	16 (J-)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222629	33-60987	6.0–7.0	FILL	NA	NA	1.09	0.21	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222630	33-60987	8.0–9.0	FILL	NA	NA	0.722	0.144	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217977	33-60988	0.0–1.0	FILL	NA	NA	0.0683	0.0402 (J+)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217978	33-60988	2.0–3.0	FILL	NA	NA	0.0152 (J)	0.0113 (J+)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217979	33-60988	4.0–5.0	FILL	NA	NA	0.0336	0.0187 (J+)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222631	33-60988	6.0–7.0	FILL	NA	NA	0.00304 (J)	0.00131 (J)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222632	33-60988	8.0–9.0	FILL	NA	NA	0.0188	0.00681	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217980	33-60989	0.0–1.0	SOIL	NA	NA	0.0454	0.0398 (J+)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217982	33-60989	4.0–5.0	FILL	NA	NA	0.0248 (J)	0.0269 (J+)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217983	33-60990	0.0–1.0	FILL	NA	NA	0.0668	0.041	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217985	33-60990	4.0–5.0	FILL	NA	NA	9.88	4.19	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222633	33-60990	6.0–7.0	FILL	NA	NA	0.00786	0.00465	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222634	33-60990	8.0–9.0	FILL	NA	NA	0.00285 (J)	0.00231 (J)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222637	33-61109	0.0–1.0	FILL	NA	NA	0.119	0.0728 (J-)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222638	33-61109	2.0–3.0	FILL	NA	NA	0.205	0.0819 (J-)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222639	33-61109	4.0–5.0	FILL	NA	NA	1.03	0.24	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222640	33-61109	6.0–7.0	FILL	NA	NA	0.0189	0.00576	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222641	33-61109	8.0–9.0	FILL	NA	NA	0.00171 (J)	0.00213 (J)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222642	33-61110	0.0–1.0	SOIL	NA	NA	0.214	0.134 (J-)	NA	NA	NA	NA	NA	NA	NA	NA

Table 4.4-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Carbazole	Chrysene	Di-n-butylphthalate
Construction Worker SSL[a]				**15,100**	**75,300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**7530[b]**	**2310**	**85[c,d]**	**23,100**	**26,900**
Industrial SSL[a]				**50,500**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300[b]**	**323**	**1200[c,e]**	**3230**	**91,600**
Residential SSL[a]				**3480**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740[b]**	**15.3**	**78[c,e]**	**153**	**6160**
RE33-21-222644	33-61110	4.0–5.0	FILL	NA	NA	0.0144 (J)	—	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222645	33-61110	6.0–7.0	FILL	NA	NA	0.024	0.0146 (J-)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-223506	33-61875	0.0–1.0	FILL	NA	NA	0.22	0.101	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-223507	33-61875	2.0–3.0	FILL	NA	NA	1	0.237	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-223508	33-61875	4.0–5.0	FILL	NA	NA	19.5 (J-)	6.03 (J-)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-223509	33-61875	6.0–7.0	FILL	NA	NA	4.69	1.48	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-223510	33-61875	8.0–9.0	FILL	NA	NA	0.48	0.146	NA	NA	NA	NA	NA	NA	NA	NA

Table 4.4-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[1-]	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene
Construction Worker SSL[a]				**24**	**10,000**	**10,000**	**240**	**6060**	**1000**	**159**	**7530**	**7530**
Industrial SSL[a]				**3.23**	**33,700**	**33,700**	**32.3**	**813**	**3370**	**241**	**25,300**	**25,300**
Residential SSL[a]				**0.153**	**2320**	**2320**	**1.53**	**172**	**232**	**49.7**	**1740**	**1740**
RE33-20-190004	33-01055	0.0–1.0	FILL	—	0.882	0.0878 (J)	0.247	—	—	0.101 (J)	0.631	0.622
RE33-20-190014	33-01055	2.0–3.0	FILL	0.231	4.14	0.219	0.79	—	—	—	2.41	2.81
RE33-21-217964	33-01055	2.0–3.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190024	33-01055	4.0–5.0	FILL	0.0257 (J)	0.326	0.0193 (J)	0.0981	—	—	0.0107 (J)	0.177	0.256
RE33-21-217965	33-01055	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190005	33-01056	0.0–1.0	FILL	0.159 (J)	2.24	0.125 (J)	0.583	—	—	—	1.28	1.55
RE33-20-190015	33-01056	2.0–3.0	FILL	0.224	1.44	—	0.626	—	—	—	0.235	1.26
RE33-20-190006	33-01057	0.0–1.0	SOIL	—	0.0865	—	0.0248 (J)	—	—	—	0.0366 (J)	0.0605
RE33-21-217966	33-01057	2.0–2.5	SOIL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217967	33-01057	4.0–5.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217970	33-01058	6.0–7.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217971	33-01058	8.0–9.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190008	33-01059	0.0–1.0	FILL	—	1.18	—	0.276 (J)	—	—	—	0.782	0.892
RE33-20-190018	33-01059	2.0–3.0	FILL	0.366	6.6 (J-)	1.36	1.43	0.284 (J)	0.414	1.09	7.72	6.99 (J-)
RE33-21-217972	33-01059	2.0–3.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190028	33-01059	4.0–5.0	FILL	—	—	—	—	—	—	0.00141	—	—
RE33-21-217973	33-01059	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190009	33-01060	0.0–1.0	FILL	—	0.435 (J-)	—	0.13 (J)	—	—	—	0.38	0.478 (J-)
RE33-21-222626	33-01060	0.0–1.0	SOIL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190019	33-01060	2.0–3.0	FILL	—	0.0282 (J)	—	—	—	—	—	0.0155 (J)	0.021 (J)
RE33-21-222627	33-01060	2.0–3.0	SOIL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190029	33-01060	4.0–5.0	FILL	—	—	—	—	—	—	—	—	—
RE33-21-222628	33-01060	6.0–7.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190010	33-60612	0.0–1.0	SOIL	—	0.162	—	0.0953	—	—	—	0.119	0.269
RE33-20-190020	33-60612	2.0–3.0	SOIL	0.0561	0.295	0.0391 (J)	0.152	—	—	0.0525	0.293	0.328

Table 4.4-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[1-]	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene
Construction Worker SSL[a]				**24**	**10,000**	**10,000**	**240**	**6060**	**1000**	**159**	**7530**	**7530**
Industrial SSL[a]				**3.23**	**33,700**	**33,700**	**32.3**	**813**	**3370**	**241**	**25,300**	**25,300**
Residential SSL[a]				**0.153**	**2320**	**2320**	**1.53**	**172**	**232**	**49.7**	**1740**	**1740**
RE33-20-190011	33-60613	0.0–1.0	SOIL	0.0767 (J)	1.06	0.124 (J)	0.299	—	—	0.0905 (J)	0.903	0.893
RE33-20-190021	33-60613	2.0–3.0	QBT3	—	0.0201 (J)	—	—	—	—	—	0.019 (J)	0.0261 (J)
RE33-20-190031	33-60613	4.0–5.0	QBT3	—	0.112	—	0.035	—	—	—	0.0963	0.149
RE33-20-190012	33-60614	0.0–1.0	SOIL	—	0.0636	—	0.0198 (J)	—	—	—	0.0378 (J)	0.0649
RE33-20-190013	33-60615	0.0–1.0	SOIL	—	0.0603	—	0.0331 (J)	—	—	—	0.0282 (J)	0.0675
RE33-21-217974	33-60987	0.0–1.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217975	33-60987	2.0–3.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217976	33-60987	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222629	33-60987	6.0–7.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222630	33-60987	8.0–9.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217977	33-60988	0.0–1.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217978	33-60988	2.0–3.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217979	33-60988	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222631	33-60988	6.0–7.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222632	33-60988	8.0–9.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217980	33-60989	0.0–1.0	SOIL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217982	33-60989	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217983	33-60990	0.0–1.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217985	33-60990	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222633	33-60990	6.0–7.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222634	33-60990	8.0–9.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222637	33-61109	0.0–1.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222638	33-61109	2.0–3.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222639	33-61109	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222640	33-61109	6.0–7.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222641	33-61109	8.0–9.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222642	33-61110	0.0–1.0	SOIL	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 4.4-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[1-]	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene
Construction Worker SSL[a]				**24**	**10,000**	**10,000**	**240**	**6060**	**1000**	**159**	**7530**	**7530**
Industrial SSL[a]				**3.23**	**33,700**	**33,700**	**32.3**	**813**	**3370**	**241**	**25,300**	**25,300**
Residential SSL[a]				**0.153**	**2320**	**2320**	**1.53**	**172**	**232**	**49.7**	**1740**	**1740**
RE33-21-222644	33-61110	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222645	33-61110	6.0–7.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-223506	33-61875	0.0–1.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-223507	33-61875	2.0–3.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-223508	33-61875	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-223509	33-61875	6.0–7.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-223510	33-61875	8.0–9.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED (2019, 700550) unless otherwise noted.

[b] Pyrene used as a surrogate based on structural similarity.

[c] Dibenzofuran used as a surrogate based on structural similarity.

[d] Construction worker SSLs calculated using the equations outlined in NMED (2022, 702484), incorporating toxicity and chemical-specific parameters from EPA regional screening level (RSL) tables (https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables).

[e] SSL from EPA RSL tables (https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables).

[f] NA = Not analyzed.

[g] — = Not detected.

Table 4.4-2
Proposed Sampling and Analysis at SWMU 33-004(i)

Sampling Objective	Location Number	Location Description	Depth[a] (ft)	PCBs (SW-846:8082A[b])
Define extent of PCBs at location 33-60990 and bound planned excavation	4i-1 through 4i-6	Three 5-ft step-outs and three10-ft step-outs from location 33-60990.	0.0–1.0 2.0–3.0 4.0–5.0 6.0–7.0 8.0–9.0	X[c]
Define extent of PCBs at location 33-01058 and bound planned excavation	4i-7 through 4i-10	Four step-outs around location 33-01058.	0.0–1.0 2.0–3.0 4.0–5.0 6.0–7.0 8.0–9.0	X

[a] Depths are below ground surface.

[b] Most recent promulgated, certified, and appropriate method will be used during field investigations.

[c] X = Analysis will be performed.

Table 4.5-1
Inorganic Chemicals above BVs at SWMU 33-006(a)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Nickel	Nitrate	Perchlorate	Selenium	Zinc
Soil Background Value[a]				**0.83**	**295**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**15.4**	**na[b]**	**na**	**1.52**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**6.58**	**na**	**na**	**0.3**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**9.38**	**na**	**na**	**0.3**	**60.2**
Construction Worker SSL[c]				**142**	**4390**	**na**	**134[d]**	**36.7**	**14,200**	**800**	**na**	**753**	**566,000**	**248**	**1750**	**106,000**
Industrial SSL[c]				**519**	**255,000**	**na**	**505[d]**	**388**	**51,900**	**800**	**na**	**25,700**	**2,080,000**	**908**	**6490**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**na**	**96.6[d]**	**23.4**	**3130**	**400**	**na**	**1560**	**125,000**	**54.8**	**391**	**23,500**
RE33-20-186626	33-60414	0.0–1.0	FILL	—[e]	—	8180 (J)	—	—	102 (J+)	—	—	—	—	—	—	—
RE33-20-186632	33-60414	2.0–3.0	FILL	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-21-222046	33-60415	4.0–5.0	QBT3	NA[f]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222047	33-60415	7.0–8.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-186634	33-60416	2.0–3.0	QBT3	—	—	—	10	—	—	—	—	—	—	—	1.21	—
RE33-20-186635	33-60417	2.0–3.0	QBT3	—	—	—	17.3	—	—	—	—	—	—	—	1.39	—

Table 4.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Nickel	Nitrate	Perchlorate	Selenium	Zinc
Soil Background Value[a]				**0.83**	**295**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**15.4**	**na[b]**	**na**	**1.52**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**6.58**	**na**	**na**	**0.3**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**9.38**	**na**	**na**	**0.3**	**60.2**
Construction Worker SSL[c]				**142**	**4390**	**na**	**134[d]**	**36.7**	**14,200**	**800**	**na**	**753**	**566,000**	**248**	**1750**	**106,000**
Industrial SSL[c]				**519**	**255,000**	**na**	**505[d]**	**388**	**51,900**	**800**	**na**	**25,700**	**2,080,000**	**908**	**6490**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**na**	**96.6[d]**	**23.4**	**3130**	**400**	**na**	**1560**	**125,000**	**54.8**	**391**	**23,500**
RE33-20-186630	33-60418	0.0–1.0	SOIL	—	—	—	—	—	385 (J+)	36.8	—	—	0.736 (J)	—	—	54.3
RE33-20-186636	33-60418	2.0–3.0	QBT3	—	—	—	21.7	—	37.5 (J+)	—	—	—	—	—	1.09	—
RE33-20-186631	33-60419	0.0–1.0	SOIL	—	—	—	—	—	392 (J+)	—	—	—	1.55	—	—	58.4
RE33-20-186637	33-60419	2.0–3.0	SOIL	—	—	—	—	—	48.9 (J+)	—	—	—	—	—	—	—
RE33-20-186638	33-60420	0.0–1.0	SOIL	—	—	—	—	—	—	—	—	—	0.902 (J)	0.000568 (J)	—	—
RE33-20-186639	33-60421	0.0–1.0	SOIL	—	—	—	—	—	82.7	—	—	—	1.17	—	—	—
RE33-20-186640	33-60420	2.2–3.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	1.04	—
RE33-20-186641	33-60421	2.0–3.0	QBT3	—	123	2270	9.68	3.36	6.34	—	—	7.52	—	—	1.18	—
RE33-20-186642	33-60422	0.0–1.0	FILL	—	—	—	—	—	—	—	—	—	1.17	—	—	—
RE33-20-186650	33-60422	2.0–2.9	FILL	—	—	—	—	—	—	—	—	—	—	0.00247	—	—
RE33-21-217579	33-60423	3.0–4.0	QBT3	NA	NA	NA	NA	NA	141 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-217580	33-60423	5.0–6.0	QBT3	NA	NA	NA	NA	NA	28.6 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222048	33-60423	6.0–7.0	QBT2	NA	NA	NA	NA	NA	15.9 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-217581	33-60941	0.0–1.0	SOIL	NA	NA	NA	NA	NA	39.3	NA	NA	NA	NA	NA	NA	NA
RE33-21-217582	33-60941	2.0–3.0	FILL	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-217583	33-60941	4.0–5.0	QBT3	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-217584	33-60941	6.0–7.0	QBT3	NA	NA	NA	NA	NA	4.94	NA	NA	NA	NA	NA	NA	NA
RE33-21-217585	33-60942	0.0–1.0	SOIL	NA	NA	NA	NA	NA	100	NA	NA	NA	NA	NA	NA	NA
RE33-21-217586	33-60942	2.0–3.0	FILL	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-217587	33-60942	5.5–6.5	QBT3	NA	NA	NA	NA	NA	12.4	NA	NA	NA	NA	NA	NA	NA
RE33-21-217588	33-60942	7.5–8.5	QBT3	NA	NA	NA	NA	NA	5.55	NA	NA	NA	NA	NA	NA	NA
RE33-21-217589	33-60943	0.0–1.0	SOIL	NA	NA	NA	NA	NA	1790	NA	NA	NA	NA	NA	NA	NA
RE33-21-217591	33-60943	1.0–2.0	QBT3	NA	NA	NA	NA	NA	19.9	NA	NA	NA	NA	NA	NA	NA
RE33-21-217592	33-60943	3.0–4.0	QBT3	NA	NA	NA	NA	NA	6.29	NA	NA	NA	NA	NA	NA	NA
RE33-21-217593	33-60944	0.0–0.1	SOIL	NA	NA	NA	NA	NA	295	NA	NA	NA	NA	NA	NA	NA
RE33-21-217663	33-60944	0.1–1.1	QBT3	NA	NA	NA	NA	NA	24.1	NA	NA	NA	NA	NA	NA	NA

Table 4.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Nickel	Nitrate	Perchlorate	Selenium	Zinc
Soil Background Value[a]				**0.83**	**295**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**15.4**	**na**[b]	**na**	**1.52**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**6.58**	**na**	**na**	**0.3**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**9.38**	**na**	**na**	**0.3**	**60.2**
Construction Worker SSL[c]				**142**	**4390**	**na**	**134**[d]	**36.7**	**14,200**	**800**	**na**	**753**	**566,000**	**248**	**1750**	**106,000**
Industrial SSL[c]				**519**	**255,000**	**na**	**505**[d]	**388**	**51,900**	**800**	**na**	**25,700**	**2,080,000**	**908**	**6490**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**na**	**96.6**[d]	**23.4**	**3130**	**400**	**na**	**1560**	**125,000**	**54.8**	**391**	**23,500**
RE33-21-217596	33-60944	2.1–3.1	QBT3	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-217597	33-60945	1.0–2.0	FILL	—	—	—	—	—	—	—	—	—	0.689 (J)	—	—	—
RE33-21-217598	33-60945	3.0–4.0	QBT3	—	—	4950	—	—	—	—	2630 (J+)	—	0.603 (J)	—	1.21	—
RE33-21-217599	33-60946	1.0–1.5	FILL	—	—	—	—	—	123 (J-)	—	—	—	0.937 (J)	—	—	—
RE33-21-217600	33-60946	3.0–4.0	QBT3	—	60.4	33,800	—	—	6.42 (J-)	—	3820 (J+)	—	0.775 (J)	0.00186	1.07	—
RE33-21-217601	33-60947	1.0–2.0	FILL	—	—	—	—	—	—	30.7	—	—	0.654 (J)	—	—	—
RE33-21-217602	33-60947	3.0–3.8	FILL	—	—	—	—	—	—	—	—	—	1.55	0.00103 (J)	—	—
RE33-21-217603	33-60948	0.2–1.2	QBT3	—	—	—	—	—	5.22 (J-)	—	—	—	—	—	1.43	—
RE33-21-217605	33-60948	2.2–3.2	QBT3	—	—	—	—	—	—	—	—	—	—	0.00048 (J)	1.33	—
RE33-21-217607	33-60949	1.0–2.0	SOIL	—	—	—	—	—	—	—	—	—	0.651 (J)	—	—	—
RE33-21-217608	33-60949	3.0–4.0	SOIL	—	—	—	—	—	—	—	—	—	—	0.00231	—	—
RE33-21-217609	33-60950	1.0–1.5	SOIL	—	—	—	—	—	113 (J-)	—	—	—	—	—	—	—
RE33-21-217610	33-60950	3.0–4.0	QBT3	—	—	—	—	—	14.5 (J-)	—	—	—	—	—	0.948 (J)	—
RE33-21-217611	33-60951	1.0–2.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	1.21	—
RE33-21-217612	33-60951	3.0–4.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	1.44	—
RE33-21-217613	33-60952	0.8–1.8	QBT3	—	—	—	—	—	—	—	—	—	—	—	1.37	—
RE33-21-217614	33-60952	2.8–3.8	QBT3	0.638 (U)	—	—	—	—	—	—	—	—	—	—	1.19	—
RE33-21-217615	33-60953	0.2–1.2	QBT3	—	—	—	—	—	—	—	—	—	—	—	1.29	—
RE33-21-217617	33-60953	2.2–3.2	QBT3	—	—	—	—	—	—	—	—	—	—	—	1.31	—
RE33-21-217619	33-60954	0.4–1.4	QBT3	0.601 (U)	—	—	—	—	—	—	—	—	—	—	1.21	—
RE33-21-217620	33-60954	2.4–3.4	QBT3	—	—	—	—	—	—	—	—	—	—	—	1.46	—
RE33-21-217621	33-60955	0.3–1.3	QBT3	—	—	—	—	—	—	—	—	—	—	—	0.993 (J)	—
RE33-21-217622	33-60955	2.3–3.3	QBT3	—	—	—	—	—	—	—	—	—	—	—	0.988 (J)	—
RE33-21-217650	33-60957	0.0–1.0	SED	NA	NA	NA	NA	NA	1510 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-217658	33-60957	2.0–3.0	QBT3	NA	NA	NA	NA	NA	910 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-217662	33-60957	4.0–5.0	QBT3	NA	NA	NA	NA	NA	17.7 (J)	NA	NA	NA	NA	NA	NA	NA

Table 4.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Nickel	Nitrate	Perchlorate	Selenium	Zinc
Soil Background Value[a]				**0.83**	**295**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**15.4**	**na**[b]	**na**	**1.52**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**6.58**	**na**	**na**	**0.3**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**9.38**	**na**	**na**	**0.3**	**60.2**
Construction Worker SSL[c]				**142**	**4390**	**na**	**134**[d]	**36.7**	**14,200**	**800**	**na**	**753**	**566,000**	**248**	**1750**	**106,000**
Industrial SSL[c]				**519**	**255,000**	**na**	**505**[d]	**388**	**51,900**	**800**	**na**	**25,700**	**2,080,000**	**908**	**6490**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**na**	**96.6**[d]	**23.4**	**3130**	**400**	**na**	**1560**	**125,000**	**54.8**	**391**	**23,500**
RE33-21-217651	33-60958	0.0–1.0	SED	NA	NA	NA	NA	NA	2660 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-217655	33-60958	2.0–2.2	SED	NA	NA	NA	NA	NA	378 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-217595	33-60958	2.2–3.2	QBT3	NA	NA	NA	NA	NA	34.9	NA	NA	NA	NA	NA	NA	NA
RE33-21-217659	33-60958	4.2–5.2	QBT3	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-217652	33-60959	0.0–0.5	FILL	NA	NA	NA	NA	NA	110 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-217660	33-60959	0.5–1.5	QBT3	NA	NA	NA	NA	NA	24.2 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-217664	33-60959	2.5–3.5	QBT3	NA	NA	NA	NA	NA	13.2 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-217653	33-60960	0.0–1.0	SOIL	NA	NA	NA	NA	NA	83.9	NA	NA	NA	NA	NA	NA	NA
RE33-21-217657	33-60960	2.0–2.3	SOIL	NA	NA	NA	NA	NA	39.1	NA	NA	NA	NA	NA	NA	NA
RE33-21-217661	33-60960	2.3–3.3	QBT3	NA	NA	NA	NA	NA	53.5	NA	NA	NA	NA	NA	NA	NA
RE33-21-217665	33-60960	4.3–5.3	QBT2	NA	NA	NA	NA	NA	14.3	NA	NA	NA	NA	NA	NA	NA
RE33-21-222049	33-61068	0.0–1.0	FILL	NA	NA	NA	NA	NA	432 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222050	33-61068	2.0–3.0	FILL	NA	NA	NA	NA	NA	139 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222051	33-61068	4.8–5.8	QBT3	NA	NA	NA	NA	NA	5.94 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222052	33-61068	6.8–7.8	QBT3	NA	NA	NA	NA	NA	4.94 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222053	33-61069	0.0–1.0	FILL	NA	NA	NA	NA	NA	1500 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222054	33-61069	2.0–3.0	FILL	NA	NA	NA	NA	NA	112 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222055	33-61069	4.8–5.8	QBT3	NA	NA	NA	NA	NA	10 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222056	33-61069	6.8–7.8	QBT3	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-222057	33-61070	0.0–1.0	FILL	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-222058	33-61070	2.0–3.0	FILL	NA	NA	NA	NA	NA	97.1 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222059	33-61070	3.8–4.8	QBT3	NA	NA	NA	NA	NA	8.89 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222060	33-61070	5.8–6.8	QBT3	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-222061	33-61071	0.0–1.0	FILL	NA	NA	NA	NA	NA	367 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222062	33-61071	2.0–3.0	FILL	NA	NA	NA	NA	NA	67.5 (J)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222063	33-61071	4.0–5.0	QBT3	NA	NA	NA	NA	NA	12.7 (J)	NA	NA	NA	NA	NA	NA	NA

Table 4.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Nickel	Nitrate	Perchlorate	Selenium	Zinc
Soil Background Value[a]				**0.83**	**295**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**15.4**	**na[b]**	**na**	**1.52**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**6.58**	**na**	**na**	**0.3**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**9.38**	**na**	**na**	**0.3**	**60.2**
Construction Worker SSL[c]				**142**	**4390**	**na**	**134[d]**	**36.7**	**14,200**	**800**	**na**	**753**	**566,000**	**248**	**1750**	**106,000**
Industrial SSL[c]				**519**	**255,000**	**na**	**505[d]**	**388**	**51,900**	**800**	**na**	**25,700**	**2,080,000**	**908**	**6490**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**na**	**96.6[d]**	**23.4**	**3130**	**400**	**na**	**1560**	**125,000**	**54.8**	**391**	**23,500**
RE33-21-222064	33-61071	6.0–7.0	QBT3	NA	NA	NA	NA	NA	13.3 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222065	33-61072	0.0–1.0	SOIL	NA	NA	NA	NA	NA	62.8 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222067	33-61072	1.0–2.0	QBT3	NA	NA	NA	NA	NA	10.7 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222068	33-61072	3.0–4.0	QBT3	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-222069	33-61073	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-222071	33-61073	1.0–2.0	QBT3	NA	NA	NA	NA	NA	7.06 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222072	33-61073	3.0–4.0	QBT3	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-222073	33-61074	0.0–0.5	SOIL	NA	NA	NA	NA	NA	24.5 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222075	33-61074	0.5–1.5	QBT3	NA	NA	NA	NA	NA	12.5 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222076	33-61074	2.5–3.5	QBT3	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-222077	33-61075	0.0–0.5	FILL	NA	NA	NA	NA	NA	28 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222079	33-61075	0.5–1.5	QBT3	NA	NA	NA	NA	NA	6.9 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222080	33-61075	2.5–3.5	QBT3	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-222081	33-61076	0.0–0.4	SOIL	NA	NA	NA	NA	NA	48.6	NA	NA	NA	NA	NA	NA	NA
RE33-21-222083	33-61076	0.4–1.4	QBT3	NA	NA	NA	NA	NA	5.94	NA	NA	NA	NA	NA	NA	NA
RE33-21-222084	33-61076	1.4–2.4	QBT3	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-222087	33-61077	0.0–1.0	QBT3	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-222088	33-61077	2.0–3.0	QBT3	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-222089	33-61078	0.0–0.2	SOIL	NA	NA	NA	NA	NA	602	NA	NA	NA	NA	NA	NA	NA
RE33-21-222091	33-61078	0.2–1.2	QBT3	NA	NA	NA	NA	NA	13.5	NA	NA	NA	NA	NA	NA	NA
RE33-21-222092	33-61078	2.2–3.2	QBT3	NA	NA	NA	NA	NA	5.37	NA	NA	NA	NA	NA	NA	NA
RE33-21-222095	33-61079	0.0–1.0	QBT3	NA	NA	NA	NA	NA	19.7	NA	NA	NA	NA	NA	NA	NA
RE33-21-222096	33-61079	2.0–3.0	QBT3	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-222097	33-61080	0.0–1.0	SOIL	NA	NA	NA	NA	NA	534 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222098	33-61080	2.0–3.0	FILL	NA	NA	NA	NA	NA	—	NA	NA	NA	NA	NA	NA	NA
RE33-21-222099	33-61080	3.8–4.8	QBT2	NA	NA	NA	NA	NA	6.29 (J-)	NA	NA	NA	NA	NA	NA	NA

Table 4.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Nickel	Nitrate	Perchlorate	Selenium	Zinc
Soil Background Value[a]				**0.83**	**295**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**15.4**	**na[b]**	**na**	**1.52**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**6.58**	**na**	**na**	**0.3**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**9.38**	**na**	**na**	**0.3**	**60.2**
Construction Worker SSL[c]				**142**	**4390**	**na**	**134[d]**	**36.7**	**14,200**	**800**	**na**	**753**	**566,000**	**248**	**1750**	**106,000**
Industrial SSL[c]				**519**	**255,000**	**na**	**505[d]**	**388**	**51,900**	**800**	**na**	**25,700**	**2,080,000**	**908**	**6490**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**na**	**96.6[d]**	**23.4**	**3130**	**400**	**na**	**1560**	**125,000**	**54.8**	**391**	**23,500**
RE33-21-222100	33-61080	5.8–6.8	QBT2	NA	NA	NA	NA	NA	8.1 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222101	33-61081	0.0–1.0	SOIL	NA	NA	NA	NA	NA	290 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222103	33-61081	2.0–3.0	QBT2	NA	NA	NA	NA	NA	46.4 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222104	33-61081	4.0–5.0	QBT2	NA	NA	NA	NA	NA	7.91 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222105	33-61082	0.0–1.0	SOIL	NA	NA	NA	NA	NA	390 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222106	33-61082	2.0–2.5	SOIL	NA	NA	NA	NA	NA	87.3 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222107	33-61082	2.5–3.5	QBT2	NA	NA	NA	NA	NA	90.3 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222108	33-61082	4.5–5.5	QBT2	NA	NA	NA	NA	NA	9.65 (J-)	NA	NA	NA	NA	NA	NA	NA
RE33-21-222109	33-61083	0.0–1.0	SOIL	NA	NA	NA	NA	NA	176	NA	NA	NA	NA	NA	NA	NA
RE33-21-222110	33-61083	2.0–2.5	SOIL	NA	NA	NA	NA	NA	140	NA	NA	NA	NA	NA	NA	NA
RE33-21-222111	33-61083	2.5–3.5	QBT2	NA	NA	NA	NA	NA	80.6	NA	NA	NA	NA	NA	NA	NA
RE33-21-222112	33-61083	4.5–5.5	QBT2	NA	NA	NA	NA	NA	17.9	NA	NA	NA	NA	NA	NA	NA

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] BVs from LANL (1998, 059730).

[b] na = Not available.

[c] SSLs from NMED (2022, 702484) unless otherwise noted.

[d] SSL for total chromium.

[e] — = Not detected or not detected above BV.

[f] NA = Not analyzed.

Table 4.5-2
Proposed Sampling and Analysis at SWMU 33-006(a)

Sampling Objective	Location Number	Location Description	Depth[a] (ft)	Copper (SW-846:6010D [b])
Determine nature and extent of copper around location 33-60415	Grid locations 6a-1 through 6a-16	Grid sampling every 20 ft around location 33-60415	0.0–1.0 2.0–3.0 0.0–1.0 into tuff 2.0–3.0 into tuff	X[c]
Determine nature and extent of copper around location 33-60423	Grid locations 6a-17 through 6a-32	Grid sampling every 20 ft around location 33-60423	0.0–1.0 2.0–3.0 0.0–1.0 into tuff 2.0–3.0 into tuff	X

[a] Depths are below ground surface, unless specified otherwise.

[b] Most recent promulgated, certified, and appropriate method will be used during field investigations.

[c] X = Analysis will be performed.

Table 4.6-1
Inorganic Chemicals above BVs at SWMU 33-008(c)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Mercury	Nickel	Selenium	Silver	Thallium	Uranium	Vanadium	Zinc
Soil Background Value[a]				**0.83**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**0.1**	**15.4**	**1.52**	**1**	**0.73**	**1.82**	**39.6**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**0.1**	**6.58**	**0.3**	**1**	**1.1**	**2.4**	**17**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**0.1**	**9.38**	**0.3**	**1**	**0.73**	**2.22**	**19.7**	**60.2**
Construction Worker SSL[b]				**142**	**4390**	**148**	**72.1**	**na**[c]	**134**[d]	**36.7**	**14,200**	**800**	**na**	**77.1**	**753**	**1750**	**1770**	**3.54**	**277**	**614**	**106,000**
Industrial SSL[b]				**519**	**255,000**	**2580**	**1110**	**na**	**505**[d]	**388**	**51,900**	**800**	**na**	**389**	**25,700**	**6490**	**6490**	**13**	**3880**	**6530**	**389,000**
Residential SSL[b]				**31.3**	**15,600**	**156**	**70.5**	**na**	**96.6**[d]	**23.4**	**3130**	**400**	**na**	**23.5**	**1560**	**391**	**391**	**0.782**	**234**	**394**	**23,500**
RE33-20-190358	33-01670	0.0–0.1	SOIL	—[e]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	NA[f]	—	—
0333-96-0652	33-01670	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.81 (U)	2.6	—	—
RE33-20-190359	33-01670	5.0–6.0	QBT3	0.808 (U)	—	—	—	—	12.2	—	—	—	—	—	—	0.93 (J)	—	—	NA	—	—
RE33-21-217928	33-01671	1.8–2.8	QBT3	1.44 (U)	NA	NA	NA	NA	NA	NA	56.9 (J)	39.8 (J)	NA	NA	NA	NA	NA	NA	NA	NA	64.1 (J)
RE33-21-217929	33-01671	3.8–4.8	QBT3	0.757 (U)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-224204	33-01671	5.0–6.0	QBT3	NA	NA	NA	NA	NA	NA	NA	—	—	NA	NA	NA	NA	NA	NA	NA	NA	—
RE33-20-190363	33-01672	5.0–6.0	QBT3	—	—	—	—	—	13.3	—	—	—	—	—	—	0.989 (J)	—	—	NA	—	—
RE33-20-190364	33-01672	9.0–10.0	QBT3	—	—	—	—	—	8.01	—	—	—	—	—	—	0.821 (J)	—	—	NA	—	—
RE33-21-217938	33-01673	2.0–3.0	QBT3	NA	NA	NA	NA	NA	NA	NA	27.8	16.4 (J)	NA	NA	NA	NA	NA	NA	NA	NA	—
RE33-21-217939	33-01674	2.0–3.0	QBT3	NA	NA	NA	NA	NA	NA	NA	56.2	41.6 (J)	NA	NA	NA	NA	NA	NA	NA	NA	—
0333-96-0659	33-01675	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.76 (U)	2.79	—	—
RE33-20-190365	33-01679	0.0–1.0	SOIL	—	—	—	0.401 (J)	—	—	—	26.7 (J)	—	—	—	—	—	4.53	—	NA	—	119
0333-96-0673	33-01679	0.0–2.0	SOIL	5.6 (U)	—	—	0.71 (U)	—	—	—	24.6	—	—	—	—	—	—	—	3.22	—	114
0333-96-0674	33-01679	3.0–5.0	SOIL	5.9 (U)	—	—	0.74 (U)	—	—	—	—	—	—	—	—	—	—	—	2.3	—	—
RE33-20-190366	33-01679	5.0–6.0	QBT3	—	—	—	—	—	23	—	—	—	—	—	—	0.847 (J)	—	—	NA	—	—
0333-96-0675	33-01679	5.0–7.0	Qbt3	5.9 (U)	—	—	—	—	7.8	—	5 (J)	—	—	—	—	0.39 (U)	—	—	—	—	—
RE33-20-190367	33-01679	9.0–10.0	QBT3	—	—	—	—	—	8.05 (J+)	—	—	—	—	—	—	0.868 (J)	—	—	NA	—	—
RE33-21-217940	33-01680	6.0–7.0	FILL	NA	NA	NA	NA	NA	13.9	NA	226	87.4 (J)	NA	0.952	NA	NA	NA	NA	NA	NA	238
RE33-20-190370	33-01680	9.0–10.0	QBT3	—	—	—	—	—	—	—	164 (J)	48.8 (J+)	—	0.172	—	0.962 (J)	—	—	NA	—	—
RE33-20-190373	33-01681	9.0–10.0	QBT3	—	—	—	—	—	8.44 (J+)	—	32.7	17.9	—	0.246	—	0.792 (J)	—	—	NA	—	84.8
RE33-20-190375	33-01682	5.0–6.0	QBT3	—	—	—	—	—	12.3	—	5.18 (J)	—	—	—	—	0.971 (J)	—	—	NA	—	—
RE33-20-190376	33-01682	9.0–10.0	QBT3	0.533 (U)	—	—	—	—	14	—	38.8 (J)	17 (J+)	—	—	23.5 (J)	0.805 (J)	—	—	NA	—	64.1
RE33-20-190378	33-01684	5.0–6.0	QBT3	—	62.6	—	—	5800	17.8	—	12 (J)	—	—	—	—	0.767 (J)	—	—	NA	—	—
RE33-20-190379	33-01684	9.0–10.0	QBT3	—	—	—	—	—	11.1 (J+)	—	5.49	—	—	—	—	0.79 (J)	—	—	NA	—	—

Table 4.6-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Mercury	Nickel	Selenium	Silver	Thallium	Uranium	Vanadium	Zinc
Soil Background Value[a]				**0.83**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**0.1**	**15.4**	**1.52**	**1**	**0.73**	**1.82**	**39.6**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**0.1**	**6.58**	**0.3**	**1**	**1.1**	**2.4**	**17**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**0.1**	**9.38**	**0.3**	**1**	**0.73**	**2.22**	**19.7**	**60.2**
Construction Worker SSL[b]				**142**	**4390**	**148**	**72.1**	**na**[c]	**134**[d]	**36.7**	**14,200**	**800**	**na**	**77.1**	**753**	**1750**	**1770**	**3.54**	**277**	**614**	**106,000**
Industrial SSL[b]				**519**	**255,000**	**2580**	**1110**	**na**	**505**[d]	**388**	**51,900**	**800**	**na**	**389**	**25,700**	**6490**	**6490**	**13**	**3880**	**6530**	**389,000**
Residential SSL[b]				**31.3**	**15,600**	**156**	**70.5**	**na**	**96.6**[d]	**23.4**	**3130**	**400**	**na**	**23.5**	**1560**	**391**	**391**	**0.782**	**234**	**394**	**23,500**
RE33-20-190361	33-01685	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	1.16	—	—	NA	—	—
RE33-20-190350	33-60676	0.0–1.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	NA	—	—
RE33-20-190354	33-60676	5.0–6.0	QBT3	—	—	—	—	—	10.4	—	—	—	—	—	—	1.12	—	—	NA	—	—
RE33-20-190351	33-60677	0.0–0.1	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	NA	—	—
RE33-20-190355	33-60677	5.0–6.0	QBT3	0.906 (J)	—	—	—	2260	25.2	—	—	—	—	—	—	0.926 (J)	—	—	NA	—	—
RE33-20-190352	33-60678	0.0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	NA	—	—
RE33-20-190356	33-60678	5.0–6.0	QBT3	—	—	—	—	—	9.03	—	—	—	—	—	—	1.13	—	—	NA	—	—
RE33-20-190353	33-60679	0.0–0.3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	NA	—	—
RE33-20-190357	33-60679	5.0–6.0	QBT3	0.678 (U)	—	—	—	—	13.6	—	—	—	—	—	—	0.987	—	—	NA	—	—
RE33-20-190380	33-60680	0.0–0.95	SOIL	1.16 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	NA	—	—
RE33-20-190384	33-60680	5.0–6.0	QBT3	0.63 (U)	—	1.33	—	4140	21.6	—	—	—	—	—	—	1.19	—	—	NA	—	—
RE33-20-190388	33-60680	9.0–10.0	QBT2	—	—	—	—	5070	10.1	—	—	—	2060 (J+)	—	—	1.11	—	—	NA	—	—
RE33-20-190381	33-60681	0.0–1.0	SED	—	—	—	—	—	12	5.45	—	—	—	—	—	0.583 (J)	—	—	NA	24.1	—
RE33-20-190385	33-60681	5.0–6.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	NA	—	—
RE33-20-190389	33-60681	9.0–10.0	QBT2	—	—	—	—	—	12.4	—	—	—	—	—	—	1.09 (J)	—	—	NA	—	—
RE33-20-190382	33-60682	0.0–1.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	1.17 (U)	—	NA	—	—
RE33-20-190386	33-60682	5.0–6.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	1.06 (U)	—	NA	—	—
RE33-20-190390	33-60682	9.0–10.0	QBT3	—	—	—	—	7310	—	—	—	—	—	—	—	1.06	1.05 (U)	—	NA	—	—
RE33-20-190383	33-60683	0.0–1.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	1.17 (U)	—	NA	—	—
RE33-20-190387	33-60683	5.0–6.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	1.11 (U)	—	NA	—	—
RE33-20-190391	33-60683	9.0–10.0	QBT3	—	—	—	—	—	7.61	—	—	—	—	—	—	0.748 (J)	1.04 (U)	—	NA	—	—
RE33-21-224217	33-61952	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	33.2 (J)	—	NA	0.159	NA	NA	NA	NA	NA	NA	91.9
RE33-21-224218	33-61952	5.0–6.0	QBT3	NA	NA	NA	NA	NA	—	NA	13.5 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224219	33-61952	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	8.86 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224220	33-61953	0.0–1.0	FILL	NA	NA	NA	NA	NA	—	NA	2650 (J)	245 (J)	NA	1.95 (J)	NA	NA	NA	NA	NA	NA	1270 (J)
RE33-21-224221	33-61953	5.0–6.0	QBT3	NA	NA	NA	NA	NA	—	NA	6320 (J)	1110 (J)	NA	0.456 (J)	NA	NA	NA	NA	NA	NA	1840 (J)

Table 4.6-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Mercury	Nickel	Selenium	Silver	Thallium	Uranium	Vanadium	Zinc
Soil Background Value[a]				**0.83**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**0.1**	**15.4**	**1.52**	**1**	**0.73**	**1.82**	**39.6**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**0.1**	**6.58**	**0.3**	**1**	**1.1**	**2.4**	**17**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**0.1**	**9.38**	**0.3**	**1**	**0.73**	**2.22**	**19.7**	**60.2**
Construction Worker SSL[b]				**142**	**4390**	**148**	**72.1**	**na[c]**	**134[d]**	**36.7**	**14,200**	**800**	**na**	**77.1**	**753**	**1750**	**1770**	**3.54**	**277**	**614**	**106,000**
Industrial SSL[b]				**519**	**255,000**	**2580**	**1110**	**na**	**505[d]**	**388**	**51,900**	**800**	**na**	**389**	**25,700**	**6490**	**6490**	**13**	**3880**	**6530**	**389,000**
Residential SSL[b]				**31.3**	**15,600**	**156**	**70.5**	**na**	**96.6[d]**	**23.4**	**3130**	**400**	**na**	**23.5**	**1560**	**391**	**391**	**0.782**	**234**	**394**	**23,500**
RE33-21-224222	33-61953	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	22.1 (J)	92.9 (J)	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224223	33-61954	0.0–1.0	SOIL	NA	NA	NA	NA	NA	180 (J)	NA	5710 (J)	741 (J)	NA	16.2 (J)	NA	NA	NA	NA	NA	NA	1740 (J)
RE33-21-224224	33-61954	5.0–6.0	QBT3	NA	NA	NA	NA	NA	—	NA	226 (J)	19.5 (J)	NA	0.297 (J)	NA	NA	NA	NA	NA	NA	—
RE33-21-224225	33-61954	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	31.7 (J)	17.7 (J)	NA	0.688 (J)	NA	NA	NA	NA	NA	NA	66.1 (J)
RE33-21-224226	33-61955	0.0–1.0	SOIL	NA	NA	NA	NA	NA	31.1 (J)	NA	291 (J)	228 (J)	NA	3.36 (J)	NA	NA	NA	NA	NA	NA	3220 (J)
RE33-21-224227	33-61955	5.0–6.0	QBT3	NA	NA	NA	NA	NA	—	NA	41.6 (J)	11.4 (J)	NA	—	NA	NA	NA	NA	NA	NA	240 (J)
RE33-21-224228	33-61955	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224229	33-61956	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	496 (J)	150 (J)	NA	1.92 (J)	NA	NA	NA	NA	NA	NA	712 (J)
RE33-21-224230	33-61956	5.0–6.0	QBT3	NA	NA	NA	NA	NA	—	NA	12.1 (J)	—	NA	0.123 (J)	NA	NA	NA	NA	NA	NA	—
RE33-21-224231	33-61956	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	6.93 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224232	33-61957	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	743 (J)	320 (J)	NA	1.93 (J)	NA	NA	NA	NA	NA	NA	767 (J)
RE33-21-224233	33-61957	5.0–6.0	QBT3	NA	NA	NA	NA	NA	—	NA	33.4 (J)	29.1 (J)	NA	0.136 (J)	NA	NA	NA	NA	NA	NA	74.5 (J)
RE33-21-224234	33-61957	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	8.24 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224235	33-61958	0.0–1.0	SOIL	NA	NA	NA	NA	NA	49.1	NA	862 (J)	215 (J)	NA	2.91 (J)	NA	NA	NA	NA	NA	NA	1310
RE33-21-224236	33-61958	5.0–6.0	QBT3	NA	NA	NA	NA	NA	—	NA	103 (J)	58.2 (J)	NA	0.202 (J)	NA	NA	NA	NA	NA	NA	94.7
RE33-21-224237	33-61958	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	20.5 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224238	33-61959	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	146 (J)	81.9 (J)	NA	0.495 (J)	NA	NA	NA	NA	NA	NA	180
RE33-21-224239	33-61959	5.0–6.0	QBT3	NA	NA	NA	NA	NA	—	NA	8.78 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224240	33-61959	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224241	33-61960	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	613 (J)	70.1 (J)	NA	0.677 (J)	NA	NA	NA	NA	NA	NA	382
RE33-21-224242	33-61960	5.0–6.0	QBT3	NA	NA	NA	NA	NA	—	NA	9.33 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224243	33-61960	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	10.3 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224244	33-61961	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	63.8 (J)	—	NA	0.184 (J)	NA	NA	NA	NA	NA	NA	70.1 (J)
RE33-21-224245	33-61961	5.0–6.0	QBT3	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224246	33-61961	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224247	33-61962	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	19.2	—	NA	0.114	NA	NA	NA	NA	NA	NA	—

Table 4.6-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Mercury	Nickel	Selenium	Silver	Thallium	Uranium	Vanadium	Zinc
Soil Background Value[a]				**0.83**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**0.1**	**15.4**	**1.52**	**1**	**0.73**	**1.82**	**39.6**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**0.1**	**6.58**	**0.3**	**1**	**1.1**	**2.4**	**17**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**0.1**	**9.38**	**0.3**	**1**	**0.73**	**2.22**	**19.7**	**60.2**
Construction Worker SSL[b]				**142**	**4390**	**148**	**72.1**	**na**[c]	**134**[d]	**36.7**	**14,200**	**800**	**na**	**77.1**	**753**	**1750**	**1770**	**3.54**	**277**	**614**	**106,000**
Industrial SSL[b]				**519**	**255,000**	**2580**	**1110**	**na**	**505**[d]	**388**	**51,900**	**800**	**na**	**389**	**25,700**	**6490**	**6490**	**13**	**3880**	**6530**	**389,000**
Residential SSL[b]				**31.3**	**15,600**	**156**	**70.5**	**na**	**96.6**[d]	**23.4**	**3130**	**400**	**na**	**23.5**	**1560**	**391**	**391**	**0.782**	**234**	**394**	**23,500**
RE33-21-224248	33-61962	5.0–6.0	SOIL	NA	NA	NA	NA	NA	—	NA	60.7	29.4	NA	0.347	NA	NA	NA	NA	NA	NA	68.3 (J+)
RE33-21-224249	33-61962	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	27.9	1310	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224250	33-61963	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	151 (J)	67.4 (J)	NA	1.76	NA	NA	NA	NA	NA	NA	304
RE33-21-224251	33-61963	5.0–6.0	QBT3	NA	NA	NA	NA	NA	—	NA	13.7 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224252	33-61963	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	5.43 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224253	33-61964	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	1260 (J)	143 (J)	NA	0.338	NA	NA	NA	NA	NA	NA	557
RE33-21-224254	33-61964	5.0–6.0	QBT3	NA	NA	NA	NA	NA	—	NA	27.7 (J)	17.8 (J)	NA	—	NA	NA	NA	NA	NA	NA	66.8
RE33-21-224255	33-61964	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	31.7 (J)	20.7 (J)	NA	—	NA	NA	NA	NA	NA	NA	83.5
RE33-21-224256	33-61965	0.0–1.0	FILL	NA	NA	NA	NA	NA	—	NA	48.8 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224257	33-61965	5.0–6.0	FILL	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224258	33-61965	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	11.1 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224259	33-61966	0.0–1.0	FILL	NA	NA	NA	NA	NA	—	NA	25.1 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	65
RE33-21-224260	33-61966	5.0–6.0	FILL	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224261	33-61966	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224262	33-61967	0.0–1.0	FILL	NA	NA	NA	NA	NA	—	NA	28.8 (J)	25.6	NA	—	NA	NA	NA	NA	NA	NA	75.8
RE33-21-224263	33-61967	5.0–6.0	FILL	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224264	33-61967	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224265	33-61968	0.0–1.0	SOIL	NA	NA	NA	NA	NA	NA	NA	25.6	—	NA	NA	NA	NA	NA	NA	NA	NA	54.1
RE33-21-224266	33-61968	5.0–6.0	QBT3	NA	NA	NA	NA	NA	NA	NA	—	—	NA	NA	NA	NA	NA	NA	NA	NA	—
RE33-21-224267	33-61968	9.0–10.0	QBT3	NA	NA	NA	NA	NA	NA	NA	—	—	NA	NA	NA	NA	NA	NA	NA	NA	—
RE33-21-224268	33-61969	0.0–1.0	SOIL	NA	NA	NA	NA	NA	NA	NA	153	77.5 (J+)	NA	NA	NA	NA	NA	NA	NA	NA	322
RE33-21-224269	33-61969	5.0–6.0	QBT3	NA	NA	NA	NA	NA	NA	NA	5.97	—	NA	NA	NA	NA	NA	NA	NA	NA	—
RE33-21-224270	33-61969	9.0–10.0	QBT3	NA	NA	NA	NA	NA	NA	NA	7.2	—	NA	NA	NA	NA	NA	NA	NA	NA	—
RE33-21-224271	33-61970	0.0–1.0	SOIL	NA	NA	NA	NA	NA	NA	NA	607	157 (J+)	NA	NA	NA	NA	NA	NA	NA	NA	611
RE33-21-224272	33-61970	5.0–6.0	QBT3	NA	NA	NA	NA	NA	NA	NA	61.4	24.5 (J+)	NA	NA	NA	NA	NA	NA	NA	NA	98.1
RE33-21-224273	33-61970	9.0–10.0	QBT3	NA	NA	NA	NA	NA	NA	NA	25.8	—	NA	NA	NA	NA	NA	NA	NA	NA	—

Table 4.6-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Mercury	Nickel	Selenium	Silver	Thallium	Uranium	Vanadium	Zinc
Soil Background Value[a]				**0.83**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**0.1**	**15.4**	**1.52**	**1**	**0.73**	**1.82**	**39.6**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**0.1**	**6.58**	**0.3**	**1**	**1.1**	**2.4**	**17**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**0.1**	**9.38**	**0.3**	**1**	**0.73**	**2.22**	**19.7**	**60.2**
Construction Worker SSL[b]				**142**	**4390**	**148**	**72.1**	**na**[c]	**134**[d]	**36.7**	**14,200**	**800**	**na**	**77.1**	**753**	**1750**	**1770**	**3.54**	**277**	**614**	**106,000**
Industrial SSL[b]				**519**	**255,000**	**2580**	**1110**	**na**	**505**[d]	**388**	**51,900**	**800**	**na**	**389**	**25,700**	**6490**	**6490**	**13**	**3880**	**6530**	**389,000**
Residential SSL[b]				**31.3**	**15,600**	**156**	**70.5**	**na**	**96.6**[d]	**23.4**	**3130**	**400**	**na**	**23.5**	**1560**	**391**	**391**	**0.782**	**234**	**394**	**23,500**
RE33-21-224274	33-61971	0.0–1.0	SOIL	NA	NA	NA	NA	NA	NA	NA	964	159 (J+)	NA	NA	NA	NA	NA	NA	NA	NA	1130
RE33-21-224275	33-61971	5.0–6.0	QBT3	NA	NA	NA	NA	NA	NA	NA	57.1	16.9 (J+)	NA	NA	NA	NA	NA	NA	NA	NA	71.4
RE33-21-224276	33-61971	9.0–10.0	QBT3	NA	NA	NA	NA	NA	NA	NA	6.14	—	NA	NA	NA	NA	NA	NA	NA	NA	—
RE33-21-224277	33-61972	0.0–0.3	FILL	NA	NA	NA	NA	NA	NA	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224278	33-61972	5.0–6.0	QBT3	NA	NA	NA	NA	NA	NA	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224279	33-61972	9.0–10.0	QBT3	NA	NA	NA	NA	NA	NA	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224280	33-61973	0.0–0.7	FILL	NA	NA	NA	NA	NA	NA	NA	33.8 (J)	—	NA	0.286 (J)	NA	NA	NA	NA	NA	NA	56.4
RE33-21-224281	33-61973	5.0–6.0	QBT3	NA	NA	NA	NA	NA	NA	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224282	33-61973	9.0–10.0	QBT3	NA	NA	NA	NA	NA	NA	NA	4.79 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224283	33-61974	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	165 (J)	43.1 (J)	NA	1.19	NA	NA	NA	NA	NA	NA	240
RE33-21-224284	33-61974	5.0–6.0	SOIL	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224285	33-61974	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	4.92 (J)	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224286	33-61975	0.0–1.0	FILL	NA	NA	NA	NA	NA	NA	NA	1350 (J)	—	NA	0.585 (J)	NA	NA	NA	NA	NA	NA	—
RE33-21-224287	33-61975	5.0–6.0	QBT3	NA	NA	NA	NA	NA	NA	NA	6.35 (J)	13.5	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224288	33-61975	9.0–10.0	QBT3	NA	NA	NA	NA	NA	NA	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224289	33-61976	0.0–1.0	FILL	NA	NA	NA	NA	NA	NA	NA	25.7 (J)	—	NA	0.178 (J)	NA	NA	NA	NA	NA	NA	—
RE33-21-224290	33-61976	5.0–6.0	QBT3	NA	NA	NA	NA	NA	NA	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224291	33-61976	9.0–10.0	QBT3	NA	NA	NA	NA	NA	NA	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224292	33-61977	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	53.3 (J)	28.2 (J)	NA	1.26	NA	NA	NA	NA	NA	NA	130
RE33-21-224293	33-61977	5.0–6.0	SOIL	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	414
RE33-21-224294	33-61977	9.0–10.0	QBT2	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224295	33-61978	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	28.3 (J)	23 (J)	NA	0.293	NA	NA	NA	NA	NA	NA	84.4
RE33-21-224296	33-61978	5.0–6.0	SOIL	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	89.8
RE33-21-224297	33-61978	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224298	33-61979	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	70.9
RE33-21-224299	33-61979	5.0–6.0	SOIL	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—

Table 4.6-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Mercury	Nickel	Selenium	Silver	Thallium	Uranium	Vanadium	Zinc
Soil Background Value[a]				**0.83**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**0.1**	**15.4**	**1.52**	**1**	**0.73**	**1.82**	**39.6**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**0.1**	**6.58**	**0.3**	**1**	**1.1**	**2.4**	**17**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**0.1**	**9.38**	**0.3**	**1**	**0.73**	**2.22**	**19.7**	**60.2**
Construction Worker SSL[b]				**142**	**4390**	**148**	**72.1**	**na**[c]	**134**[d]	**36.7**	**14,200**	**800**	**na**	**77.1**	**753**	**1750**	**1770**	**3.54**	**277**	**614**	**106,000**
Industrial SSL[b]				**519**	**255,000**	**2580**	**1110**	**na**	**505**[d]	**388**	**51,900**	**800**	**na**	**389**	**25,700**	**6490**	**6490**	**13**	**3880**	**6530**	**389,000**
Residential SSL[b]				**31.3**	**15,600**	**156**	**70.5**	**na**	**96.6**[d]	**23.4**	**3130**	**400**	**na**	**23.5**	**1560**	**391**	**391**	**0.782**	**234**	**394**	**23,500**
RE33-21-224300	33-61979	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	5.13	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224301	33-61980	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	43.9	—	NA	0.164	NA	NA	NA	NA	NA	NA	118
RE33-21-224302	33-61980	5.0–6.0	SOIL	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224303	33-61980	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	5.74	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224304	33-61981	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224305	33-61981	5.0–6.0	SOIL	NA	NA	NA	NA	NA	—	NA	21.5	—	NA	—	NA	NA	NA	NA	NA	NA	76
RE33-21-224306	33-61981	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	5.77	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224307	33-61982	0.0–1.0	SOIL	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224308	33-61982	5.0–6.0	SOIL	NA	NA	NA	NA	NA	—	NA	—	—	NA	—	NA	NA	NA	NA	NA	NA	—
RE33-21-224309	33-61982	9.0–10.0	QBT3	NA	NA	NA	NA	NA	—	NA	5.15	—	NA	—	NA	NA	NA	NA	NA	NA	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] BVs from LANL (1998, 059730).

[b] SSLs from NMED (2019, 700550) unless otherwise noted.

[c] na = Not available.

[d] SSL for total chromium.

[e] — = Not detected or not detected above BV.

[f] NA = Not analyzed.

Table 4.6-2
Organic Chemicals Detected at SWMU 33-008(c)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate
Construction Worker SSL[a]				**15,100**	**7530**	**242,000**	**75,300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**7530[b]**	**2310**	**5380**
Industrial SSL[a]				**50,500**	**25,300**	**960,000**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300[b]**	**323**	**1830**
Residential SSL[a]				**3480**	**1740**	**66,300**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740[b]**	**15.3**	**380**
0333-96-0652	33-01670	0–0.5	SOIL	—[c]	—	NA[d]	—	NA	NA	—	—	—	—	1.6	—
RE33-20-190359	33-01670	5.0–6.0	QBT3	—	—	0.0066	—	NA	NA	—	—	—	—	—	—
RE33-21-224203	33-01671	3.0–4.0	QBT3	—	—	NA	—	NA	NA	0.00331 (J)	0.00331 (J)	0.00331 (J)	0.00221 (J)	—	NA
RE33-21-217935	33-01672	2.0–3.0	QBT3	NA	NA	NA	NA	0.0267	0.0241 (J-)	NA	NA	NA	NA	NA	NA
RE33-21-217937	33-01672	4.0–5.0	QBT3	NA	NA	NA	NA	0.0109	0.0105 (J-)	NA	NA	NA	NA	NA	NA
RE33-20-190363	33-01672	5.0–6.0	QBT3	—	—	—	—	NA	NA	—	—	0.0117 (J)	0.0127 (J)	—	1.38
RE33-21-224205	33-01672	6.0–7.0	QBT3	NA	NA	NA	NA	0.0285	0.0189	NA	NA	NA	NA	NA	NA
RE33-20-190364	33-01672	9.0–10.0	QBT3	—	—	—	—	NA	NA	0.0199 (J)	0.0263 (J)	0.0259 (J)	0.0259 (J)	—	0.0135 (J)
0333-96-0659	33-01675	0–0.5	SOIL	—	—	NA	—	NA	NA	—	—	—	—	—	—
RE33-20-190365	33-01679	0.0–1.0	SOIL	0.0475	—	—	—	0.0054	0.00671	0.0234 (J)	0.0253 (J)	0.0279 (J)	0.0177 (J)	—	—
0333-96-0673	33-01679	0.0–2.0	SOIL	—	—	NA	—	NA	NA	0.058 (J)	0.077 (J)	0.056 (J)	0.053 (J)	0.06 (J)	—
0333-96-0674	33-01679	3.0–5.0	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—
RE33-21-217940	33-01680	6.0–7.0	FILL	0.11 (J+)	—	NA	0.162	NA	NA	0.356 (J+)	0.448 (J+)	0.445 (J+)	0.313 (J+)	0.19 (J+)	NA
RE33-21-224208	33-01680	6.0–7.0	QBT3	NA	NA	NA	NA	0.00371	—	NA	NA	NA	NA	NA	NA
RE33-20-190370	33-01680	9.0–10.0	QBT3	—	—	—	—	NA	NA	0.0114 (J)	—	—	—	—	—
RE33-21-224209	33-01680	9.0–10.0	QBT3	NA	NA	NA	NA	0.00148 (J)	—	NA	NA	NA	NA	NA	NA
RE33-21-224210	33-01681	6.59–7.0	QBT3	NA	NA	NA	NA	0.0167	0.00904	NA	NA	NA	NA	NA	NA
RE33-20-190373	33-01681	9.0–10.0	QBT3	0.193	—	—	0.365	NA	NA	0.677	0.882	0.892	0.467	0.335	0.81
RE33-21-224211	33-01681	9.0–10.0	QBT3	NA	NA	NA	NA	0.0192	0.00702	NA	NA	NA	NA	NA	NA
RE33-20-190376	33-01682	9.0–10.0	QBT3	—	—	—	—	NA	NA	0.0205 (J)	0.0205 (J)	0.0205 (J)	0.0165 (J)	—	—
RE33-21-217958	33-01684	4.0–5.0	FILL	NA	NA	NA	NA	0.0082	0.00443 (J-)	NA	NA	NA	NA	NA	NA
RE33-21-224214	33-01684	6.0–7.0	QBT3	NA	NA	NA	NA	—	0.00155 (J)	NA	NA	NA	NA	NA	NA
RE33-20-190379	33-01684	9.0–10.0	QBT3	—	—	—	—	NA	NA	—	—	—	—	—	—
RE33-20-190361	33-01685	5.0–6.0	QBT3	—	—	0.0051	—	NA	NA	—	—	—	—	—	—

Table 4.6-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate
Construction Worker SSL[a]				**15,100**	**7530**	**242,000**	**75300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**7530[b]**	**2310**	**5380**
Industrial SSL[a]				**50,500**	**25,300**	**960,000**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300[b]**	**323**	**1830**
Residential SSL[a]				**3480**	**1740**	**66,300**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740[b]**	**15.3**	**380**
RE33-20-190350	33-60676	0.0–1.0	SOIL	—	—	—	—	0.00737	0.00473	0.0116 (J)	—	0.014 (J)	—	—	—
RE33-20-190354	33-60676	5.0–6.0	QBT3	—	—	0.00332 (J)	—	NA	NA	—	—	—	—	—	—
RE33-20-190351	33-60677	0.0–0.1	SOIL	—	—	—	—	NA	NA	0.0125 (J)	—	—	—	—	—
RE33-20-190355	33-60677	5.0–6.0	QBT3	—	—	—	—	0.00124 (J)	—	—	—	—	—	—	—
RE33-20-190356	33-60678	5.0–6.0	QBT3	—	—	—	—	NA	NA	—	—	—	—	—	0.015 (J)
RE33-20-190353	33-60679	0.0–0.3	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	0.0188 (J)
RE33-20-190357	33-60679	5.0–6.0	QBT3	—	—	0.00553	—	NA	NA	—	—	—	—	—	—
RE33-20-190380	33-60680	0.0–0.95	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—
RE33-20-190383	33-60683	0.0–1.0	SOIL	—	—	—	—	NA	NA	0.0242 (J)	—	—	—	—	—
RE33-21-224217	33-61952	0.0–1.0	SOIL	0.0089	0.00651	NA	0.0257	NA	NA	0.107	0.143	0.153	0.0681	0.0579	NA
RE33-21-224218	33-61952	5.0–6.0	QBT3	—	—	NA	—	NA	NA	0.00245 (J)	0.0028 (J)	0.00349	—	—	NA
RE33-21-224219	33-61952	9.0–10.0	QBT3	—	—	NA	—	NA	NA	0.00419	0.00454	0.00559	0.00209 (J)	0.00209 (J)	NA
RE33-21-224220	33-61953	0.0–1.0	FILL	0.0142 (J)	—	NA	0.0135 (J)	NA	NA	0.0382	0.0507	0.0588	0.0318	0.022	NA
RE33-21-224221	33-61953	5.0–6.0	QBT3	0.036 (J)	—	NA	0.00686 (J)	NA	NA	—	0.0302	0.0388	0.0196	0.0144	NA
RE33-21-224222	33-61953	9.0–10.0	QBT3	—	—	NA	—	NA	NA	—	—	0.00237 (J)	—	—	NA
RE33-21-224223	33-61954	0.0–1.0	SOIL	0.0454 (J)	0.0101	NA	0.0964 (J)	NA	NA	0.251	0.33	0.386	0.129	0.144	NA
RE33-21-224224	33-61954	5.0–6.0	QBT3	—	—	NA	—	NA	NA	0.00308 (J)	0.00342	0.0041	—	—	NA
RE33-21-224225	33-61954	9.0–10.0	QBT3	—	—	NA	—	NA	NA	—	0.0034	0.00442	0.00204 (J)	—	NA
RE33-21-224226	33-61955	0.0–1.0	SOIL	0.0232 (J)	—	NA	0.0447 (J)	NA	NA	0.248	0.472	0.42	0.273	0.136	NA
RE33-21-224227	33-61955	5.0–6.0	QBT3	—	—	NA	0.0021 (J)	NA	NA	0.00838	0.0133	0.0154	0.00734	0.00559	NA
RE33-21-224229	33-61956	0.0–1.0	SOIL	1.52 (J)	—	NA	5.13 (J)	NA	NA	14.2	20.5	21.1	13.5	7.57	NA
RE33-21-224230	33-61956	5.0–6.0	QBT3	—	—	NA	0.0039 (J)	NA	NA	0.0128	0.0191	0.0206	0.0145	0.0078	NA
RE33-21-224231	33-61956	9.0–10.0	QBT3	—	—	NA	0.00244 (J)	NA	NA	0.00977	0.0129	0.0157	0.00559	0.00593	NA
RE33-21-224232	33-61957	0.0–1.0	SOIL	0.279 (J)	0.0279	NA	0.567 (J)	NA	NA	1.62	2.23	2.69	0.799	1.01	NA
RE33-21-224233	33-61957	5.0–6.0	QBT3	0.0265 (J)	0.00177 (J)	NA	0.0495 (J)	NA	NA	0.103	0.13	0.154	0.0477	0.0569	NA

Table 4.6-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate
Construction Worker SSL[a]				**15,100**	**7530**	**242,000**	**75300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**7530[b]**	**2310**	**5380**
Industrial SSL[a]				**50,500**	**25,300**	**960,000**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300[b]**	**323**	**1830**
Residential SSL[a]				**3480**	**1740**	**66,300**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740[b]**	**15.3**	**380**
RE33-21-224234	33-61957	9.0–10.0	QBT3	0.0585 (J)	0.00528	NA	0.126 (J)	NA	NA	0.18	0.219	0.241	0.0733	0.094	NA
RE33-21-224235	33-61958	0.0–1.0	SOIL	3.51	0.109 (J)	NA	6.87	NA	NA	10.4	11.9	12	6.9	4.63	NA
RE33-21-224236	33-61958	5.0–6.0	QBT3	0.0659	0.0043	NA	0.107	NA	NA	0.204	0.252	0.275	0.129	0.102	NA
RE33-21-224237	33-61958	9.0–10.0	QBT3	0.00786	—	NA	0.0161	NA	NA	0.0282	0.0304	0.0307	0.0161	0.0121	NA
RE33-21-224238	33-61959	0.0–1.0	SOIL	0.0372	—	NA	0.0638	NA	NA	0.276	0.383	0.431	0.206	0.167	NA
RE33-21-224239	33-61959	5.0–6.0	QBT3	0.016	—	NA	0.0407	NA	NA	0.104	0.145	0.147	0.0635	0.0613	NA
RE33-21-224240	33-61959	9.0–10.0	QBT3	0.00524	—	NA	0.00593	NA	NA	0.0213	0.023	0.0269	0.00908	0.0108	NA
RE33-21-224241	33-61960	0.0–1.0	SOIL	0.114	0.0185	NA	0.197	NA	NA	0.336	0.415	0.439	0.205	0.161	NA
RE33-21-224242	33-61960	5.0–6.0	QBT3	—	—	NA	0.00208 (J)	NA	NA	0.0052	0.00589	0.00658	0.00312 (J)	0.00242 (J)	NA
RE33-21-224243	33-61960	9.0–10.0	QBT3	—	—	NA	—	NA	NA	—	0.00602	0.00637	0.00318 (J)	0.00283 (J)	NA
RE33-21-224244	33-61961	0.0–1.0	SOIL	0.0159 (J)	—	NA	0.0301	NA	NA	0.104 (J)	0.122 (J)	0.122 (J)	0.062 (J)	0.0443 (J)	NA
RE33-21-224245	33-61961	5.0–6.0	QBT3	—	—	NA	0.00239 (J)	NA	NA	0.0218	0.0236	0.0222	0.0181	0.0215	NA
RE33-21-224246	33-61961	9.0–10.0	QBT3	—	—	NA	—	NA	NA	0.0105 (J)	0.0105 (J)	0.0112 (J)	0.00838 (J)	0.0105 (J)	NA
RE33-21-224247	33-61962	0.0–1.0	SOIL	—	—	NA	—	NA	NA	0.0302	0.0374	0.0391	0.0213	0.016 (J)	NA
RE33-21-224248	33-61962	5.0–6.0	SOIL	—	—	NA	—	NA	NA	—	—	—	—	—	NA
RE33-21-224249	33-61962	9.0–10.0	QBT3	—	—	NA	—	NA	NA	—	—	—	—	—	NA
RE33-21-224250	33-61963	0.0–1.0	SOIL	0.235	0.0142 (J)	NA	0.366	NA	NA	0.616	0.756	0.804	0.333	0.306	NA
RE33-21-224251	33-61963	5.0–6.0	QBT3	—	—	NA	0.00214 (J)	NA	NA	0.00642	0.00678	0.00857	0.00286 (J)	0.00321 (J)	NA
RE33-21-224252	33-61963	9.0–10.0	QBT3	0.0107	—	NA	0.0143	NA	NA	0.0233	0.0279	0.0297	0.0122	0.0111	NA
RE33-21-224253	33-61964	0.0–1.0	SOIL	0.0568	—	NA	0.0827	NA	NA	0.152	0.188	0.198	0.0827	0.0758	NA
RE33-21-224254	33-61964	5.0–6.0	QBT3	0.00821	—	NA	0.00205 (J)	NA	NA	0.0065	0.00787	0.00924	0.00342	0.00342	NA
RE33-21-224255	33-61964	9.0–10.0	QBT3	0.00209 (J)	—	NA	0.00174 (J)	NA	NA	0.00733	0.00942	0.0112	0.00454	0.00419	NA
RE33-21-224256	33-61965	0.0–1.0	FILL	0.00206 (J)	—	NA	0.00343	NA	NA	0.013	0.0158	0.0185	0.00996	0.00687	NA
RE33-21-224257	33-61965	5.0–6.0	FILL	—	—	NA	—	NA	NA	—	—	—	—	—	NA
RE33-21-224258	33-61965	9.0–10.0	QBT3	—	—	NA	—	NA	NA	—	0.00211 (J)	0.00246 (J)	—	—	NA

Table 4.6-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate
Construction Worker SSL[a]				**15,100**	**7530**	**242,000**	**75300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**7530[b]**	**2310**	**5380**
Industrial SSL[a]				**50,500**	**25,300**	**960,000**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300[b]**	**323**	**1830**
Residential SSL[a]				**3480**	**1740**	**66,300**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740[b]**	**15.3**	**380**
RE33-21-224259	33-61966	0.0–1.0	FILL	—	—	NA	0.00881 (J)	NA	NA	0.0405	0.0546	0.0669	0.0317	0.0247	NA
RE33-21-224260	33-61966	5.0–6.0	FILL	—	—	NA	—	NA	NA	—	0.00283 (J)	0.00354	—	—	NA
RE33-21-224261	33-61966	9.0–10.0	QBT3	—	—	NA	—	NA	NA	—	—	—	—	—	NA
RE33-21-224262	33-61967	0.0–1.0	FILL	0.0637	0.0109 (J)	NA	0.091	NA	NA	0.233	0.282	0.337	0.118	0.126	NA
RE33-21-224263	33-61967	5.0–6.0	FILL	—	—	NA	—	NA	NA	—	0.00248 (J)	0.00319 (J)	—	—	NA
RE33-21-224264	33-61967	9.0–10.0	QBT3	—	—	NA	0.00281 (J)	NA	NA	0.00704	0.00774	0.0095	0.00352	0.00352	NA
RE33-21-224283	33-61974	0.0–1.0	SOIL	0.0108 (J)	—	NA	0.0161 (J)	NA	NA	0.0609	0.0806	0.095	0.0358	0.0358	NA
RE33-21-224284	33-61974	5.0–6.0	SOIL	0.034	0.00596	NA	0.0599	NA	NA	0.112	0.134	0.142	0.0494	0.0561	NA
RE33-21-224285	33-61974	9.0–10.0	QBT3	—	—	NA	0.00213 (J)	NA	NA	0.00674	0.00816	0.00994	0.00319 (J)	0.0039	NA
RE33-21-224292	33-61977	0.0–1.0	SOIL	0.0358 (J+)	—	NA	0.0537 (J+)	NA	NA	0.175 (J+)	0.211 (J+)	0.261 (J+)	0.0788 (J+)	0.1 (J+)	NA
RE33-21-224293	33-61977	5.0–6.0	SOIL	0.266	0.0422	NA	0.418	NA	NA	0.681	0.798	0.76	0.503	0.301	NA
RE33-21-224294	33-61977	9.0–10.0	QBT2	—	—	NA	—	NA	NA	—	0.00329 (J)	0.00439	0.00293 (J)	—	NA
RE33-21-224295	33-61978	0.0–1.0	SOIL	0.044 (J+)	—	NA	0.0586 (J+)	NA	NA	0.212 (J+)	0.271 (J+)	0.337 (J+)	0.106 (J+)	0.132 (J+)	NA
RE33-21-224296	33-61978	5.0–6.0	SOIL	0.00249 (J)	—	NA	0.00284 (J)	NA	NA	0.00817 (J)	0.0103 (J)	0.0114 (J)	0.00533 (J)	0.00426 (J)	NA
RE33-21-224297	33-61978	9.0–10.0	QBT3	—	—	NA	—	NA	NA	0.00244 (J)	0.0021 (J)	0.00244 (J)	—	—	NA
RE33-21-224298	33-61979	0.0–1.0	SOIL	—	—	NA	—	NA	NA	0.0463 (J)	0.0606 (J)	0.0749 (J)	0.0321 (J)	0.0285 (J)	NA
RE33-21-224299	33-61979	5.0–6.0	SOIL	—	—	NA	—	NA	NA	0.00277 (J)	0.00312 (J)	0.00346 (J)	—	—	NA
RE33-21-224300	33-61979	9.0–10.0	QBT3	0.00309 (J)	—	NA	0.00481 (J)	NA	NA	0.0113 (J)	0.0127 (J)	0.0138 (J)	0.0055 (J)	0.0055 (J)	NA
RE33-21-224301	33-61980	0.0–1.0	SOIL	0.243 (J)	—	NA	0.36 (J)	NA	NA	0.559 (J)	0.658 (J)	0.693 (J)	0.268 (J)	0.271 (J)	NA
RE33-21-224303	33-61980	9.0–10.0	QBT3	—	—	NA	—	NA	NA	—	0.00293 (J)	0.00367 (J)	—	—	NA
RE33-21-224304	33-61981	0.0–1.0	SOIL	0.00273 (J)	—	NA	0.00376 (J)	NA	NA	0.0113 (J)	0.0126 (J)	0.0157 (J)	0.00512 (J)	0.00615 (J)	NA
RE33-21-224305	33-61981	5.0–6.0	SOIL	—	—	NA	—	NA	NA	—	0.0032 (J)	0.00356 (J)	—	—	NA
RE33-21-224306	33-61981	9.0–10.0	QBT3	—	—	NA	—	NA	NA	—	0.00213 (J)	0.00284 (J)	—	—	NA
RE33-21-224307	33-61982	0.0–1.0	SOIL	—	—	NA	—	NA	NA	0.0316 (J)	0.0351 (J)	0.0386 (J)	—	—	NA
RE33-21-224309	33-61982	9.0–10.0	QBT3	—	—	NA	—	NA	NA	—	0.00245 (J)	0.00315 (J)	—	—	NA

Table 4.6-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chloronaphthalene[2-]	Chrysene	Di-n-butylphthalate	Di-n-octylphthalate	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Hexanone[2-]	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[1-]	Methylnaphthalene[2-]
Construction Worker SSL[a]				**28,300**	**23,100**	**26,900**	**2700**[e]	**24**	**85**[e]	**10,000**	**10,000**	**340**[e]	**240**	**6060**	**1000**
Industrial SSL[a]				**104,000**	**3230**	**91,600**	**8200**[f]	**3.23**	**1200**[f]	**33,700**	**33,700**	**1300**[f]	**32.3**	**813**	**3370**
Residential SSL[a]				**6260**	**153**	**6160**	**630**[f]	**0.153**	**78**[f]	**2320**	**2320**	**200**[f]	**1.53**	**172**	**232**
0333-96-0652	33-01670	0–0.5	SOIL	—	—	—	—	—	—	—	—	NA	—	NA	—
RE33-20-190359	33-01670	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—
RE33-21-224203	33-01671	3.0–4.0	QBT3	—	0.00257 (J)	NA	NA	—	NA	0.00515	—	NA	0.00221 (J)	0.00184 (J)	0.00331 (J)
RE33-21-217935	33-01672	2.0–3.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217937	33-01672	4.0–5.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190363	33-01672	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—
RE33-21-224205	33-01672	6.0–7.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190364	33-01672	9.0–10.0	QBT3	—	0.0178 (J)	—	—	—	—	0.0245 (J)	—	—	0.0227 (J)	—	—
0333-96-0659	33-01675	0–0.5	SOIL	—	—	—	—	—	—	0.21 (J)	—	NA	—	NA	—
RE33-20-190365	33-01679	0.0–1.0	SOIL	—	0.0207 (J)	—	—	—	—	0.0396	—	—	0.023 (J)	—	—
0333-96-0673	33-01679	0.0–2.0	SOIL	—	0.072 (J)	—	—	—	—	0.11 (J)	—	NA	0.049 (J)	NA	—
0333-96-0674	33-01679	3.0–5.0	SOIL	—	—	—	—	—	—	—	—	0.006 (J)	—	NA	—
RE33-21-217940	33-01680	6.0–7.0	FILL	—	0.37 (J+)	NA	NA	0.105 (J+)	NA	0.663 (J+)	0.096 (J+)	NA	0.354 (J+)	—	—
RE33-21-224208	33-01680	6.0–7.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190370	33-01680	9.0–10.0	QBT3	—	—	—	—	—	—	0.018 (J)	—	—	—	—	—
RE33-21-224209	33-01680	9.0–10.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-224210	33-01681	6.59–7.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190373	33-01681	9.0–10.0	QBT3	—	0.69	—	0.0218 (J)	0.119	0.137 (J)	1.41	0.218	—	0.549	0.0625	0.0802
RE33-21-224211	33-01681	9.0–10.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190376	33-01682	9.0–10.0	QBT3	—	0.0161 (J)	—	—	—	—	0.0296 (J)	—	—	0.0179 (J)	—	—
RE33-21-217958	33-01684	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-224214	33-01684	6.0–7.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190379	33-01684	9.0–10.0	QBT3	—	—	0.0113 (J)	—	—	—	0.0124 (J)	—	—	—	—	—
RE33-20-190361	33-01685	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—

Table 4.6-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chloronaphthalene[2-]	Chrysene	Di-n-butylphthalate	Di-n-octylphthalate	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Hexanone[2-]	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[1-]	Methylnaphthalene[2-]
Construction Worker SSL[a]				**28,300**	**23,100**	**26,900**	**2700**[e]	**24**	**85**[e]	**10,000**	**10,000**	**340**[e]	**240**	**6060**	**1000**
Industrial SSL[a]				**104,000**	**3230**	**91,600**	**8200**[f]	**3.23**	**1200**[f]	**33,700**	**33,700**	**1300**[f]	**32.3**	**813**	**3370**
Residential SSL[a]				**6260**	**153**	**6160**	**630**[f]	**0.153**	**78**[f]	**2320**	**2320**	**200**[f]	**1.53**	**172**	**232**
RE33-20-190350	33-60676	0.0–1.0	SOIL	—	—	—	—	—	—	0.0178 (J)	—	—	—	—	—
RE33-20-190354	33-60676	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-190351	33-60677	0.0–0.1	SOIL	—	0.0125 (J)	—	—	—	—	0.0231 (J)	—	—	—	—	—
RE33-20-190355	33-60677	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-190356	33-60678	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-190353	33-60679	0.0–0.3	SOIL	—	—	—	—	—	—	0.0192 (J)	—	—	—	—	—
RE33-20-190357	33-60679	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-190380	33-60680	0.0–0.95	SOIL	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-190383	33-60683	0.0–1.0	SOIL	—	0.0339 (J)	—	—	—	—	0.0504	—	—	—	—	—
RE33-21-224217	33-61952	0.0–1.0	SOIL	—	0.118	NA	NA	0.0205	NA	0.193	0.00822	NA	0.0808	0.00616	0.00651
RE33-21-224218	33-61952	5.0–6.0	QBT3	—	0.0028 (J)	NA	NA	—	NA	0.00419	—	NA	0.00175 (J)	—	—
RE33-21-224219	33-61952	9.0–10.0	QBT3	—	0.00454	NA	NA	—	NA	0.00908	—	NA	0.00279 (J)	—	—
RE33-21-224220	33-61953	0.0–1.0	FILL	—	0.045	NA	NA	0.00913 (J)	NA	0.0784 (J)	0.00778 (J)	NA	0.0348	0.00304 (J)	0.00304 (J)
RE33-21-224221	33-61953	5.0–6.0	QBT3	—	0.0261	NA	NA	0.00652 (J)	NA	0.0374 (J)	0.00275 (J)	NA	0.0216	—	—
RE33-21-224222	33-61953	9.0–10.0	QBT3	—	—	NA	NA	—	NA	0.00237 (J)	—	NA	—	—	—
RE33-21-224223	33-61954	0.0–1.0	SOIL	—	0.282	NA	NA	0.0423 (J)	NA	0.473 (J)	0.0478 (J)	NA	0.157	0.0121	0.0128 (J)
RE33-21-224224	33-61954	5.0–6.0	QBT3	—	0.00308 (J)	NA	NA	—	NA	0.00547 (J)	—	NA	0.00205 (J)	—	—
RE33-21-224225	33-61954	9.0–10.0	QBT3	—	0.00306 (J)	NA	NA	—	NA	0.00442 (J)	—	NA	0.00204 (J)	—	—
RE33-21-224226	33-61955	0.0–1.0	SOIL	—	0.377	NA	NA	0.0625 (J)	NA	0.322 (J)	0.0196 (J)	NA	0.184	0.0125 (J)	0.0161 (J)
RE33-21-224227	33-61955	5.0–6.0	QBT3	—	0.0136	NA	NA	0.0021 (J)	NA	0.0203 (J)	—	NA	0.00699	—	—
RE33-21-224229	33-61956	0.0–1.0	SOIL	—	15.1	NA	NA	4.05 (J)	NA	22.8 (J)	1.14 (J)	NA	14.6	0.342	0.428 (J)
RE33-21-224230	33-61956	5.0–6.0	QBT3	—	0.0145	NA	NA	0.00425 (J)	NA	0.0227 (J)	—	NA	0.0156	—	—
RE33-21-224231	33-61956	9.0–10.0	QBT3	—	0.0115	NA	NA	0.00209 (J)	NA	0.0188 (J)	—	NA	0.00663	—	—
RE33-21-224232	33-61957	0.0–1.0	SOIL	—	1.81	NA	NA	0.281 (J)	NA	2.91 (J)	0.27 (J)	NA	0.998	0.0688	0.0762 (J)
RE33-21-224233	33-61957	5.0–6.0	QBT3	—	0.11	NA	NA	0.0166 (J)	NA	0.208 (J)	0.0283 (J)	NA	0.0604	0.00813	0.0106 (J)
RE33-21-224234	33-61957	9.0–10.0	QBT3	—	0.18	NA	NA	0.0282 (J)	NA	0.378 (J)	0.0866 (J)	NA	0.0947	0.0229	0.0394 (J)

Table 4.6-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chloronaphthalene[2-]	Chrysene	Di-n-butylphthalate	Di-n-octylphthalate	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Hexanone[2-]	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[1-]	Methylnaphthalene[2-]
Construction Worker SSL[a]				**28,300**	**23,100**	**26,900**	**2700**[e]	**24**	**85**[e]	**10,000**	**10,000**	**340**[e]	**240**	**6060**	**1000**
Industrial SSL[a]				**104,000**	**3230**	**91,600**	**8200**[f]	**3.23**	**1200**[f]	**33,700**	**33,700**	**1300**[f]	**32.3**	**813**	**3370**
Residential SSL[a]				**6260**	**153**	**6160**	**630**[f]	**0.153**	**78**[f]	**2320**	**2320**	**200**[f]	**1.53**	**172**	**232**
RE33-21-224235	33-61958	0.0–1.0	SOIL	—	10.4	NA	NA	2.13	NA	22.1	3.82	NA	7.93	1.15	1.62
RE33-21-224236	33-61958	5.0–6.0	QBT3	—	0.222	NA	NA	0.039	NA	0.467	0.0673	NA	0.151	0.0186	0.0233
RE33-21-224237	33-61958	9.0–10.0	QBT3	—	0.0282	NA	NA	0.005	NA	0.0536	0.00965	NA	0.0182	0.00214 (J)	0.00286 (J)
RE33-21-224238	33-61959	0.0–1.0	SOIL	—	0.337	NA	NA	0.0585	NA	0.498	0.0372	NA	0.225	0.00886 (J)	—
RE33-21-224239	33-61959	5.0–6.0	QBT3	—	0.114	NA	NA	0.02	NA	0.166	0.0189	NA	0.0781	0.00357	0.00321 (J)
RE33-21-224240	33-61959	9.0–10.0	QBT3	—	0.022	NA	NA	0.00279 (J)	NA	0.0422	0.00454	NA	0.0112	—	—
RE33-21-224241	33-61960	0.0–1.0	SOIL	—	0.358	NA	NA	0.0656	NA	0.746	0.126	NA	0.245	0.0487	0.0723
RE33-21-224242	33-61960	5.0–6.0	QBT3	—	0.00554	NA	NA	—	NA	0.0114	—	NA	0.00381	—	—
RE33-21-224243	33-61960	9.0–10.0	QBT3	—	0.00495	NA	NA	—	NA	0.00779	—	NA	—	—	—
RE33-21-224244	33-61961	0.0–1.0	SOIL	—	0.136 (J)	NA	NA	0.0159 (J)	NA	0.182 (J)	0.0177	NA	0.0549 (J)	—	—
RE33-21-224245	33-61961	5.0–6.0	QBT3	—	0.0201	NA	NA	0.0215	NA	0.0178	—	NA	0.0201	—	—
RE33-21-224246	33-61961	9.0–10.0	QBT3	—	0.0112 (J)	NA	NA	0.00908 (J)	NA	0.00663 (J)	—	NA	0.00908 (J)	—	—
RE33-21-224247	33-61962	0.0–1.0	SOIL	—	0.0338	NA	NA	—	NA	0.0676	—	NA	0.0213	—	—
RE33-21-224248	33-61962	5.0–6.0	SOIL	—	—	NA	NA	—	NA	0.00217 (J)	—	NA	—	—	—
RE33-21-224249	33-61962	9.0–10.0	QBT3	—	—	NA	NA	—	NA	0.00212 (J)	—	NA	—	—	—
RE33-21-224250	33-61963	0.0–1.0	SOIL	—	0.636	NA	NA	0.11	NA	1.27	0.232	NA	0.404	0.0797	0.101
RE33-21-224251	33-61963	5.0–6.0	QBT3	—	0.00642	NA	NA	—	NA	0.00999	—	NA	0.00357	—	—
RE33-21-224252	33-61963	9.0–10.0	QBT3	—	0.024	NA	NA	0.00394	NA	0.0487	0.01	NA	0.015	0.00358	0.0043
RE33-21-224253	33-61964	0.0–1.0	SOIL	—	0.157	NA	NA	0.0258	NA	0.312	0.0534	NA	0.0999	0.0207	0.0258
RE33-21-224254	33-61964	5.0–6.0	QBT3	—	0.00719	NA	NA	—	NA	0.0123	—	NA	—	—	—
RE33-21-224255	33-61964	9.0–10.0	QBT3	—	0.00837	NA	NA	—	NA	0.0136	—	NA	0.00523	—	—
RE33-21-224256	33-61965	0.0–1.0	FILL	—	0.0148	NA	NA	0.00275 (J)	NA	0.0292	0.00172 (J)	NA	0.011	—	—
RE33-21-224257	33-61965	5.0–6.0	FILL	—	—	NA	NA	—	NA	0.0032 (J)	—	NA	—	—	—
RE33-21-224258	33-61965	9.0–10.0	QBT3	—	0.00211 (J)	NA	NA	—	NA	0.00422	—	NA	—	—	—
RE33-21-224259	33-61966	0.0–1.0	FILL	—	0.0511	NA	NA	—	NA	0.0934	—	NA	0.0352	—	—
RE33-21-224260	33-61966	5.0–6.0	FILL	—	0.00283 (J)	NA	NA	—	NA	0.00496	—	NA	0.00177 (J)	—	—

Table 4.6-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chloronaphthalene[2-]	Chrysene	Di-n-butylphthalate	Di-n-octylphthalate	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Hexanone[2-]	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[1-]	Methylnaphthalene[2-]
Construction Worker SSL[a]				**28,300**	**23,100**	**26,900**	**2700**[e]	**24**	**85**[e]	**10,000**	**10,000**	**340**[e]	**240**	**6060**	**1000**
Industrial SSL[a]				**104,000**	**3230**	**91,600**	**8200**[f]	**3.23**	**1200**[f]	**33,700**	**33,700**	**1300**[f]	**32.3**	**813**	**3370**
Residential SSL[a]				**6260**	**153**	**6160**	**630**[f]	**0.153**	**78**[f]	**2320**	**2320**	**200**[f]	**1.53**	**172**	**232**
RE33-21-224261	33-61966	9.0–10.0	QBT3	—	—	NA	NA	—	NA	0.00206 (J)	—	NA	—	—	—
RE33-21-224262	33-61967	0.0–1.0	FILL	—	0.273	NA	NA	0.0364	NA	0.568	0.0528	NA	0.146	0.0182	0.02
RE33-21-224263	33-61967	5.0–6.0	FILL	—	0.00248 (J)	NA	NA	—	NA	0.00496	—	NA	—	—	—
RE33-21-224264	33-61967	9.0–10.0	QBT3	—	0.00774	NA	NA	—	NA	0.0158	—	NA	0.00422	—	—
RE33-21-224283	33-61974	0.0–1.0	SOIL	—	0.0717	NA	NA	0.0108 (J)	NA	0.133	0.0108 (J)	NA	0.043	—	—
RE33-21-224284	33-61974	5.0–6.0	SOIL	—	0.115	NA	NA	0.0165	NA	0.235	0.0445	NA	0.062	0.014	0.0154
RE33-21-224285	33-61974	9.0–10.0	QBT3	—	0.00745	NA	NA	—	NA	0.0142	—	NA	0.00426	—	—
RE33-21-224292	33-61977	0.0–1.0	SOIL	—	0.2 (J+)	NA	NA	0.0251 (J+)	NA	0.415 (J+)	0.0322 (J+)	NA	0.1 (J+)	—	—
RE33-21-224293	33-61977	5.0–6.0	SOIL	—	0.672	NA	NA	0.138	NA	1.45	0.36	NA	0.547	0.141	0.216
RE33-21-224294	33-61977	9.0–10.0	QBT2	—	0.00329 (J)	NA	NA	—	NA	0.00622	—	NA	0.00293 (J)	—	—
RE33-21-224295	33-61978	0.0–1.0	SOIL	—	0.249 (J+)	NA	NA	0.033 (J+)	NA	0.502 (J+)	0.033 (J+)	NA	0.132 (J+)	—	—
RE33-21-224296	33-61978	5.0–6.0	SOIL	—	0.00959 (J)	NA	NA	—	NA	0.0185 (J)	0.00249 (J)	NA	0.00604 (J)	—	—
RE33-21-224297	33-61978	9.0–10.0	QBT3	—	0.00244 (J)	NA	NA	—	NA	0.00419 (J)	—	NA	—	—	—
RE33-21-224298	33-61979	0.0–1.0	SOIL	—	0.0606 (J)	NA	NA	—	NA	0.107 (J)	—	NA	0.0357 (J)	—	—
RE33-21-224299	33-61979	5.0–6.0	SOIL	—	0.00277 (J)	NA	NA	—	NA	0.00589 (J)	—	NA	—	—	—
RE33-21-224300	33-61979	9.0–10.0	QBT3	—	0.0113 (J)	NA	NA	—	NA	0.0244 (J)	0.00206 (J)	NA	0.00653 (J)	—	—
RE33-21-224301	33-61980	0.0–1.0	SOIL	—	0.573 (J)	NA	NA	0.0823 (J+)	NA	1.22 (J)	0.264 (J)	NA	0.326 (J)	0.106 (J+)	0.158 (J+)
RE33-21-224303	33-61980	9.0–10.0	QBT3	—	0.00293 (J)	NA	NA	—	NA	0.0055 (J)	—	NA	—	—	—
RE33-21-224304	33-61981	0.0–1.0	SOIL	0.0041	0.0126 (J)	NA	NA	—	NA	0.0277 (J)	0.00307 (J)	NA	0.00615 (J)	—	—
RE33-21-224305	33-61981	5.0–6.0	SOIL	—	0.00285 (J)	NA	NA	—	NA	0.00569 (J)	—	NA	—	—	—
RE33-21-224306	33-61981	9.0–10.0	QBT3	—	—	NA	NA	—	NA	0.00498 (J)	—	NA	—	—	—
RE33-21-224307	33-61982	0.0–1.0	SOIL	—	—	NA	NA	—	NA	0.0703 (J)	—	NA	—	—	—
RE33-21-224309	33-61982	9.0–10.0	QBT3	—	0.00245 (J)	NA	NA	—	NA	0.00595 (J)	—	NA	—	—	—

Table 4.6-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Naphthalene	Phenanthrene	Pyrene	Pyridine	Styrene	Tetrachloroethene	Toluene	Trichloroethene	Xylene (Total)
Construction Worker SSL[a]				**159**	**7530**	**7530**	**85**	**10,200**	**120**	**14,000**	**6.90**	**798**
Industrial SSL[a]				**241**	**25,300**	**25,300**	**1200**	**51,300**	**629**	**61,300**	**36.5**	**4280**
Residential SSL[a]				**49.7**	**1740**	**1740**	**78**	**7260**	**111**	**5230**	**6.77**	**871**
0333-96-0652	33-01670	0–0.5	SOIL	—	—	—	1.6	NA	NA	NA	NA	NA
RE33-20-190359	33-01670	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	NA
RE33-21-224203	33-01671	3.0–4.0	QBT3	0.00257 (J)	0.00515	0.00588	NA	NA	NA	NA	NA	NA
RE33-21-217935	33-01672	2.0–3.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217937	33-01672	4.0–5.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190363	33-01672	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	NA
RE33-21-224205	33-01672	6.0–7.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190364	33-01672	9.0–10.0	QBT3	—	0.0163 (J)	0.0195 (J)	—	—	—	—	—	NA
0333-96-0659	33-01675	0–0.5	SOIL	—	—	0.24 (J)	—	NA	NA	NA	NA	NA
RE33-20-190365	33-01679	0.0–1.0	SOIL	—	0.026 (J)	0.0362 (J)	—	—	—	—	—	NA
0333-96-0673	33-01679	0.0–2.0	SOIL	—	0.1 (J)	0.1 (J)	NA	NA	NA	NA	NA	NA
0333-96-0674	33-01679	3.0–5.0	SOIL	—	—	—	NA	—	0.002 (J)	0.001 (J)	0.002 (J)	0.002 (J)
RE33-21-217940	33-01680	6.0–7.0	FILL	0.0925 (J+)	0.601 (J-)	0.688 (J+)	NA	NA	NA	NA	NA	NA
RE33-21-224208	33-01680	6.0–7.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190370	33-01680	9.0–10.0	QBT3	0.000487 (J-)	0.0213 (J)	0.0147 (J)	—	—	—	—	—	NA
RE33-21-224209	33-01680	9.0–10.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-224210	33-01681	6.59–7.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190373	33-01681	9.0–10.0	QBT3	0.235	1.36	1.43	—	0.000683 (J)	—	—	—	NA
RE33-21-224211	33-01681	9.0–10.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190376	33-01682	9.0–10.0	QBT3	—	0.0252 (J)	0.0274 (J)	—	—	—	—	—	NA
RE33-21-217958	33-01684	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-224214	33-01684	6.0–7.0	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-20-190379	33-01684	9.0–10.0	QBT3	0.00368	0.0156 (J)	—	—	—	—	—	—	NA
RE33-20-190361	33-01685	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	NA

Table 4.6-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Naphthalene	Phenanthrene	Pyrene	Pyridine	Styrene	Tetrachloroethene	Toluene	Trichloroethene	Xylene (Total)
Construction Worker SSL[a]				**159**	**7530**	**7530**	**85**	**10,200**	**120**	**14,000**	**6.90**	**798**
Industrial SSL[a]				**241**	**25,300**	**25,300**	**1200**	**51,300**	**629**	**61,300**	**36.5**	**4280**
Residential SSL[a]				**49.7**	**1740**	**1740**	**78**	**7260**	**111**	**5230**	**6.77**	**871**
RE33-20-190350	33-60676	0.0–1.0	SOIL	—	—	0.0128 (J)	—	—	—	—	—	NA
RE33-20-190354	33-60676	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	NA
RE33-20-190351	33-60677	0.0–0.1	SOIL	—	—	0.0197 (J)	—	—	—	—	—	NA
RE33-20-190355	33-60677	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	NA
RE33-20-190356	33-60678	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	NA
RE33-20-190353	33-60679	0.0–0.3	SOIL	—	—	0.0153 (J)	—	—	—	—	—	NA
RE33-20-190357	33-60679	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	NA
RE33-20-190380	33-60680	0.0–0.95	SOIL	—	—	—	—	—	—	0.000901 (J)	—	NA
RE33-20-190383	33-60683	0.0–1.0	SOIL	—	0.031 (J)	0.0431	—	—	—	—	—	NA
RE33-21-224217	33-61952	0.0–1.0	SOIL	0.00514	0.088	0.175	NA	NA	NA	NA	NA	NA
RE33-21-224218	33-61952	5.0–6.0	QBT3	—	0.00245 (J)	0.00349	NA	NA	NA	NA	NA	NA
RE33-21-224219	33-61952	9.0–10.0	QBT3	—	0.00594	0.00803	NA	NA	NA	NA	NA	NA
RE33-21-224220	33-61953	0.0–1.0	FILL	0.00609 (J)	0.0571 (J)	0.0666 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224221	33-61953	5.0–6.0	QBT3	0.00309 (J)	0.0254 (J)	0.0316 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224222	33-61953	9.0–10.0	QBT3	—	0.00169 (J)	0.00203 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224223	33-61954	0.0–1.0	SOIL	0.0315 (J)	0.339 (J)	0.435 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224224	33-61954	5.0–6.0	QBT3	—	0.0041 (J)	0.00513 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224225	33-61954	9.0–10.0	QBT3	—	0.00272 (J)	0.00408 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224226	33-61955	0.0–1.0	SOIL	0.0143 (J)	0.189 (J)	0.354 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224227	33-61955	5.0–6.0	QBT3	—	0.0143 (J)	0.0182 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224229	33-61956	0.0–1.0	SOIL	0.941 (J)	16.9 (J)	20 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224230	33-61956	5.0–6.0	QBT3	—	0.0149 (J)	0.0198 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224231	33-61956	9.0–10.0	QBT3	—	0.0108 (J)	0.0168 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224232	33-61957	0.0–1.0	SOIL	0.171 (J)	2.02 (J)	2.73 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224233	33-61957	5.0–6.0	QBT3	0.0269 (J)	0.177 (J)	0.185 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224234	33-61957	9.0–10.0	QBT3	0.149 (J)	0.406 (J)	0.335 (J)	NA	NA	NA	NA	NA	NA

Table 4.6-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Naphthalene	Phenanthrene	Pyrene	Pyridine	Styrene	Tetrachloroethene	Toluene	Trichloroethene	Xylene (Total)
Construction Worker SSL[a]				**159**	**7530**	**7530**	**85**	**10,200**	**120**	**14,000**	**6.90**	**798**
Industrial SSL[a]				**241**	**25,300**	**25,300**	**1200**	**51,300**	**629**	**61,300**	**36.5**	**4280**
Residential SSL[a]				**49.7**	**1740**	**1740**	**78**	**7260**	**111**	**5230**	**6.77**	**871**
RE33-21-224235	33-61958	0.0–1.0	SOIL	3.74	22.9	19.1	NA	NA	NA	NA	NA	NA
RE33-21-224236	33-61958	5.0–6.0	QBT3	0.0509	0.418	0.388	NA	NA	NA	NA	NA	NA
RE33-21-224237	33-61958	9.0–10.0	QBT3	0.00929	0.055	0.0504	NA	NA	NA	NA	NA	NA
RE33-21-224238	33-61959	0.0–1.0	SOIL	0.0177	0.317	0.509	NA	NA	NA	NA	NA	NA
RE33-21-224239	33-61959	5.0–6.0	QBT3	0.00428	0.154	0.173	NA	NA	NA	NA	NA	NA
RE33-21-224240	33-61959	9.0–10.0	QBT3	—	0.0381	0.0436	NA	NA	NA	NA	NA	NA
RE33-21-224241	33-61960	0.0–1.0	SOIL	0.254	0.662	0.629	NA	NA	NA	NA	NA	NA
RE33-21-224242	33-61960	5.0–6.0	QBT3	—	0.00762	0.0097	NA	NA	NA	NA	NA	NA
RE33-21-224243	33-61960	9.0–10.0	QBT3	—	0.00495	0.00814	NA	NA	NA	NA	NA	NA
RE33-21-224244	33-61961	0.0–1.0	SOIL	0.0142 (J)	0.119 (J)	0.188 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224245	33-61961	5.0–6.0	QBT3	—	0.00444	0.0164	NA	NA	NA	NA	NA	NA
RE33-21-224246	33-61961	9.0–10.0	QBT3	—	0.00244 (J)	0.00838 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224247	33-61962	0.0–1.0	SOIL	—	0.0445	0.0587	NA	NA	NA	NA	NA	NA
RE33-21-224248	33-61962	5.0–6.0	SOIL	—	—	0.00217 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224249	33-61962	9.0–10.0	QBT3	—	0.00177 (J)	0.00177 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224250	33-61963	0.0–1.0	SOIL	0.255	1.27	1.12	NA	NA	NA	NA	NA	NA
RE33-21-224251	33-61963	5.0–6.0	QBT3	—	0.00642	0.00892	NA	NA	NA	NA	NA	NA
RE33-21-224252	33-61963	9.0–10.0	QBT3	0.0104	0.0509	0.043	NA	NA	NA	NA	NA	NA
RE33-21-224253	33-61964	0.0–1.0	SOIL	0.0724	0.301	0.277	NA	NA	NA	NA	NA	NA
RE33-21-224254	33-61964	5.0–6.0	QBT3	—	0.0089	0.0109	NA	NA	NA	NA	NA	NA
RE33-21-224255	33-61964	9.0–10.0	QBT3	—	0.00803	0.0126	NA	NA	NA	NA	NA	NA
RE33-21-224256	33-61965	0.0–1.0	FILL	—	0.0161	0.0254	NA	NA	NA	NA	NA	NA
RE33-21-224257	33-61965	5.0–6.0	FILL	—	0.00249 (J)	0.00284 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224258	33-61965	9.0–10.0	QBT3	—	0.00281 (J)	0.00387	NA	NA	NA	NA	NA	NA
RE33-21-224259	33-61966	0.0–1.0	FILL	—	0.0528	0.0881	NA	NA	NA	NA	NA	NA
RE33-21-224260	33-61966	5.0–6.0	FILL	—	0.00354	0.00425	NA	NA	NA	NA	NA	NA

Table 4.6-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Naphthalene	Phenanthrene	Pyrene	Pyridine	Styrene	Tetrachloroethene	Toluene	Trichloroethene	Xylene (Total)
Construction Worker SSL[a]				**159**	**7530**	**7530**	**85**	**10,200**	**120**	**14,000**	**6.90**	**798**
Industrial SSL[a]				**241**	**25,300**	**25,300**	**1200**	**51,300**	**629**	**61,300**	**36.5**	**4280**
Residential SSL[a]				**49.7**	**1740**	**1740**	**78**	**7260**	**111**	**5230**	**6.77**	**871**
RE33-21-224261	33-61966	9.0–10.0	QBT3	—	—	0.00171 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224262	33-61967	0.0–1.0	FILL	0.051	0.422	0.499	NA	NA	NA	NA	NA	NA
RE33-21-224263	33-61967	5.0–6.0	FILL	—	0.00354	0.00425	NA	NA	NA	NA	NA	NA
RE33-21-224264	33-61967	9.0–10.0	QBT3	—	0.0106	0.0141	NA	NA	NA	NA	NA	NA
RE33-21-224283	33-61974	0.0–1.0	SOIL	—	0.0735	0.124	NA	NA	NA	NA	NA	NA
RE33-21-224284	33-61974	5.0–6.0	SOIL	0.0357	0.228	0.21	NA	NA	NA	NA	NA	NA
RE33-21-224285	33-61974	9.0–10.0	QBT3	—	0.00852	0.0124	NA	NA	NA	NA	NA	NA
RE33-21-224292	33-61977	0.0–1.0	SOIL	—	0.258 (J+)	0.365 (J+)	NA	NA	NA	NA	NA	NA
RE33-21-224293	33-61977	5.0–6.0	SOIL	0.721	1.66	1.27	NA	NA	NA	NA	NA	NA
RE33-21-224294	33-61977	9.0–10.0	QBT2	—	0.00476	0.00549	NA	NA	NA	NA	NA	NA
RE33-21-224295	33-61978	0.0–1.0	SOIL	—	0.304 (J+)	0.458 (J+)	NA	NA	NA	NA	NA	NA
RE33-21-224296	33-61978	5.0–6.0	SOIL	0.00284 (J)	0.0149 (J)	0.0163 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224297	33-61978	9.0–10.0	QBT3	—	0.00244 (J)	0.00384 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224298	33-61979	0.0–1.0	SOIL	0.0392 (J)	0.0642 (J)	0.0963 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224299	33-61979	5.0–6.0	SOIL	—	0.00485 (J)	0.00519 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224300	33-61979	9.0–10.0	QBT3	—	0.0168 (J)	0.022 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224301	33-61980	0.0–1.0	SOIL	0.497 (J)	1.26 (J)	1.06 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224303	33-61980	9.0–10.0	QBT3	—	0.0033 (J)	0.00477 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224304	33-61981	0.0–1.0	SOIL	0.00205 (J)	0.0188 (J)	0.0239 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224305	33-61981	5.0–6.0	SOIL	—	0.00427 (J)	0.00534 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224306	33-61981	9.0–10.0	QBT3	—	0.0032 (J)	0.00426 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224307	33-61982	0.0–1.0	SOIL	0.0386 (J)	0.0492 (J)	0.0597 (J)	NA	NA	NA	NA	NA	NA
RE33-21-224309	33-61982	9.0–10.0	QBT3	—	0.00455 (J)	0.00525 (J)	NA	NA	NA	NA	NA	NA

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED (2022, 702484) unless otherwise noted.

[b] Pyrene used as a surrogate based on structural similarity.

[c] — = Not detected.

[d] NA = Not analyzed.

[e] Construction worker SSLs calculated using the equations outlined in NMED (2022, 702484), incorporating toxicity and chemical-specific parameters from EPA regional screening level (RSL) tables (http://www.epa.gov/risk/risk-based-screening-table-generic-tables).

[f] SSLs from EPA RSL tables (http://www.epa.gov/risk/risk-based-screening-table-generic-tables).

Table 4.6-3
Proposed Sampling and Analysis at SWMU 33-008(c)

Sampling Objective	Location Number	Location Description	Depth[a] (ft)	Copper (SW-846:6010D[b])	Lead (SW-846:6010D[b])	Manganese (SW-846:6010D[b])	Mercury (SW-846:7471B[b])	PAHs (SW-846:8270-SIM_PAHS)
Define lateral extent of copper and lead north and east of location 33-61953 and bound planned excavation	8c-1 through 8c-2 8c-25 through 8c-26	One 5-ft and 10-ft step-out from 33-61953 Step-outs to bound north west corner of excavation	0.0–1.0 4.0–5.0 9.0–10.0	X[c]	X	X	—[d]	—
Define lateral extent of copper and mercury north and east of location 33-61954 and bound planned excavation	8c-3 through 8c-4	One 5-ft and 10-ft step-out from 33-61954	0.0–1.0 4.0–5.0 9.0–10.0	X	—	X	X	—
Bound planned excavation boundary east of locations 33-61953 and 33-61954	8c-5 through 8c-6	One 5-ft and 10-ft step-out from 33-61955	0.0–1.0 4.0–5.0 9.0–10.0	X	X	X	X	—
Define lateral extent of PAHs at locations 33-61956, 33-61957, and 33-61958 and bound planned excavation for several chemicals	8c-7 through 8c-13	One 5-ft and 10-ft step-out from locations 33-61956, 33-61957, and 33-61958. One step-out south of 33-61958	0.0–1.0 4.0–5.0 9.0–10.0	X	X	X	X	X
Define lateral extent of copper at location 33-61971 and bound planned excavation	8c-14 through 8c-18	Five step-outs from location 33-61971	0.0–1.0 4.0–5.0 9.0–10.0	X	—	X	—	—
Define vertical extent of lead at location 33-61962	33-61962	Location 33-61962	10.0–11.0 12.0–13.0	—	X	X	—	—
Define lateral extent of lead south of location 33-61962	8c-19 through 8c-20	One 5-ft and 10-ft step-out from 33-61962	0.0–1.0 4.0–5.0 9.0–10.0 10.0–11.0 12.0–13.0	—	X	X	—	—
Determine lateral extent of copper at location 33-61975 and bound planned excavation	8c-21 through 8c-23	Three 5-ft step-outs from 33-61975	0.0–1.0 4.0–5.0 9.0–10.0	X	—	X	—	—
Confirmation sampling beneath excavation around location 33-61975	8c-24	Beneath excavation around location 33-61975	0.0–1.0 beneath excavation 2.0–3.0 beneath excavation	X	—	X	—	—
Additional confirmation samples beneath planned excavations as required	To be determined	To be determined	0.0–1.0 beneath excavation 2.0–3.0 beneath excavation	To be determined	To be determined	To be determined	To be determined	To be determined

[a] Depths are below ground surface, unless specified otherwise.

[b] Most recent promulgated, certified, and appropriate method will be used during field investigations.

[c] X = Analysis will be performed.

[d] — = Analysis will not be performed.

Table 4.7-1
Organic Chemicals Detected at SWMU 33-011(a)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acetone	Anthracene	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Carbazole
Construction Worker SSL[a]				**15,100**	**242,000**	**75,300**	**85.3**	**240**	**15.0**	**240**	**7530[b]**	**2310**	**1,080,000[c]**	**5380**	**85[c,d]**
Industrial SSL[a]				**50,500**	**960,000**	**253,000**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300[b]**	**323**	**3,300,000[e]**	**1830**	**1200[d,e]**
Residential SSL[a]				**3480**	**66,300**	**17,400**	**2.43**	**1.53**	**1.12**	**1.53**	**1740[b]**	**15.3**	**250,000[e]**	**380**	**78[d,e]**
RE33-20-190135	33-01076	2.0–3.0	QBT3	—[f]	—	—	NA[g]	—	—	—	—	—	—	0.0135 (J)	—
RE33-20-190149	33-01076	5.0–6.0	QBT3	—	—	—	NA	—	—	—	—	—	—	—	—
RE33-20-190136	33-01077	2.0–3.0	QBT3	—	—	—	NA	—	—	—	—	—	—	—	—
RE33-20-190150	33-01077	5.0–6.0	QBT3	—	—	—	NA	—	—	—	—	—	—	—	—
RE33-20-190137	33-01078	2.0–3.0	QBT3	—	—	—	NA	—	—	—	—	—	—	—	—
RE33-21-218093	33-61001	0.0–1.0	FILL	—	—	—	—	0.0632 (J)	0.0529 (J)	0.0581 (J)	—	—	—	—	—
RE33-21-218094	33-61001	2.0–3.0	FILL	0.113 (J)	—	0.116 (J)	NA	0.352 (J)	0.436	0.479	0.269 (J)	0.207 (J)	—	—	—
RE33-21-218095	33-61001	5.0–6.0	QBT3	—	—	0.0194 (J)	NA	0.0485	0.0506	0.0517	0.0337 (J)	0.0233 (J)	0.436 (J)	0.917 (J)	0.0133 (J)
RE33-21-218096	33-61002	0.0–1.0	FILL	—	—	—	NA	—	—	—	—	—	—	0.0962	—
RE33-21-218099	33-61003	0.0–1.0	FILL	0.0732 (J)	—	0.0971 (J)	NA	0.252	0.312	0.325	0.194	0.124 (J)	—	—	0.0613 (J)
RE33-21-218100	33-61003	2.0–3.0	FILL	0.808	—	1.11	NA	1.77	2.15	2.21	1.25	0.842	—	—	0.563
RE33-21-221915	33-61003	2.0–3.0	FILL	NA	NA	NA	0.0136 (J)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-218101	33-61003	5.0–6.0	QBT3	—	—	—	—	0.02 (J)	0.0219 (J)	0.0222 (J)	0.0141 (J)	—	—	—	—
RE33-21-218104	33-61004	5.0–6.0	QBT3	—	—	—	NA	—	—	—	—	—	—	—	—
RE33-21-218106	33-61005	2.0–3.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—
RE33-21-218108	33-61006	0.0–1.0	FILL	0.107 (J)	—	0.121 (J-)	NA	0.336 (J-)	0.343 (J-)	0.364 (J-)	0.215 (J-)	0.152 (J)	—	—	0.0787 (J)
RE33-21-221920	33-61006	0.0–1.0	FILL	NA	NA	NA	0.00157 (J)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-218110	33-61006	5.0–6.0	QBT3	—	—	—	NA	—	—	—	—	—	—	0.0136 (J)	—
RE33-21-218111	33-61007	0.0–1.0	FILL	—	—	—	NA	0.0781 (J-)	0.0712 (J-)	0.0816 (J-)	0.0573 (J-)	—	—	—	—
RE33-21-221923	33-61007	0.0–1.0	FILL	NA	NA	NA	0.00213 (J)	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-218114	33-61008	0.0–0.6	FILL	—	—	—	NA	0.0902 (J-)	0.0902 (J-)	0.107 (J-)	0.0589 (J-)	—	—	—	—
RE33-21-218116	33-61008	5.0–6.0	QBT3	—	—	—	NA	—	—	—	—	—	—	0.039	—
RE33-21-218117	33-61009	0.0–1.0	FILL	1.18 (J)	—	1.81 (J)	NA	3.1 (J)	3.7 (J)	3.61 (J)	1.93 (J)	1.5 (J)	—	—	0.926 (J)
RE33-21-218118	33-61009	2.0–3.0	QBT3	—	—	0.0127 (J-)	—	0.0305 (J)	0.0332 (J)	0.0332 (J)	0.0236 (J)	0.0154 (J)	—	—	—

Table 4.7-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acetone	Anthracene	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Carbazole
Construction Worker SSL[a]				**15,100**	**242,000**	**75,300**	**85.3**	**240**	**15.0**	**240**	**7530[b]**	**2310**	**1,080,000[c]**	**5380**	**85[c,d]**
Industrial SSL[a]				**50,500**	**960,000**	**253,000**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300[b]**	**323**	**3,300,000[e]**	**1830**	**1200[d,e]**
Residential SSL[a]				**3480**	**66,300**	**17,400**	**2.43**	**1.53**	**1.12**	**1.53**	**1740[b]**	**15.3**	**250,000[e]**	**380**	**78[d,e]**
RE33-21-218119	33-61009	5.0–6.0	QBT3	0.018 (J)	—	0.0259 (J-)	NA	0.0546 (J)	0.0556 (J)	0.0563 (J)	0.0373 (J)	0.0235 (J)	—	—	0.0142 (J)
RE33-21-218120	33-61010	0.0–1.0	FILL	0.0135 (J)	—	0.0196 (J)	NA	0.0577 (J)	0.068 (J)	0.0801 (J)	0.0402 (J)	0.0313 (J)	0.435 (J)	—	0.0128 (J)
RE33-21-221933	33-61063	0.0–0.5	SOIL	0.0196 (J)	—	0.021 (J)	0.00625	0.074	0.106	0.116	0.058	0.0453	—	—	—
RE33-21-221935	33-61063	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—
RE33-21-221936	33-61064	0.0–0.8	SOIL	—	—	—	—	0.293	0.406	0.465	0.221	0.187 (J)	—	—	—
RE33-21-221937	33-61064	2.0–3.0	QBT3	0.0213 (J)	—	0.0385	—	0.0826	0.103	0.108	0.0475	0.0441	—	0.011 (J)	0.0193 (J)
RE33-21-221938	33-61064	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—
RE33-21-221939	33-61065	0.0–0.8	FILL	0.885	—	1.23	—	2.08	2.57	2.76	1.19	1.13	—	—	0.526
RE33-21-221940	33-61065	2.0–3.0	QBT3	0.0184 (J)	—	0.0406	—	0.0868	0.11	0.111	0.0465	0.0441	—	—	0.0205 (J)
RE33-21-221942	33-61066	0.0–1.0	FILL	0.159 (J)	—	0.252	—	0.602	0.763	0.812	0.362	0.326	—	—	0.143 (J)
RE33-21-221943	33-61066	2.0–3.0	FILL	0.0241 (J)	—	0.0194 (J)	—	0.0522	0.064	0.0723	0.0306 (J)	0.0277 (J)	—	—	0.0126 (J)
RE33-21-221944	33-61066	5.0–6.0	FILL	—	0.00463 (J)	—	—	0.0845 (J)	0.0812 (J)	0.0862 (J)	—	—	—	—	—

Table 4.7-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chloroform	Chrysene	Di-n-butylphthalate	Di-n-octylphthalate	Dibenz(a,h)anthracene	Dibenzofuran	Diethylphthalate	Fluoranthene	Fluorene	Hexanone[2-]	Indeno(1,2,3-cd)pyrene	Isophorone
Construction Worker SSL[a]				**134**	**23,100**	**26,900**	**2700[c]**	**24**	**85[c]**	**215,000**	**10,000**	**10,000**	**340[c]**	**240**	**53,700**
Industrial SSL[a]				**28.7**	**3230**	**91,600**	**8200[e]**	**3.23**	**1200[e]**	**733,000**	**33,700**	**33,700**	**1300[e]**	**32.3**	**27,000**
Residential SSL[a]				**5.9**	**153**	**6160**	**630[e]**	**0.153**	**78[e]**	**49,300**	**2320**	**2320**	**200[e]**	**1.53**	**5610**
RE33-20-190135	33-01076	2.0–3.0	QBT3	—	—	0.0323 (J)	—	—	—	0.017 (J)	—	—	—	—	0.236 (J)
RE33-20-190149	33-01076	5.0–6.0	QBT3	—	—	0.0393	—	—	—	0.0223 (J)	—	—	—	—	0.274 (J)
RE33-20-190136	33-01077	2.0–3.0	QBT3	—	—	0.0824	—	—	—	0.0254 (J)	—	—	—	—	0.238 (J)
RE33-20-190150	33-01077	5.0–6.0	QBT3	—	—	0.0543	—	—	—	0.0223 (J)	—	—	—	—	0.249 (J)
RE33-20-190137	33-01078	2.0–3.0	QBT3	—	—	0.0553	—	—	—	0.0307 (J)	—	—	—	—	0.244 (J)
RE33-21-218093	33-61001	0.0–1.0	FILL	—	—	—	—	—	—	—	0.0922 (J)	—	—	—	—
RE33-21-218094	33-61001	2.0–3.0	FILL	—	0.374	—	—	—	—	—	0.788 (J)	—	—	0.247 (J)	—
RE33-21-218095	33-61001	5.0–6.0	QBT3	—	0.0474	—	—	—	—	—	0.105 (J)	0.0133 (J)	—	0.0348 (J)	—
RE33-21-218096	33-61002	0.0–1.0	FILL	—	—	—	—	—	—	—	—	—	—	—	—
RE33-21-218099	33-61003	0.0–1.0	FILL	—	0.276	—	—	—	—	—	0.535 (J)	0.0681 (J)	—	0.198	—
RE33-21-218100	33-61003	2.0–3.0	FILL	—	1.9	—	—	0.305 (J)	—	—	4.27 (J)	0.771	—	1.34	—
RE33-21-221915	33-61003	2.0–3.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-218101	33-61003	5.0–6.0	QBT3	—	0.0182 (J)	—	—	—	—	—	0.037 (J)	—	—	0.0152 (J)	—
RE33-21-218104	33-61004	5.0–6.0	QBT3	—	—	—	0.0183 (J)	—	—	—	—	—	—	—	—
RE33-21-218106	33-61005	2.0–3.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—
RE33-21-218108	33-61006	0.0–1.0	FILL	—	0.29 (J-)	—	—	0.0577 (J)	—	—	0.652 (J-)	0.077 (J)	—	0.227 (J-)	—
RE33-21-221920	33-61006	0.0–1.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-218110	33-61006	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—
RE33-21-218111	33-61007	0.0–1.0	FILL	—	0.059 (J-)	—	—	—	—	—	0.116 (J-)	—	—	—	—
RE33-21-221923	33-61007	0.0–1.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-218114	33-61008	0.0–0.6	FILL	—	0.0755 (J-)	—	—	—	—	—	0.149 (J-)	—	—	—	—
RE33-21-218116	33-61008	5.0–6.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—
RE33-21-218117	33-61009	0.0–1.0	FILL	—	3.13 (J)	—	—	0.535	0.628 (J)	—	6.28 (J)	1.05 (J)	—	2.2 (J)	—
RE33-21-218118	33-61009	2.0–3.0	QBT3	—	0.0284 (J)	—	—	—	—	—	0.0568 (J)	—	—	0.0202 (J)	—

Table 4.7-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chloroform	Chrysene	Di-n-butylphthalate	Di-n-octylphthalate	Dibenz(a,h)anthracene	Dibenzofuran	Diethylphthalate	Fluoranthene	Fluorene	Hexanone[2-]	Indeno(1,2,3-cd)pyrene	Isophorone
Construction Worker SSL[a]				**134**	**23,100**	**26,900**	**2700[c]**	**24**	**85[c]**	**215,000**	**10,000**	**10,000**	**340[c]**	**240**	**53,700**
Industrial SSL[a]				**28.7**	**3230**	**91,600**	**8200[e]**	**3.23**	**1200[e]**	**733,000**	**33,700**	**33,700**	**1300[e]**	**32.3**	**27,000**
Residential SSL[a]				**5.9**	**153**	**6160**	**630[e]**	**0.153**	**78[e]**	**49,300**	**2320**	**2320**	**200[e]**	**1.53**	**5610**
RE33-21-218119	33-61009	5.0–6.0	QBT3	—	0.048 (J)	—	—	0.0114 (J)	—	—	0.116 (J)	0.0155 (J)	—	0.0366 (J)	—
RE33-21-218120	33-61010	0.0–1.0	FILL	—	0.0548 (J)	—	—	—	—	—	0.12 (J)	0.0135 (J)	—	0.0427 (J)	—
RE33-21-221933	33-61063	0.0–0.5	SOIL	0.00044 (J)	0.0943	—	—	—	—	—	0.177	0.017 (J)	—	0.0635	—
RE33-21-221935	33-61063	5.0–6.0	QBT3	—	—	—	0.0191 (J)	—	—	—	—	—	—	—	—
RE33-21-221936	33-61064	0.0–0.8	SOIL	—	0.347	—	—	0.0609 (J)	—	—	0.541	—	—	0.238	—
RE33-21-221937	33-61064	2.0–3.0	QBT3	—	0.0854	—	0.0251 (J)	0.0131 (J)	—	—	0.17	0.0237 (J)	—	0.0558	—
RE33-21-221938	33-61064	5.0–6.0	QBT3	—	—	—	0.0324 (J)	—	—	—	—	—	—	—	—
RE33-21-221939	33-61065	0.0–0.8	FILL	0.000956 (J)	2.19	—	—	0.281 (J)	—	—	4.7	0.75	—	1.37	—
RE33-21-221940	33-61065	2.0–3.0	QBT3	—	0.0878	—	—	0.0135 (J)	—	—	0.192	0.017 (J)	—	0.0534	—
RE33-21-221942	33-61066	0.0–1.0	FILL	—	0.632	—	—	—	—	—	1.34 (J)	0.17 (J)	—	0.393	—
RE33-21-221943	33-61066	2.0–3.0	FILL	—	0.054	—	0.0284 (J)	—	—	—	0.121	0.0194 (J)	—	0.0327 (J)	—
RE33-21-221944	33-61066	5.0–6.0	FILL	—	0.0659 (J)	—	—	—	—	—	0.14 (J)	—	0.00779 (J-)	—	—

Table 4.7-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Isopropyltoluene[4-]	Methylnaphthalene[1-]	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	Tetrachlorobenzene[1,2,4,5]	Toluene
Construction Worker SSL[a]				**2740**[h]	**6060**	**1000**	**159**	**7530**	**7530**	**80.7**	**14,000**
Industrial SSL[a]				**14,200**[h]	**813**	**3370**	**241**	**25,300**	**25,300**	**275**	**61,300**
Residential SSL[a]				**2360**[h]	**172**	**232**	**49.7**	**1740**	**1740**	**18.5**	**5230**
RE33-20-190135	33-01076	2.0–3.0	QBT3	—	—	—	—	—	—	—	—
RE33-20-190149	33-01076	5.0–6.0	QBT3	—	—	—	—	—	—	—	—
RE33-20-190136	33-01077	2.0–3.0	QBT3	—	—	—	—	—	—	—	—
RE33-20-190150	33-01077	5.0–6.0	QBT3	—	—	—	—	—	—	—	—
RE33-20-190137	33-01078	2.0–3.0	QBT3	—	—	—	—	—	—	—	—
RE33-21-218093	33-61001	0.0–1.0	FILL	—	—	—	—	0.0973 (J)	0.0854 (J-)	—	—
RE33-21-218094	33-61001	2.0–3.0	FILL	—	—	—	0.000437 (J)	0.77 (J)	0.715 (J-)	—	—
RE33-21-218095	33-61001	5.0–6.0	QBT3	—	—	—	—	0.107 (J)	0.0887 (J-)	—	—
RE33-21-218096	33-61002	0.0–1.0	FILL	—	—	—	—	—	—	—	—
RE33-21-218099	33-61003	0.0–1.0	FILL	—	—	—	0.0698 (J)	0.499 (J)	0.492 (J-)	—	—
RE33-21-218100	33-61003	2.0–3.0	FILL	—	0.32 (J)	0.38	1.14	4.87 (J)	3.51 (J-)	—	0.000475 (J)
RE33-21-221915	33-61003	2.0–3.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-218101	33-61003	5.0–6.0	QBT3	—	—	—	—	0.0341 (J)	0.0333 (J-)	—	—
RE33-21-218104	33-61004	5.0–6.0	QBT3	—	—	—	—	—	—	—	—
RE33-21-218106	33-61005	2.0–3.0	QBT3	—	—	—	—	—	—	0.118 (J-)	—
RE33-21-218108	33-61006	0.0–1.0	FILL	—	—	—	0.0927 (J-)	0.638 (J-)	0.588 (J-)	—	—
RE33-21-221920	33-61006	0.0–1.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-218110	33-61006	5.0–6.0	QBT3	—	—	—	—	—	—	—	—
RE33-21-218111	33-61007	0.0–1.0	FILL	—	—	—	—	0.101 (J-)	0.115 (J-)	—	—
RE33-21-221923	33-61007	0.0–1.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-218114	33-61008	0.0–0.6	FILL	—	—	—	—	0.131 (J-)	0.147 (J-)	—	—
RE33-21-218116	33-61008	5.0–6.0	QBT3	—	—	—	—	—	—	—	—
RE33-21-218117	33-61009	0.0–1.0	FILL	—	0.316	0.427	1.23 (J)	6.75 (J)	5.71 (J)	—	—
RE33-21-218118	33-61009	2.0–3.0	QBT3	—	—	—	—	0.0442 (J)	0.0431 (J)	—	—

Table 4.7-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Isopropyltoluene[4-]	Methylnaphthalene[1-]	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	Tetrachlorobenzene[1,2,4,5]	Toluene
Construction Worker SSL[a]				**2740[h]**	**6060**	**1000**	**159**	**7530**	**7530**	**80.7**	**14,000**
Industrial SSL[a]				**14,200[h]**	**813**	**3370**	**241**	**25,300**	**25,300**	**275**	**61,300**
Residential SSL[a]				**2360[h]**	**172**	**232**	**49.7**	**1740**	**1740**	**18.5**	**5230**
RE33-21-218119	33-61009	5.0–6.0	QBT3	—	—	—	0.0114 (J-)	0.0998 (J)	0.0836 (J)	—	—
RE33-21-218120	33-61010	0.0–1.0	FILL	—	—	—	—	0.0982 (J)	0.112 (J)	—	—
RE33-21-221933	33-61063	0.0–0.5	SOIL	—	—	—	—	0.148	0.173	—	—
RE33-21-221935	33-61063	5.0–6.0	QBT3	—	—	—	—	—	—	—	—
RE33-21-221936	33-61064	0.0–0.8	SOIL	—	—	—	—	0.318	0.607	—	—
RE33-21-221937	33-61064	2.0–3.0	QBT3	0.000399 (J)	—	—	0.0231 (J)	0.168	0.176	—	—
RE33-21-221938	33-61064	5.0–6.0	QBT3	—	—	—	—	—	—	—	—
RE33-21-221939	33-61065	0.0–0.8	FILL	—	0.288 (J)	0.316 (J)	0.935	5.15	4.91	—	0.000494 (J)
RE33-21-221940	33-61065	2.0–3.0	QBT3	—	—	—	0.0201 (J)	0.163	0.189	—	—
RE33-21-221942	33-61066	0.0–1.0	FILL	—	—	0.0598 (J)	0.174 (J)	1.32	1.38	—	—
RE33-21-221943	33-61066	2.0–3.0	FILL	—	—	0.0119 (J)	0.0353 (J)	0.148	0.127	—	—
RE33-21-221944	33-61066	5.0–6.0	FILL	—	—	—	0.000497 (J)	0.162 (J)	0.139 (J)	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED (2019, 700550) unless otherwise noted.

[b] Pyrene used as a surrogate based on structural similarity.

[c] Construction worker SSLs calculated using the equations outlined in NMED (2022, 702484), incorporating toxicity and chemical-specific parameters from EPA regional screening level (RSL) tables (http://www.epa.gov/risk/risk-based-screening-table-generic-tables).

[d] Dibenzofuran used as a surrogate based on structural similarity.

[e] SSLs from EPA RSL tables (http://www.epa.gov/risk/risk-based-screening-table-generic-tables).

[f] — = Not detected.

[g] NA = Not analyzed.

[h] Isopropylbenzene used as a surrogate based on structural similarity.

Table 4.7-2
Proposed Sampling and Analysis at SWMU 33-011(a)

Sampling Objective	Location Number	Location Description	Depth[a] (ft)	PAHs (SW-846:8270-SIM_PAHS)
Define lateral extent of PAHs north of location 33-61065	11a-1 through 11a-2	Two step-outs from location 33-61065	0.0–1.0 2.0–3.0 5.0–6.0	X[b]
Define lateral extent of PAHs north and west of location 33-61009	11a-3 through 11a-5	Three step-outs from location 33-61009	0.0–1.0 2.0–3.0 5.0–6.0	X

[a] Depths are below ground surface, unless specified otherwise.

[b] X = Analysis will be performed.

Table 4.8-1
Organic Chemicals Detected at SWMU 33-012(a)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Carbazole
Construction Worker SSL[a]				**15,100**	**7530**	**242,000**	**75,300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**7530[b]**	**2310**	**85[c,d]**
Industrial SSL[a]				**50,500**	**25,300**	**960,000**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300[b]**	**323**	**1200[d,e]**
Residential SSL[a]				**3480**	**1740**	**66,300**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740[b]**	**15.3**	**78[d,e]**
RE33-20-190287	33-01086	0.0–1.0	FILL	—[f]	—	—	—	0.0258	0.0197 (J)	0.138 (J)	—	—	—	—	—
RE33-20-190288	33-01086	2.0–3.0	FILL	—	—	0.0237	—	—	—	—	—	—	—	—	—
RE33-20-190289	33-01086	4.0–5.0	FILL	0.0185 (J)	—	0.0166	0.0238 (J)	—	—	0.0534	0.0547	0.0514	0.0428	0.0218 (J)	—
RE33-20-190290	33-01087	0.0–1.0	FILL	—	—	—	—	0.0269	0.0152	—	—	—	—	—	—
RE33-20-190291	33-01087	2.0–3.0	FILL	—	—	—	—	0.00207 (J)	0.00154 (J)	0.0236 (J)	0.0203 (J)	0.0203 (J)	—	—	—
RE33-20-190292	33-01087	4.0–5.0	FILL	—	—	—	—	0.00163 (J)	0.00154 (J)	0.0237 (J)	0.0241 (J)	0.0225 (J)	0.0176 (J)	0.0122 (J)	—
RE33-20-195039	33-01089	0.0–1.0	FILL	—	—	—	—	2.44	0.935	0.122 (J)	0.1 (J)	0.119 (J)	—	0.0434 (J)	—
RE33-20-195040	33-01089	2.0–3.0	FILL	—	—	—	—	0.00834	0.00386 (J)	0.0266 (J)	0.0258 (J)	0.0207 (J)	0.0171 (J)	0.0155 (J)	—
RE33-20-195041	33-01089	4.0–5.0	FILL	—	—	—	—	0.00263 (J)	0.0013 (J)	0.0128 (J)	—	—	—	—	—
RE33-20-190275	33-60658	0.0–1.0	FILL	—	—	—	—	0.0635	0.0452	0.109 (J)	0.0928 (J)	0.111 (J)	0.0632 (J)	—	—
RE33-20-190279	33-60658	2.0–3.0	FILL	—	—	—	—	—	—	0.0227 (J)	0.0205 (J)	0.0214 (J)	—	—	—
RE33-20-190283	33-60658	4.0–5.0	FILL	0.0148 (J-)	—	—	0.0266 (J-)	—	—	0.065 (J-)	0.0671 (J-)	0.0722 (J-)	0.0329 (J-)	0.0279 (J-)	—
RE33-20-190284	33-60659	4.0–5.0	FILL	0.0577	—	—	0.114	—	—	0.377	0.384	0.449	0.202	0.184	0.0581
RE33-20-190277	33-60660	0.0–1.0	FILL	—	—	—	—	0.02	0.0223	0.147 (J)	0.143 (J)	0.167 (J)	0.105 (J)	0.0655 (J)	—
RE33-20-190281	33-60660	2.0–3.0	FILL	0.562	—	—	0.903	0.256	0.157	1.59	1.86	1.94	1.09	0.811	0.422
RE33-20-190285	33-60660	4.0–5.0	FILL	—	—	—	—	0.0195	0.0102	0.0233 (J)	0.0214 (J)	0.021 (J)	0.0126 (J)	—	—
RE33-20-190282	33-60661	2.0–3.0	FILL	—	—	0.0294	—	0.131	0.0461	0.0153 (J)	0.0125 (J)	0.0125 (J)	—	—	—
RE33-20-190286	33-60661	4.0–5.0	FILL	—	—	0.00903	—	0.317	0.114	0.0203 (J+)	0.0189 (J+)	0.0164 (J+)	0.0122 (J+)	—	—
RE33-20-190293	33-60662	0.0–1.0	FILL	—	—	0.00535 (J)	—	0.161	0.0656 (J)	0.945 (J)	—	—	—	—	—
RE33-20-190298	33-60662	2.0–3.0	FILL	—	—	0.00837	—	—	—	—	—	—	—	—	—
RE33-20-190303	33-60662	4.0–5.0	FILL	0.0744	—	0.048	0.0967	—	—	0.231	0.246	0.234	0.17	0.0901	0.0467
RE33-20-190294	33-60663	0.0–1.0	FILL	—	—	—	—	0.0204 (J)	0.0223 (J)	0.313 (J)	0.202 (J)	0.254 (J)	—	—	—
RE33-20-190299	33-60663	2.0–3.0	FILL	—	—	0.0863	—	—	—	0.0211	0.0202	0.0181	0.016	—	—

Table 4.8-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Carbazole
Construction Worker SSL[a]				**15,100**	**753**	**242,000**	**75,300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**753**[b]	**2310**	**85**[c,d]
Industrial SSL[a]				**50,500**	**25,300**	**960,000**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300**[b]	**323**	**1200**[d,e]
Residential SSL[a]				**3480**	**1740**	**66,300**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740**[b]	**15.3**	**78**[d,e]
RE33-20-190304	33-60663	4.0–5.0	FILL	0.0153 (J)	—	—	0.0169 (J)	—	0.00224 (J)	0.0598	0.0606	0.0594	0.035 (J)	0.0252 (J)	0.0128 (J)
RE33-20-190295	33-60664	0.0–1.0	FILL	—	—	0.0134	—	0.153	0.0646 (J)	—	—	—	—	—	—
RE33-20-190300	33-60664	2.0–3.0	FILL	—	—	—	—	0.00635	0.00293 (J)	—	—	—	—	—	—
RE33-20-190305	33-60664	4.0–5.0	FILL	—	—	—	—	0.0116	0.00644	—	—	—	—	—	—
RE33-20-190296	33-60665	0.0–1.0	FILL	—	—	—	—	0.0191 (J)	0.0185 (J)	—	—	—	—	—	—
RE33-20-190297	33-60666	0.0–1.0	FILL	—	—	—	—	0.0393 (J)	0.039 (J)	—	—	—	—	—	—
RE33-20-190302	33-60666	2.0–3.0	FILL	—	—	—	—	—	—	0.0234 (J)	0.0192 (J)	—	—	—	—
RE33-20-190307	33-60666	4.0–5.0	FILL	—	—	—	—	—	—	0.014 (J)	—	—	—	—	—
RE33-21-222520	33-60992	0.0–1.0	FILL	0.0354	—	NA[g]	0.0672	NA	NA	0.244	0.237 (J+)	0.294 (J+)	0.173 (J+)	0.11	NA
RE33-21-217989	33-60992	0.0–1.0	SOIL	NA	NA	NA	NA	12.9 (J-)	4.84 (J-)	NA	NA	NA	NA	NA	NA
RE33-21-217990	33-60992	2.0–3.0	FILL	NA	NA	NA	NA	0.652	0.315	NA	NA	NA	NA	NA	NA
RE33-21-222521	33-60992	2.0–3.0	FILL	0.0603	—	NA	0.149	NA	NA	0.415	0.44 (J+)	0.514 (J+)	0.291 (J+)	0.199	NA
RE33-21-217991	33-60992	4.0–5.0	FILL	NA	NA	NA	NA	0.0818	0.0405	NA	NA	NA	NA	NA	NA
RE33-21-222522	33-60992	4.0–5.0	FILL	0.0213 (J)	—	NA	0.0356	NA	NA	0.114	0.114 (J+)	0.139 (J+)	0.0782 (J+)	0.0569	NA
RE33-21-217992	33-60993	0.0–1.0	FILL	NA	NA	NA	NA	9 (J-)	4.05 (J-)	NA	NA	NA	NA	NA	NA
RE33-21-222523	33-60993	0.0–1.0	FILL	0.168	—	NA	0.298	NA	NA	0.918	0.816 (J+)	1.02 (J+)	0.434 (J+)	0.406	NA
RE33-21-217993	33-60993	2.0–3.0	FILL	NA	NA	NA	NA	0.195	0.0928	NA	NA	NA	NA	NA	NA
RE33-21-222524	33-60993	2.0–3.0	FILL	0.0371	—	NA	0.0472	NA	NA	0.196	0.216 (J+)	0.25 (J+)	0.182 (J+)	0.101	NA
RE33-21-217994	33-60993	4.0–5.0	FILL	NA	NA	NA	NA	0.109	0.0611	NA	NA	NA	NA	NA	NA
RE33-21-222525	33-60993	4.0–5.0	FILL	—	—	NA	0.0245 (J+)	NA	NA	0.0806 (J+)	0.0806 (J+)	0.0982 (J+)	0.0526 (J+)	0.0421 (J+)	NA
RE33-21-222526	33-60994	0.0–1.0	FILL	2.35e—005 (J)	—	NA	4.36e—005	NA	NA	0.000322	0.000342	0.00052	0.000221	0.000168	NA
RE33-21-217996	33-60994	2.0–3.0	FILL	NA	NA	NA	NA	0.0152	0.0102	NA	NA	NA	NA	NA	NA
RE33-21-222527	33-60994	2.0–3.0	FILL	0.00533	—	NA	0.00914	NA	NA	0.0339	0.0369	0.0407	0.0255	0.0156	NA
RE33-21-217997	33-60994	4.0–5.0	FILL	NA	NA	NA	NA	0.0029 (J)	0.00224 (J)	NA	NA	NA	NA	NA	NA
RE33-21-222528	33-60994	4.0–5.0	FILL	—	—	NA	0.00229 (J)	NA	NA	0.00649	0.00764	0.0084	0.00573	0.00344 (J)	NA
RE33-21-217998	33-60995	0.0–1.0	FILL	NA	NA	NA	NA	0.0169	0.0154 (J)	NA	NA	NA	NA	NA	NA
RE33-21-217999	33-60995	2.0–3.0	FILL	NA	NA	NA	NA	0.0228	0.0104	NA	NA	NA	NA	NA	NA

Table 4.8-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Carbazole
Construction Worker SSL[a]				**15,100**	**753**	**242,000**	**75,300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**753**[b]	**2310**	**85**[c,d]
Industrial SSL[a]				**50,500**	**25,300**	**960,000**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300**[b]	**323**	**1200**[d,e]
Residential SSL[a]				**3480**	**1740**	**66,300**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740**[b]	**15.3**	**78**[d,e]
RE33-21-218001	33-60996	0.0–1.0	FILL	0.0549 (J)	—	NA	0.192 (J)	NA	NA	1.01 (J)	1.02 (J)	1.72 (J)	0.57 (J)	0.529 (J)	NA
RE33-21-218002	33-60996	2.0–3.0	FILL	0.0303 (J)	—	NA	0.0468 (J)	NA	NA	0.0809 (J)	0.0916 (J)	0.0947 (J)	0.0541 (J)	0.0368 (J)	NA
RE33-21-222530	33-60996	2.0–3.0	FILL	NA	NA	NA	NA	—	0.00174 (J)	NA	NA	NA	NA	NA	NA
RE33-21-222531	33-60996	4.0–5.0	FILL	NA	NA	NA	NA	—	0.0106	NA	NA	NA	NA	NA	NA
RE33-21-222532	33-61085	0.0–1.0	FILL	0.552 (J)	—	NA	1 (J)	0.115	0.0864	1.71 (J)	1.41 (J)	1.72 (J)	1 (J)	0.673 (J)	NA
RE33-21-222533	33-61085	2.0–3.0	FILL	0.0828 (J)	—	NA	0.133 (J)	0.0626	0.0619	0.271 (J)	0.247 (J)	0.295 (J)	0.188 (J)	0.109 (J)	NA
RE33-21-222534	33-61085	4.0–5.0	FILL	0.124 (J)	—	NA	0.202 (J)	0.0302	0.0314	0.303 (J)	0.277 (J)	0.306 (J)	0.192 (J)	0.121 (J)	NA
RE33-21-222535	33-61086	0.0–1.0	FILL	0.562 (J)	—	NA	3.15 (J)	NA	NA	11.5 (J)	10.4 (J)	14.8 (J)	6.11 (J)	5.06 (J)	NA
RE33-21-222536	33-61086	2.0–3.0	FILL	—	—	NA	0.00415	NA	NA	0.0268	0.0279	0.0415	0.0189	0.0136	NA
RE33-21-222537	33-61086	4.0–5.0	FILL	0.00472 (J)	—	NA	0.0145 (J)	NA	NA	0.066 (J)	0.0704 (J)	0.0995 (J)	0.0562 (J)	0.0322 (J)	NA
RE33-21-222538	33-61087	0.0–1.0	FILL	0.214	—	NA	1.02	NA	NA	5.4	5.5	7.89	3.65	2.74	NA
RE33-21-222539	33-61087	2.0–3.0	FILL	1.44 (J)	0.0642 (J)	NA	2.08 (J)	NA	NA	3.46 (J)	3.66 (J)	3.88 (J)	2.11 (J)	1.3 (J)	NA
RE33-21-222540	33-61087	4.0–5.0	FILL	0.00274 (J)	—	NA	0.00626	NA	NA	0.0266	0.0289	0.0383	0.0207	0.0137	NA
RE33-21-222541	33-61088	0.0–1.0	FILL	0.128 (J)	—	NA	0.692	NA	NA	2.46	2.26	3.22	1.38	1.11	NA
RE33-21-222542	33-61088	2.0–3.0	FILL	0.0197 (J)	—	NA	0.0473	NA	NA	0.154 (J)	0.158 (J)	0.209 (J)	0.122 (J)	0.0749	NA
RE33-21-222543	33-61088	4.0–5.0	FILL	0.00868	—	NA	0.0221	NA	NA	0.0896	0.086	0.115	0.0576	0.0391	NA
RE33-21-222544	33-61089	0.0–1.0	FILL	—	—	NA	0.0585 (J)	0.0886	0.0684	0.161 (J)	0.168 (J)	0.19 (J)	0.146 (J)	0.0731 (J)	NA
RE33-21-222545	33-61089	2.0–3.0	FILL	0.0213 (J)	—	NA	0.0289 (J)	0.0138	0.00955	0.0746 (J)	0.0837 (J)	0.091 (J)	0.0568 (J)	0.0321 (J)	NA
RE33-21-222546	33-61089	4.0–5.0	FILL	0.0185 (J)	—	NA	0.0266 (J)	0.0102	0.00733	0.0639 (J)	0.071 (J)	0.0774 (J)	0.049 (J)	0.0284 (J)	NA
RE33-21-222547	33-61090	0.0–1.0	FILL	—	—	NA	0.0307 (J)	0.0119	0.0105	0.15 (J)	0.188 (J)	0.246 (J)	0.147 (J)	0.0921 (J)	NA
RE33-21-222548	33-61090	2.0–3.0	FILL	0.522 (J)	—	NA	0.761 (J)	1.61	0.647	1.06 (J)	0.917 (J)	1.07 (J)	0.613 (J)	0.416 (J)	NA
RE33-21-222549	33-61090	4.0–5.0	FILL	0.109 (J)	—	NA	0.19 (J)	0.842	0.244	0.372 (J)	0.387 (J)	0.416 (J)	0.27 (J)	0.168 (J)	NA
RE33-21-222550	33-61091	0.0–1.0	FILL	0.171 (J)	—	NA	0.331 (J)	0.0455 (J)	0.0441 (J)	0.662 (J)	0.555 (J)	0.676 (J)	0.331 (J)	0.246 (J)	NA
RE33-21-222551	33-61091	2.0–3.0	FILL	1.12 (J)	—	NA	1.96 (J)	0.0446	0.0291 (J)	3.04 (J)	2.42 (J)	2.97 (J)	1.32 (J)	1.1 (J)	NA
RE33-21-222552	33-61091	4.0–5.0	FILL	0.00588 (J)	—	NA	0.009 (J)	0.00717 (J)	0.00806 (J)	0.0197 (J)	0.0194 (J)	0.0225 (J)	0.0138 (J)	0.0083 (J)	NA
RE33-21-222553	33-61092	0.0–1.0	FILL	0.00467 (J)	—	NA	0.0194 (J)	0.00978	0.00714	0.0447 (J)	0.0527 (J)	0.0567 (J)	0.0354 (J)	0.0227 (J)	NA
RE33-21-222554	33-61092	2.0–3.0	FILL	0.00754 (J)	0.00264 (J)	NA	0.0279 (J)	0.0154	0.00613	0.189 (J)	0.207 (J)	0.307 (J)	0.142 (J)	0.106 (J)	NA

Table 4.8-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Carbazole
Construction Worker SSL[a]				**15,100**	**753**	**242,000**	**75,300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**753**[b]	**2310**	**85**[c,d]
Industrial SSL[a]				**50,500**	**25,300**	**960,000**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300**[b]	**323**	**1200**[d,e]
Residential SSL[a]				**3480**	**1740**	**66,300**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740**[b]	**15.3**	**78**[d,e]
RE33-21-222555	33-61092	4.0–5.0	FILL	—	—	NA	0.00191 (J)	—	0.00148 (J)	0.00382 (J)	0.00343 (J)	0.0042 (J)	0.00343 (J)	0.00229 (J)	NA
RE33-21-222556	33-61093	0.0–1.0	FILL	0.00298 (J)	—	NA	0.0103 (J)	0.0042	0.00287 (J)	0.054 (J)	0.0587 (J)	0.0818 (J)	0.0431 (J)	0.0292 (J)	NA
RE33-21-222557	33-61093	2.0–3.0	FILL	0.00596 (J)	—	NA	0.0119 (J)	0.135	0.037	0.0306 (J)	0.0339 (J)	0.0373 (J)	0.0227 (J)	0.0145 (J)	NA
RE33-21-222558	33-61093	4.0–5.0	FILL	—	—	NA	—	0.0157	0.00472	0.00402 (J)	0.00402 (J)	0.00438 (J)	—	—	NA
RE33-21-222559	33-61094	0.0–1.0	FILL	0.935 (J+)	0.0167 (J+)	NA	1.47 (J+)	8.66	3.85	2.67 (J+)	2.44 (J+)	2.82 (J+)	1.5 (J+)	1.04 (J+)	NA
RE33-21-222560	33-61094	2.0–3.0	FILL	0.365 (J)	—	NA	0.646 (J)	7.74	3.57	1.08 (J)	0.978 (J)	1.03 (J)	0.703 (J)	0.412 (J)	NA
RE33-21-222561	33-61094	4.0–5.0	FILL	0.22 (J)	—	NA	0.376 (J)	8.17	2.14	0.585 (J+)	0.56 (J+)	0.585 (J+)	0.491 (J+)	0.211	NA
RE33-21-222562	33-61095	0.0–1.0	FILL	1.65 (J)	0.0556 (J)	NA	2.62 (J)	12.3	3.01	3.5 (J+)	3.13 (J+)	3.39 (J+)	1.92 (J+)	1.27	NA
RE33-21-222563	33-61095	2.0–3.0	FILL	1.72 (J)	—	NA	2.88 (J)	17.3	4.61	4.43 (J+)	3.66 (J+)	4.45 (J+)	2.22 (J+)	1.6	NA
RE33-21-222564	33-61095	4.0–5.0	FILL	0.0433 (J)	0.0294	NA	0.104 (J)	1.94	0.47	0.258 (J+)	0.292 (J+)	0.329 (J+)	0.228 (J+)	0.121	NA
RE33-21-222565	33-61096	0.0–1.0	FILL	0.329 (J)	—	NA	0.901 (J)	0.617	0.191	3.97 (J+)	3.6 (J+)	4.26 (J+)	1.77 (J+)	1.65	NA
RE33-21-222566	33-61096	2.0–3.0	FILL	0.331 (J)	—	NA	0.512 (J)	5.35	1.59	0.735 (J+)	0.652 (J+)	0.742 (J+)	0.457 (J+)	0.268	NA
RE33-21-222567	33-61096	4.0–5.0	FILL	—	—	NA	0.309 (J)	3.43	0.998	0.583 (J+)	0.514 (J+)	0.583 (J+)	0.309 (J+)	0.24 (J)	NA
RE33-21-222568	33-61097	0.0–1.0	FILL	0.302 (J)	—	NA	0.611 (J)	11.6	2.85	1.16 (J+)	1.08 (J+)	1.18 (J+)	0.675 (J+)	0.46	NA
RE33-21-222569	33-61097	2.0–3.0	FILL	—	—	NA	—	0.263	0.0602	0.00439 (J+)	0.00475 (J+)	0.00475 (J+)	0.00475 (J+)	0.00219 (J)	NA
RE33-21-222570	33-61097	4.0–5.0	FILL	—	—	NA	0.0177 (J)	0.919	0.221	0.0407 (J+)	0.039 (J+)	0.0407 (J+)	0.0354 (J+)	0.0159 (J)	NA
RE33-21-222571	33-61098	0.0–1.0	FILL	0.0507 (J)	—	NA	0.0978 (J)	7.06	1.69	0.229 (J+)	0.267 (J+)	0.273 (J+)	0.229 (J+)	0.103	NA
RE33-21-222572	33-61098	2.0–3.0	FILL	0.00205 (J)	—	NA	0.00513 (J)	0.649	0.153	0.0154 (J+)	0.0161 (J+)	0.0171 (J+)	0.0161 (J+)	0.00718	NA
RE33-21-222573	33-61098	4.0–5.0	FILL	0.00313 (J)	—	NA	0.00661 (J)	1.3	0.299	0.0153 (J+)	0.0163 (J+)	0.0177 (J+)	0.0163 (J+)	0.00661	NA
RE33-21-222574	33-61099	0.0–1.0	FILL	0.0562	—	NA	0.137	5.93	2.63	0.478	0.499 (J+)	0.59 (J+)	0.33 (J+)	0.232	NA
RE33-21-222575	33-61099	2.0–3.0	FILL	—	—	NA	—	0.634	0.28	0.0411	0.0377 (J+)	0.0445 (J+)	0.0274 (J+)	0.0171 (J)	NA

Table 4.8-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Carbazole
Construction Worker SSL[a]				**15,100**	**753**	**242,000**	**75,300**	**4.91**	**85.3**	**240**	**15.0**	**240**	**753**[b]	**2310**	**85**[c,d]
Industrial SSL[a]				**50,500**	**25,300**	**960,000**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300**[b]	**323**	**1200**[d,e]
Residential SSL[a]				**3480**	**1740**	**66,300**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740**[b]	**15.3**	**78**[d,e]
RE33-21-222576	33-61099	4.0–5.0	FILL	0.0189	—	NA	0.0276	0.0767	0.0367	0.0451	0.0433 (J+)	0.0475 (J+)	0.0321 (J+)	0.0192	NA
RE33-21-222577	33-61100	0.0–1.0	FILL	0.13	0.13	NA	0.36	8.04	3.86	3.36	4.2 (J+)	5.32 (J+)	2.3 (J+)	1.98	NA
RE33-21-222578	33-61100	2.0–3.0	FILL	0.00478	—	NA	0.00785	0.129	0.0679	0.0232	0.0242 (J+)	0.028 (J+)	0.0174 (J+)	0.0113	NA
RE33-21-222579	33-61100	4.0–5.0	FILL	0.00276 (J)	—	NA	0.00483	0.0972	0.0492	0.0173	0.02 (J+)	0.0217 (J+)	0.0166 (J+)	0.00828	NA

Table 4.8-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[1-]	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	Total PAHs	Trichloroethene
Construction Worker SSL[a]				**23,100**	**24**	**10,000**	**10,000**	**240**	**6060**	**1000**	**159**	**7530**	**7530**	**na[h]**	**6.90**
Industrial SSL[a]				**3230**	**3.23**	**33,700**	**33,700**	**32.3**	**813**	**3370**	**241**	**25,300**	**25,300**	**na**	**36.5**
Residential SSL[a]				**153**	**0.153**	**2320**	**2320**	**1.53**	**172**	**232**	**49.7**	**1740**	**1740**	**na**	**6.77**
RE33-20-190287	33-01086	0.0–1.0	FILL	—	—	0.223 (J)	—	—	—	—	—	—	0.235 (J)	459	—
RE33-20-190288	33-01086	2.0–3.0	FILL	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-190289	33-01086	4.0–5.0	FILL	0.0419	—	0.0839	0.016 (J)	0.0395 (J)	—	—	0.0206 (J)	0.0946	0.097	409	—
RE33-20-190290	33-01087	0.0–1.0	FILL	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-190291	33-01087	2.0–3.0	FILL	0.0174 (J)	—	0.031 (J)	—	—	—	—	—	0.0248 (J)	0.0517	128	—
RE33-20-190292	33-01087	4.0–5.0	FILL	0.0196 (J)	—	0.0318 (J)	—	—	—	—	—	0.0298 (J)	0.0535	150	—
RE33-20-195039	33-01089	0.0–1.0	FILL	0.1 (J)	—	0.206	—	—	—	—	0.000437 (J)	0.122 (J)	0.252	743	—
RE33-20-195040	33-01089	2.0–3.0	FILL	0.0207 (J)	—	0.0357 (J)	—	0.0183 (J)	—	—	—	0.035 (J)	0.0572	164	—
RE33-20-195041	33-01089	4.0–5.0	FILL	—	—	0.0147 (J)	—	—	—	—	—	0.0178 (J)	0.024 (J)	56.5	0.000909 (J)
RE33-20-190275	33-60658	0.0–1.0	FILL	0.0868 (J)	—	0.128 (J)	—	—	—	—	—	—	0.174 (J)	413	—
RE33-20-190279	33-60658	2.0–3.0	FILL	0.0163 (J)	—	0.0304 (J)	—	—	—	—	—	0.0257 (J)	0.0304 (J)	108	—
RE33-20-190283	33-60658	4.0–5.0	FILL	0.0583 (J-)	—	0.0912 (J-)	0.0169 (J-)	0.0359 (J-)	—	—	0.0198 (J-)	0.104 (J-)	0.111 (J-)	470 (J-)	—
RE33-20-190284	33-60659	4.0–5.0	FILL	0.353	0.0516	0.748	0.065	0.223	0.0183 (J)	0.0223 (J)	0.0569	0.475	0.672	2800	—
RE33-20-190277	33-60660	0.0–1.0	FILL	0.133 (J)	—	0.25	—	0.103 (J)	—	—	—	0.156 (J)	0.28	918	—
RE33-20-190281	33-60660	2.0–3.0	FILL	1.55	0.296	2.78	0.564	1.14	0.182 (J)	0.262	0.836	3.26	3.6	15,100	—
RE33-20-190285	33-60660	4.0–5.0	FILL	0.0191 (J)	—	0.0362 (J)	—	0.013 (J)	—	—	0.00231	0.0374 (J)	0.0351 (J)	130	—
RE33-20-190282	33-60661	2.0–3.0	FILL	—	—	0.0226 (J)	—	—	—	—	—	0.0171 (J)	0.0216 (J)	73.8	—
RE33-20-190286	33-60661	4.0–5.0	FILL	0.0133 (J+)	—	0.0227 (J+)	—	0.014 (J+)	—	—	—	0.0217 (J+)	0.0259 (J+)	86.7 (J+)	—
RE33-20-190293	33-60662	0.0–1.0	FILL	—	—	1.23 (J)	—	—	—	—	—	1.03 (J)	1.29 (J)	3550	—
RE33-20-190298	33-60662	2.0–3.0	FILL	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-190303	33-60662	4.0–5.0	FILL	0.219	0.0471	0.379	0.0727	0.151	0.0298 (J)	0.0331 (J)	0.0913	0.443	0.456	1930	—
RE33-20-190294	33-60663	0.0–1.0	FILL	—	—	0.332 (J)	—	—	—	—	—	0.261 (J)	0.417 (J)	1260	—
RE33-20-190299	33-60663	2.0–3.0	FILL	0.0156	—	0.027	—	0.0164	—	—	—	0.0244	0.0341	104	—

Table 4.8-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[1-]	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	Total PAHs	Trichloroethene
Construction Worker SSL[a]				**23,100**	**24**	**10,000**	**10,000**	**240**	**6060**	**1000**	**159**	**7530**	**7530**	**na[h]**	**6.90**
Industrial SSL[a]				**3230**	**3.23**	**33,700**	**33,700**	**32.3**	**813**	**3370**	**241**	**25,300**	**25,300**	**na**	**36.5**
Residential SSL[a]				**153**	**0.153**	**2320**	**2320**	**1.53**	**172**	**232**	**49.7**	**1740**	**1740**	**na**	**6.77**
RE33-20-190304	33-60663	4.0–5.0	FILL	0.0499	—	0.113	0.0186 (J)	0.0388 (J)	—	—	0.0243 (J)	0.101	0.094	453	—
RE33-20-190295	33-60664	0.0–1.0	FILL	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-190300	33-60664	2.0–3.0	FILL	—	—	—	—	—	—	—	—	—	0.0546 (J)	54.6	—
RE33-20-190305	33-60664	4.0–5.0	FILL	—	—	—	—	—	—	—	—	—	0.0142 (J)	14.2	—
RE33-20-190296	33-60665	0.0–1.0	FILL	—	—	—	—	—	—	—	—	—	0.0639 (J)	63.9	—
RE33-20-190297	33-60666	0.0–1.0	FILL	—	—	—	—	—	—	—	—	—	0.0649	64.9	—
RE33-20-190302	33-60666	2.0–3.0	FILL	0.0175 (J)	—	0.0313 (J)	—	—	—	—	—	0.028 (J)	0.043	102	—
RE33-20-190307	33-60666	4.0–5.0	FILL	—	—	0.0179 (J)	—	—	—	—	—	—	0.0136 (J)	31.5	—
RE33-21-222520	33-60992	0.0–1.0	FILL	0.244 (J+)	0.0425	0.407 (J+)	0.0248 (J)	0.191 (J+)	—	—	—	0.262 (J+)	0.548 (J+)	NA	NA
RE33-21-217989	33-60992	0.0–1.0	SOIL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217990	33-60992	2.0–3.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222521	33-60992	2.0–3.0	FILL	0.415 (J+)	0.078	0.656 (J+)	0.0532	0.337 (J+)	—	—	0.0213 (J)	0.507 (J+)	0.947 (J+)	NA	NA
RE33-21-217991	33-60992	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222522	33-60992	4.0–5.0	FILL	0.114 (J+)	0.0213 (J)	0.192 (J+)	—	0.0853 (J+)	—	—	—	0.153 (J+)	0.242 (J+)	NA	NA
RE33-21-217992	33-60993	0.0–1.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222523	33-60993	0.0–1.0	FILL	0.883 (J+)	0.137	1.52 (J+)	0.123	0.536 (J+)	0.0245 (J)	0.0175 (J)	0.028 (J)	1.18 (J+)	2.1 (J+)	NA	NA
RE33-21-217993	33-60993	2.0–3.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222524	33-60993	2.0–3.0	FILL	0.206 (J+)	0.0439	0.337 (J+)	0.0202 (J)	0.189 (J+)	—	—	—	0.223 (J+)	0.456 (J+)	NA	NA
RE33-21-217994	33-60993	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222525	33-60993	4.0–5.0	FILL	0.0806 (J+)	—	0.14 (J+)	—	0.0596 (J+)	—	—	—	0.112 (J+)	0.182 (J+)	NA	NA
RE33-21-222526	33-60994	0.0p1.0	FILL	0.000332	5.7e—005	0.00068	—	0.000248	—	—	—	0.000245	0.00066	NA	NA
RE33-21-217996	33-60994	2.0–3.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222527	33-60994	2.0–3.0	FILL	0.0324	0.00685	0.0556	0.00533	0.0282	—	—	0.0019 (J)	0.0419	0.0647	NA	NA
RE33-21-217997	33-60994	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222528	33-60994	4.0–5.0	FILL	0.00687	—	0.0118	—	0.00611	—	—	—	0.00993	0.0134	NA	NA
RE33-21-217998	33-60995	0.0–1.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-217999	33-60995	2.0–3.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 4.8-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[1-]	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	Total PAHs	Trichloroethene
Construction Worker SSL[a]				**23,100**	**24**	**10,000**	**10,000**	**240**	**6060**	**1000**	**159**	**7530**	**7530**	**na[h]**	**6.90**
Industrial SSL[a]				**3230**	**3.23**	**33,700**	**33,700**	**32.3**	**813**	**3370**	**241**	**25,300**	**25,300**	**na**	**36.5**
Residential SSL[a]				**153**	**0.153**	**2320**	**2320**	**1.53**	**172**	**232**	**49.7**	**1740**	**1740**	**na**	**6.77**
RE33-21-218001	33-60996	0.0–1.0	FILL	1.24 (J)	0.158 (J)	3.14 (J)	—	0.604 (J)	—	—	—	1.4 (J)	2.79 (J)	NA	NA
RE33-21-218002	33-60996	2.0–3.0	FILL	0.0813 (J)	0.0165 (J)	0.155 (J)	0.0253 (J)	0.0579 (J)	0.00805	0.00997	0.0196 (J)	0.17 (J)	0.17 (J)	NA	NA
RE33-21-222530	33-60996	2.0–3.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222531	33-60996	4.0–5.0	FILL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RE33-21-222532	33-61085	0.0–1.0	FILL	1.62 (J)	0.31	3.4 (J)	0.483 (J)	1.14 (J)	0.103 (J)	0.121 (J)	0.207	3.45 (J)	3.47 (J)	NA	NA
RE33-21-222533	33-61085	2.0–3.0	FILL	0.255 (J)	0.0483	0.532 (J)	0.069 (J)	0.195 (J)	0.0138 (J)	0.0173	0.0483	0.495 (J)	0.587 (J)	NA	NA
RE33-21-222534	33-61085	4.0–5.0	FILL	0.296 (J)	0.0519 (J)	0.634 (J)	0.111 (J)	0.204 (J)	0.0259 (J)	0.0346 (J)	0.0934 (J)	0.695 (J)	0.69 (J)	NA	NA
RE33-21-222535	33-61086	0.0–1.0	FILL	11.7 (J)	1.72 (J)	30.4 (J)	0.337 (J)	7.38 (J)	—	—	—	15.1 (J)	29.5 (J)	NA	NA
RE33-21-222536	33-61086	2.0–3.0	FILL	0.0302	0.0049	0.0736	—	0.0215	—	—	—	0.0279	0.0645	NA	NA
RE33-21-222537	33-61086	4.0–5.0	FILL	0.0739 (J)	0.0142 (J)	0.175 (J)	0.00393 (J)	0.0629 (J)	—	—	—	0.0743 (J)	0.151 (J)	NA	NA
RE33-21-222538	33-61087	0.0–1.0	FILL	6.07	0.998	14.4	0.107 (J)	4.33	—	—	—	5.79	14.6	NA	NA
RE33-21-222539	33-61087	2.0–3.0	FILL	3.13 (J)	0.663 (J)	8.47 (J)	1.87 (J)	2.42 (J)	0.765 (J)	1.17 (J)	3.44 (J)	10.6 (J)	8.72 (J)	NA	NA
RE33-21-222540	33-61087	4.0–5.0	FILL	0.0293	0.00508	0.061	0.00391	0.0235	—	—	0.00235 (J)	0.0325	0.0598	NA	NA
RE33-21-222541	33-61088	0.0–1.0	FILL	2.61	0.383	6.85	—	1.71	—	—	—	3.28	6.41	NA	NA
RE33-21-222542	33-61088	2.0–3.0	FILL	0.173 (J)	0.0276 (J)	0.414 (J)	—	0.134 (J)	—	—	—	0.252 (J)	0.418 (J)	NA	NA
RE33-21-222543	33-61088	4.0–5.0	FILL	0.0916	0.015	0.212	0.0111 (J)	0.0663	0.00355 (J)	0.00474	0.0146 (J)	0.115	0.199	NA	NA
RE33-21-222544	33-61089	0.0–1.0	FILL	0.153 (J)	0.0365 (J)	0.336 (J)	—	0.153 (J)	—	—	—	0.219 (J)	0.248 (J)	NA	NA
RE33-21-222545	33-61089	2.0–3.0	FILL	0.0729 (J)	0.0157	0.13 (J)	0.0234 (J)	0.0634 (J)	0.00871	0.00906	0.023	0.136 (J)	0.158 (J)	NA	NA
RE33-21-222546	33-61089	4.0–5.0	FILL	0.0596 (J)	0.0128	0.11 (J)	0.0185 (J)	0.0546 (J)	0.00639	0.00603	0.011	0.111 (J)	0.132 (J)	NA	NA
RE33-21-222547	33-61090	0.0–1.0	FILL	0.167 (J)	0.0375 (J)	0.307 (J)	—	0.16 (J)	—	—	—	0.137 (J)	0.311 (J)	NA	NA
RE33-21-222548	33-61090	2.0–3.0	FILL	0.987 (J)	0.176 (J)	2.38 (J)	0.458 (J)	0.684 (J)	0.162 (J)	0.183 (J)	0.367 (J)	2.68 (J)	2.76 (J)	NA	NA
RE33-21-222549	33-61090	4.0–5.0	FILL	0.357 (J)	0.0802 (J)	0.708 (J)	0.131 (J)	0.277 (J)	0.0657 (J)	0.0657 (J)	0.168 (J)	0.759 (J)	0.781 (J)	NA	NA
RE33-21-222550	33-61091	0.0–1.0	FILL	0.602 (J)	0.11	1.52 (J)	0.164 (J)	0.402 (J)	0.032 (J)	0.0356	0.0676	1.25 (J)	1 (J)	NA	NA
RE33-21-222551	33-61091	2.0–3.0	FILL	2.75 (J)	0.466	5.87 (J)	0.984 (J)	1.65 (J)	0.199	0.271	0.538	6.6 (J)	5.93 (J)	NA	NA
RE33-21-222552	33-61091	4.0–5.0	FILL	0.0187 (J)	0.00346	0.0363 (J)	0.00519 (J)	0.0149 (J)	—	0.00173 (J)	0.0045	0.0346 (J)	0.0412 (J)	NA	NA
RE33-21-222553	33-61092	0.0–1.0	FILL	0.0447 (J)	0.0103 (J)	0.0891 (J)	0.00667 (J)	0.0407 (J)	—	—	—	0.0661 (J)	0.0724 (J)	NA	NA
RE33-21-222554	33-61092	2.0–3.0	FILL	0.216 (J)	0.0479 (J)	0.492 (J)	0.00792 (J)	0.159 (J)	—	0.00189 (J)	—	0.143 (J)	0.409 (J)	NA	NA

Table 4.8-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[1-]	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	Total PAHs	Trichloroethene
Construction Worker SSL[a]				**23,100**	**24**	**10,000**	**10,000**	**240**	**6060**	**1000**	**159**	**7530**	**7530**	**na[h]**	**6.90**
Industrial SSL[a]				**3230**	**3.23**	**33,700**	**33,700**	**32.3**	**813**	**3370**	**241**	**25,300**	**25,300**	**na**	**36.5**
Residential SSL[a]				**153**	**0.153**	**2320**	**2320**	**1.53**	**172**	**232**	**49.7**	**1740**	**1740**	**na**	**6.77**
RE33-21-222555	33-61092	4.0–5.0	FILL	0.00343 (J)	—	0.00611 (J)	—	0.00343 (J)	—	—	—	0.00534 (J)	0.00611 (J)	NA	NA
RE33-21-222556	33-61093	0.0–1.0	FILL	0.0613 (J)	0.0123 (J)	0.127 (J)	0.00232 (J)	0.0507 (J)	—	—	—	0.048 (J)	0.122 (J)	NA	NA
RE33-21-222557	33-61093	2.0–3.0	FILL	0.0294 (J)	0.00671 (J)	0.0641 (J)	0.00596 (J)	0.0257 (J)	—	—	0.00335 (J)	0.044 (J)	0.0488 (J)	NA	NA
RE33-21-222558	33-61093	4.0–5.0	FILL	0.00365 (J)	—	0.00731 (J)	—	0.00365 (J)	—	—	—	0.00621 (J)	0.00767 (J)	NA	NA
RE33-21-222559	33-61094	0.0–1.0	FILL	2.53 (J+)	0.424 (J+)	5.12 (J+)	0.768 (J+)	1.76 (J+)	0.164 (J+)	0.18 (J+)	0.361 (J+)	4.92 (J+)	5.49 (J+)	NA	NA
RE33-21-222560	33-61094	2.0–3.0	FILL	0.988 (J)	0.211	2.47 (J)	0.338 (J)	0.777 (J)	0.077	0.0938	0.228	2.11 (J)	1.83 (J)	NA	NA
RE33-21-222561	33-61094	4.0–5.0	FILL	0.558 (J+)	0.141 (J+)	1.46 (J)	0.189 (J)	0.518 (J+)	0.0395	0.0446 (J+)	0.105 (J)	1.17 (J)	0.971 (J)	NA	NA
RE33-21-222562	33-61095	0.0–1.0	FILL	3.33 (J+)	0.612 (J+)	8.77 (J)	1.56 (J)	2.32 (J+)	0.396	0.563 (J+)	1.51 (J)	8.05 (J)	5.6 (J)	NA	NA
RE33-21-222563	33-61095	2.0–3.0	FILL	4.21 (J+)	0.664 (J+)	9.04 (J)	1.56 (J)	2.6 (J+)	0.339	0.491 (J+)	1.24 (J)	10.3 (J)	10.9 (J)	NA	NA
RE33-21-222564	33-61095	4.0–5.0	FILL	0.256 (J+)	0.0692 (J+)	0.45 (J)	0.0433 (J)	0.273 (J+)	0.0121 (J)	0.0138 (J+)	0.0294 (J)	0.27 (J)	0.305 (J)	NA	NA
RE33-21-222565	33-61096	0.0–1.0	FILL	3.9 (J+)	0.711 (J+)	8.39 (J)	0.243 (J)	2.27 (J+)	—	—	0.104 (J)	2.69 (J)	4.9 (J)	NA	NA
RE33-21-222566	33-61096	2.0–3.0	FILL	0.683 (J+)	0.125 (J+)	1.51 (J)	0.268 (J)	0.498 (J+)	0.0662	0.0871 (J+)	0.227 (J)	1.64 (J)	1.67 (J)	NA	NA
RE33-21-222567	33-61096	4.0–5.0	FILL	0.549 (J+)	—	1.37 (J)	—	0.343 (J+)	—	—	—	0.96 (J)	0.857 (J)	NA	NA
RE33-21-222568	33-61097	0.0–1.0	FILL	1.08 (J+)	0.223 (J+)	2.69 (J)	0.266 (J)	0.783 (J+)	0.0503 (J)	0.0503 (J+)	0.079 (J)	1.87 (J)	1.77 (J)	NA	NA
RE33-21-222569	33-61097	2.0–3.0	FILL	0.00402 (J+)	—	0.00914 (J)	—	0.00475 (J+)	—	—	—	0.00585 (J)	0.00621 (J)	NA	NA
RE33-21-222570	33-61097	4.0–5.0	FILL	0.039 (J+)	0.0106 (J+)	0.0868 (J)	—	0.039 (J+)	—	—	—	0.0549 (J)	0.0585 (J)	NA	NA
RE33-21-222571	33-61098	0.0–1.0	FILL	0.232 (J+)	0.0646 (J+)	0.475 (J)	0.0489 (J)	0.25 (J+)	0.0105 (J)	0.014 (J+)	0.0297 (J)	0.328 (J)	0.314 (J)	NA	NA
RE33-21-222572	33-61098	2.0–3.0	FILL	0.0154 (J+)	0.00479 (J+)	0.0298 (J)	0.00205 (J)	0.0164 (J+)	—	—	—	0.0164 (J)	0.0198 (J)	NA	NA
RE33-21-222573	33-61098	4.0–5.0	FILL	0.0156 (J+)	0.00452 (J+)	0.0337 (J)	0.00382 (J)	0.0167 (J+)	—	—	0.00243 (J)	0.0236 (J)	0.0226 (J)	NA	NA
RE33-21-222574	33-61099	0.0–1.0	FILL	0.502 (J+)	0.0913	0.808 (J+)	0.0456	0.383 (J+)	—	—	—	0.541 (J+)	0.888 (J+)	NA	NA
RE33-21-222575	33-61099	2.0–3.0	FILL	0.0377 (J+)	—	0.0753 (J+)	—	0.0308 (J+)	—	—	—	0.0548 (J+)	0.0616 (J+)	NA	NA

Table 4.8-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[1-]	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	Total PAHs	Trichloroethene
Construction Worker SSL[a]				**23,100**	**24**	**10,000**	**10,000**	**240**	**6060**	**1000**	**159**	**7530**	**7530**	**na[h]**	**6.90**
Industrial SSL[a]				**3230**	**3.23**	**33,700**	**33,700**	**32.3**	**813**	**3370**	**241**	**25,300**	**25,300**	**na**	**36.5**
Residential SSL[a]				**153**	**0.153**	**2320**	**2320**	**1.53**	**172**	**232**	**49.7**	**1740**	**1740**	**na**	**6.77**
RE33-21-222576	33-61099	4.0–5.0	FILL	0.0433 (J+)	0.00838	0.104 (J+)	0.0164	0.0353 (J+)	0.00419	0.00629	0.0185	0.101 (J+)	0.1 (J+)	NA	NA
RE33-21-222577	33-61100	0.0–1.0	FILL	3.37 (J+)	0.723	2.51 (J+)	0.103	3 (J+)	0.02 (J)	0.0167 (J)	0.0367	0.887 (J+)	3.84 (J+)	NA	NA
RE33-21-222578	33-61100	2.0–3.0	FILL	0.0225 (J+)	0.00478	0.0423 (J+)	0.00478	0.0198 (J+)	—	—	—	0.0369 (J+)	0.0441 (J+)	NA	NA
RE33-21-222579	33-61100	4.0–5.0	FILL	0.0173 (J+)	0.00449	0.0255 (J+)	0.00276 (J)	0.0186 (J+)	—	—	—	0.0228 (J+)	0.0335 (J+)	NA	NA

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED (2019, 700550) unless otherwise noted.

[b] Pyrene used as a surrogate based on structural similarity.

[c] Construction worker SSLs calculated using the equations outlined in NMED (2022, 702484), incorporating toxicity and chemical-specific parameters from EPA regional screening level (RSL) tables (https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables).

[d] Dibenzofuran used as a surrogate based on structural similarity.

[e] SSLs from EPA RSL tables (https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables).

[f] — = Not detected.

[g] NA = Not analyzed.

[h] na = Not available.

Table 4.8-2
Proposed Sampling and Analysis at SWMU 33-012(a)

Sampling Objective	Location Number	Location Description	Depth[a] (ft)	PCBs (SW-846:8082A[b])	Chromium (SW-846:6010D4.2-4[b])	PAHs (SW-846:8270-SIM_PAHS)
Define vertical extent of PCBs at location 33-61094	33-61094	Location 33-61094	6.0–7.0 8.0–9.0	X[c]	—[d]	—
Define lateral extent of PCBs around location 33-60661 and bound the planned excavation around locations 33-60661, 33-61094, 33-61095 and 33-61096	12a-1 through 12a-35	Step-outs from multiple locations	0–1.0 2.0–3.0 4.0–5.0	X	—	—
Define lateral extent of chromium and PAHs south and west of location 33-01086 and bound the planned excavation	12a-36 and 12a-37	Two step-outs from location 33-01086	0–1.0 2.0–3.0 4.0–5.0	—	X	X
Define lateral extent of PAHs around location 33-60659	12a-38 through 12a-43	Six step-outs from location 33-60659	0–1.0 2.0–3.0 4.0–5.0	—	—	X
Additional confirmation samples beneath planned excavations	To be determined	To be determined	0.0–1.0 beneath excavation 2.0–3.0 beneath excavation	To be determined	To be determined	To be determined

[a] Depths are below ground surface.
[b] Most recent promulgated, certified, and appropriate method will be used during field investigations.
[c] X = Analysis will be performed.
[d] — = Analysis will not be performed.

Table 4.9-1
Inorganic Chemicals above BVs at SWMU 33-017

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Silver	Sodium	Zinc
Soil Background Value[a]				**0.83**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**21,500**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**na**[b]	**na**	**1.52**	**1**	**915**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**14,500**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**na**	**na**	**0.3**	**1**	**2770**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**13,800**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**na**	**na**	**0.3**	**1**	**1470**	**60.2**
Construction Worker SSL[c]				**142**	**4390**	**72.1**	**na**	**134**[d]	**36.7**	**14,200**	**248,000**	**800**	**na**	**464**	**77.1**	**753**	**566,000**	**248**	**1750**	**1770**	**na**	**106,000**
Industrial SSL[c]				**519**	**255,000**	**1110**	**na**	**505**[d]	**388**	**51,900**	**908,000**	**800**	**na**	**160,000**	**389**	**25,700**	**2,080,000**	**908**	**6490**	**6490**	**na**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**70.5**	**na**	**96.6**[d]	**23.4**	**3130**	**54,800**	**400**	**na**	**10,500**	**23.5**	**1560**	**125,000**	**54.8**	**391**	**391**	**na**	**23,500**
RE33-20-190059	33-01102	2.0–3.0	FILL	—[e]	—	—	6910	—	—	—	—	—	—	—	—	—	—	—	1.63	—	—	—
RE33-20-190084	33-01102	4.0–5.0	FILL	1.02 (U)	—	—	6490	—	—	—	—	—	—	—	—	—	—	—	1.81	—	—	—
RE33-20-190035	33-01104	0.0–1.0	FILL	—	—	1.9	—	—	—	—	—	—	—	—	—	—	1.5	—	—	—	—	208
RE33-20-190060	33-01104	2.0–3.0	FILL	—	—	—	6180	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-190085	33-01104	4.0–5.0	FILL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-190036	33-01105	0.0–1.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	9.34	0.00155 (J)	—	—	—	—
RE33-20-190061	33-01105	2.0–3.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	1.85	—	—	—	—	—
RE33-20-190086	33-01105	4.0–5.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	3.19	0.000528 (J)	—	—	—	—
RE33-20-190062	33-01106	2.0–3.0	QBT3	1.15 (U)	—	—	—	18.2	—	5.82	—	—	—	—	—	—	—	—	0.915 (J)	2.09	—	—
RE33-20-190087	33-01106	4.0–5.0	QBT2	0.51 (U)	—	—	—	11.1	—	—	—	14.5 (J+)	—	—	—	—	—	—	0.957 (J)	6.7	—	—
RE33-20-190063	33-01107	2.0–3.0	QBT3	—	—	—	—	19.2	—	—	—	—	—	—	—	—	—	—	0.944 (J)	—	—	—
RE33-20-190088	33-01107	4.0–5.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.03 (J)	—	—	—
RE33-20-190039	33-01109	0.0–0.7	SOIL	—	—	—	—	—	—	16	—	24.5	—	—	—	—	1.54	—	—	—	—	93.5
RE33-20-190064	33-01109	2.0–3.0	QBT3	—	—	—	—	15.7	—	—	—	—	—	—	—	—	—	—	0.887 (J)	—	—	—
RE33-20-190089	33-01109	4.0–5.0	QBT3	—	—	—	3140	—	—	—	—	—	—	—	—	—	—	—	1.3	—	—	—
RE33-20-190040	33-01113	0.0–1.0	SED	—	—	0.504 (J)	—	—	—	25.9	—	30.5	—	—	—	—	1.08 (J)	—	0.423 (J)	—	—	142
RE33-20-190065	33-01113	2.0–3.0	QBT2	—	—	—	—	16.4	—	29.6	—	11.7	—	—	—	—	—	—	0.682 (J)	—	—	63.6
RE33-20-190090	33-01113	4.0–5.0	QBT2	0.962 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.822 (J)	—	—	—
RE33-20-190066	33-01114	2.0–3.0	QBT3	—	—	2.53	—	15.1	—	140	—	128	—	—	0.124	6.77	—	—	0.76 (J)	1.11	—	201
RE33-20-190091	33-01114	4.0–5.0	QBT3	—	65.1	3.62	—	12 (J+)	5.25	186	56,600	105	—	1350	—	—	—	—	0.874 (J)	—	—	436
RE33-20-190042	33-01116	0.0–1.0	SOIL	—	—	—	7050	—	—	—	—	—	—	—	—	—	7.64	0.00134 (J)	—	—	—	—
RE33-20-190067	33-01116	2.0–3.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.887 (J)	0.00312	—	—	—	—
RE33-20-190092	33-01116	4.0–5.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000675 (J)	—	—	—	—
RE33-20-190043	33-01120	0.0–1.0	FILL	1.26 (U)	—	—	—	—	—	19.3	—	22.5	—	—	—	—	—	0.0007 (J)	—	—	—	—

Table 4.9-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Silver	Sodium	Zinc
Soil Background Value[a]				**0.83**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**21,500**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**na[b]**	**na**	**1.52**	**1**	**915**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**14,500**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**na**	**na**	**0.3**	**1**	**2770**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**13,800**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**na**	**na**	**0.3**	**1**	**1470**	**60.2**
Construction Worker SSL[c]				**142**	**4390**	**72.1**	**na**	**134[d]**	**36.7**	**14,200**	**248,000**	**800**	**na**	**464**	**77.1**	**753**	**566,000**	**248**	**1750**	**1770**	**na**	**106,000**
Industrial SSL[c]				**519**	**255000**	**1110**	**na**	**505[d]**	**388**	**51,900**	**908,000**	**800**	**na**	**160,000**	**389**	**25,700**	**2,080,000**	**908**	**6490**	**6490**	**na**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**70.5**	**na**	**96.6[d]**	**23.4**	**3130**	**54,800**	**400**	**na**	**10,500**	**23.5**	**1560**	**125,000**	**54.8**	**391**	**391**	**na**	**23,500**
RE33-20-190068	33-01120	2.0–3.0	QBT3	—	56.8	—	3010	—	—	—	—	—	—	—	—	—	—	0.000617 (J)	1.36	—	—	—
RE33-20-190093	33-01120	4.0–5.0	QBT3	0.593 (U)	—	—	—	22.9 (J)	—	—	—	—	—	—	—	—	—	—	1.49	—	—	—
RE33-20-190044	33-01128	0.0–1.0	FILL	—	—	—	—	—	—	—	—	—	—	—	—	—	3.21	—	—	—	—	—
RE33-20-190069	33-01128	2.0–2.8	FILL	—	—	—	—	—	—	19.8	—	—	—	—	—	39.9	1.25	—	—	—	1190	—
RE33-20-190094	33-01128	4.0–5.0	QBT3	0.791 (U)	—	—	—	25.6	—	—	—	—	—	—	—	—	1.22	—	0.633 (J)	—	—	—
RE33-20-190045	33-01130	0.0–1.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	1.39	—	—	—	—	—
RE33-20-190070	33-01130	2.0–3.0	FILL	1 (U)	—	—	—	—	—	—	—	—	—	—	—	—	15.9	—	—	—	—	—
RE33-20-190095	33-01130	4.0–5.0	FILL	—	—	—	—	—	—	—	—	—	—	—	—	—	5.47	—	—	—	—	—
RE33-20-190046	33-01135	0.0–1.0	SOIL	—	—	—	—	—	—	—	—	31	—	—	—	—	3.84	0.000661 (J)	—	—	—	—
RE33-20-190071	33-01135	2.0–3.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	0.808 (J)	0.000801 (J)	1.11	—	—	—
RE33-20-190096	33-01135	4.0–5.0	QBT3	—	—	—	—	22.4 (J+)	—	—	—	—	—	—	—	—	—	0.000716 (J)	1.05	—	—	—
RE33-20-190047	33-01145	0.0–1.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	0.129	—	57.2	0.00926	—	—	—	—
RE33-20-190072	33-01145	2.0–3.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	1.85	0.00141 (J)	1.15	—	—	—
RE33-20-190097	33-01145	4.0–5.0	QBT3	—	—	—	—	29.7	—	—	—	—	—	—	—	—	8.04	0.0022	0.8 (J)	—	—	—
RE33-20-190048	33-01146	0.0–1.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	1.38 (J)	—	—	—	—	—
RE33-20-190073	33-01146	2.0–3.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00236	—	—	—	—
RE33-20-190098	33-01146	4.0–5.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	1 (J)	0.00405	—	—	—	—
RE33-20-190049	33-01152	0.0–1.0	SOIL	1.02 (U)	—	—	—	—	—	—	—	—	—	—	—	—	14.1	—	—	—	—	—
RE33-20-190074	33-01152	2.0–3.0	QBT3	—	—	—	2380	—	—	—	—	—	—	—	—	—	1.17	—	0.5 (J)	—	—	—
RE33-20-190099	33-01152	4.0–5.0	QBT3	0.802 (U)	—	—	—	14.5	—	—	—	—	—	—	—	—	0.801 (J)	—	0.601 (J)	—	—	—
RE33-20-190050	33-01156	0.0–1.0	SOIL	—	—	—	6290	—	—	—	—	—	—	—	—	—	1.31	—	—	—	—	—
RE33-20-190075	33-01156	2.0–3.0	QBT3	—	—	—	—	14.8	—	—	—	—	—	—	—	—	—	0.000598 (J)	1.41	—	—	—
RE33-20-190100	33-01156	4.0–5.0	QBT3	1.22 (U)	—	—	—	20.8	—	—	—	—	—	—	—	—	0.604 (J)	0.0028	1.04	—	—	—
RE33-20-190051	33-01166	0.0–0.2	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	1.48	—	—	—	—	—
RE33-20-190076	33-01166	2.0–3.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.981	—	—	—
RE33-20-190101	33-01166	4.0–5.0	QBT3	—	—	—	2350	14.8	—	—	—	—	—	—	—	—	—	—	1.19	—	—	—

Table 4.9-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Silver	Sodium	Zinc
Soil Background Value[a]				**0.83**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**21,500**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**na[b]**	**na**	**1.52**	**1**	**915**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**14,500**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**na**	**na**	**0.3**	**1**	**2770**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**13,800**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**na**	**na**	**0.3**	**1**	**1470**	**60.2**
Construction Worker SSL[c]				**142**	**4390**	**72.1**	**na**	**134[d]**	**36.7**	**14,200**	**248,000**	**800**	**na**	**464**	**77.1**	**753**	**566,000**	**248**	**1750**	**1770**	**na**	**106,000**
Industrial SSL[c]				**519**	**255000**	**1110**	**na**	**505[d]**	**388**	**51,900**	**908,000**	**800**	**na**	**160,000**	**389**	**25,700**	**2,080,000**	**908**	**6490**	**6490**	**na**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**70.5**	**na**	**96.6[d]**	**23.4**	**3130**	**54,800**	**400**	**na**	**10,500**	**23.5**	**1560**	**125,000**	**54.8**	**391**	**391**	**na**	**23,500**
RE33-20-190052	33-01604	0.0–1.0	FILL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE33-20-190077	33-01604	2.0–3.0	FILL	0.882 (U)	—	—	—	—	—	—	—	—	—	—	—	—	0.901 (J)	—	1.55	—	—	—
RE33-20-190102	33-01604	4.0–5.0	FILL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.961 (J)	—	—	—	—	—
RE33-20-190053	33-01606	0.0–1.0	FILL	—	—	0.45 (J)	—	—	—	45.7 (J+)	—	—	—	—	—	—	0.769 (J)	—	—	—	—	147
RE33-20-190078	33-01606	2.0–3.0	FILL	—	—	—	15,500	—	—	—	—	—	—	—	—	—	0.741 (J)	—	1.65	—	—	—
RE33-20-190103	33-01606	4.0–5.0	FILL	—	—	—	—	—	—	—	—	—	—	—	—	—	1.26	—	—	—	—	—
RE33-20-190054	33-01607	0.0–1.0	FILL	1.37 (U)	—	—	—	—	—	—	—	—	—	—	—	—	1.08 (J)	—	—	—	—	—
RE33-20-190079	33-01607	2.0–3.0	FILL	—	—	—	8620	—	—	15.2	—	—	—	—	—	—	1.87	—	—	—	—	—
RE33-20-190104	33-01607	4.0–5.0	FILL	—	—	—	10,600	—	—	—	—	—	—	—	—	—	1.58	—	—	—	—	—
RE33-20-190080	33-01612	2.0–3.0	QBT3	—	—	—	—	8.78 (J+)	—	—	—	—	—	—	—	—	—	—	0.821 (J)	—	—	—
RE33-20-190105	33-01612	4.0–5.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	0.103	—	—	—	0.803 (J)	—	—	—
RE33-20-190056	33-01614	0.0–1.0	FILL	0.892 (U)	—	6.91	—	—	—	63.8 (J+)	—	40.2	—	—	—	—	13.6	0.0193	—	—	—	110
RE33-20-190081	33-01614	2.0–3.0	FILL	—	—	—	8790	—	—	—	—	—	—	—	—	—	22	0.0265	—	—	—	—
RE33-20-190106	33-01614	4.0–5.0	FILL	—	—	—	—	—	—	—	—	—	—	—	—	—	35.4	0.00713	—	—	952	—
RE33-20-190057	33-01615	0.0–1.0	FILL	—	—	—	6910	—	—	34.8 (J+)	—	32.4	—	—	—	—	4.55	0.00631	—	—	—	69
RE33-20-190082	33-01615	2.0–3.0	FILL	—	—	—	7240	—	—	—	—	—	—	—	—	—	4.61	0.0124	—	—	—	—
RE33-20-190107	33-01615	4.0–5.0	FILL	—	—	—	7200	—	—	—	—	—	—	—	—	—	17.1	0.00487	—	—	—	—
RE33-20-190058	33-01616	0.0–1.0	SOIL	1.11 (U)	—	1.09	—	—	—	46.5	—	76.4	—	—	0.155	—	2.13	0.000964 (J)	—	25.9	—	179
RE33-20-190083	33-01616	2.0–3.0	QBT2	—	—	—	—	17.1	—	—	—	—	—	—	—	—	—	—	0.953 (J)	—	—	—
RE33-20-190108	33-01616	4.0–5.0	QBT2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.91 (J)	—	—	—
RE33-20-190109	33-60616	0.0–1.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	1.64	—	—	—	—	—
RE33-20-190114	33-60616	2.0–3.0	QBT3	0.984 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.762 (J)	—	—	—
RE33-20-190119	33-60616	4.0–5.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.863 (J)	—	—	—
RE33-20-190110	33-60617	0.0–1.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00131 (J)	0.937 (J)	—	—	—
RE33-20-190115	33-60617	2.0–3.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	—	—	—
RE33-20-190120	33-60617	4.0–5.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000623 (J)	1.07	—	—	—

Table 4.9-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Silver	Sodium	Zinc
Soil Background Value[a]				**0.83**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**21,500**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**na[b]**	**na**	**1.52**	**1**	**915**	**48.8**
Qbt 2,3,4 Background Value[a]				**0.5**	**46**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**14,500**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**na**	**na**	**0.3**	**1**	**2770**	**63.5**
Sediment Background Value[a]				**0.83**	**127**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**13,800**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**na**	**na**	**0.3**	**1**	**1470**	**60.2**
Construction Worker SSL[c]				**142**	**4390**	**72.1**	**na**	**134[d]**	**36.7**	**14,200**	**248,000**	**800**	**na**	**464**	**77.1**	**753**	**566,000**	**248**	**1750**	**1770**	**na**	**106,000**
Industrial SSL[c]				**519**	**255000**	**1110**	**na**	**505[d]**	**388**	**51,900**	**908,000**	**800**	**na**	**160,000**	**389**	**25,700**	**2,080,000**	**908**	**6490**	**6490**	**na**	**389,000**
Residential SSL[c]				**31.3**	**15,600**	**70.5**	**na**	**96.6[d]**	**23.4**	**3130**	**54,800**	**400**	**na**	**10,500**	**23.5**	**1560**	**125,000**	**54.8**	**391**	**391**	**na**	**23,500**
RE33-20-190111	33-60618	0.0–1.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	0.955 (J)	—	0.885 (J)	—	—	—
RE33-20-190116	33-60618	2.0–3.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9 (J)	—	—	—
RE33-20-190121	33-60618	4.0–5.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000696 (J)	0.952 (J)	—	—	—
RE33-20-190112	33-60619	0.0–1.0	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1 (J)	—	—	—	—	—
RE33-20-190117	33-60619	2.5–3.5	QBT3	0.998 (U)	—	—	—	14	—	—	—	—	—	—	—	—	—	—	0.864 (J)	—	—	—
RE33-20-190122	33-60619	4.0–5.0	QBT3	—	—	—	—	25.2 (J+)	—	—	—	—	—	—	—	—	—	0.00301	1.54	—	—	—
RE33-20-190113	33-60620	0.0–1.0	QBT2	—	—	—	—	—	—	—	—	—	—	—	—	—	1.26	0.00054 (J)	1.22	—	—	—
RE33-20-190118	33-60620	2.0–3.0	QBT2	—	—	—	—	—	—	—	—	—	—	—	—	—	0.909 (J)	—	1.38	—	—	—
RE33-20-190123	33-60620	4.0–5.0	QBT2	—	—	—	—	31.2	—	—	—	—	—	—	—	—	0.871 (J)	—	1.44	—	—	—
RE33-21-217922	33-60982	0.0–1.0	SOIL	1.7 (J)	—	—1.18	—	—	—	49.1	—	126	—	—	0.105	—	NA[f]	NA	—	39.9	—	173
RE33-21-222611	33-60982	2.0–3.0	QBT3	0.851 (J)	—	—	—	—	—	6.06 (J+)	—	—	2050 (J)	—	—	—	NA	NA	1.73	—	—	—
RE33-21-222612	33-60982	4.0–5.0	QBT3	0.612 (J)	—	—	—	—	—	—	—	—	—	—	—	—	NA	NA	1.6	—	—	—
RE33-21-217923	33-60983	0.0–1.0	SOIL	—	—	—0.608	—	—	—	19	—	45	—	—	—	—	NA	NA	—	7.69	—	135
RE33-21-222613	33-60983	2.0–3.0	QBT3	0.917 (U)	—	—	—	—	—	5.41	—	—	—	—	—	—	NA	NA	1.63	—	—	—
RE33-21-222614	33-60983	4.0–5.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	NA	NA	1.76	—	—	—
RE33-21-217924	33-60984	0.0–1.0	SOIL	0.915 (J)	—	—1.09		19.9 (J+)	—	71.3	—	304	—	—	0.12	—	NA	NA	—	72.9	—	171
RE33-21-222615	33-60984	2.0–3.0	QBT3	—	—	—	—	—	—	8.74 (J+)	—	25.6 (J+)	—	—	—	—	NA	NA	1.54	4.73 (J)	—	—
RE33-21-222616	33-60984	4.0–5.0	QBT3	—	—	—	—	—	—	14.7 (J+)	—	37.4 (J+)	—	—	—	—	NA	NA	1.58	3.09 (J)	—	—
RE33-21-217925	33-60985	0.0–1.0	SOIL	1.82 (U)	—	—1.09	—	—	—	47.4	—	124	—	—	0.162	—	NA	NA	—	38.6	—	189
RE33-21-222617	33-60985	2.0–3.0	QBT3	0.761 (J)	—	—	—	—	—	—	—	—	—	—	—	—	NA	NA	1.72	—	—	—
RE33-21-222618	33-60985	4.0–5.0	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	NA	NA	1.67	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] BVs from LANL (1998, 059730).

[b] na = Not available.

[c] SSLs from NMED (2019, 700550) unless otherwise noted.

[d] SSL for total chromium.

[e] — = Not detected or not detected above BV.

[f] NA = Not analyzed.

Table 4.9-2
Proposed Sampling and Analysis at SWMU 33-017

Sampling Objective	Location Number	Location Description	Depth[a] (ft)	Lead (SW-846:6010D[b])
Define lateral extent of lead at location 33-60984	17-1 through 17-5	5-ft and 10-ft step-outs north and east of location 33-60984	0.0–1.0 2.0–3.0 4.0–5.0	X[c]

[a] Depths are below ground surface, unless specified otherwise.

[b] Most recent promulgated, certified, and appropriate method will be used during field investigations.

[c] X = Analysis will be performed.

Table 4.10-1
Organic Chemicals above BVs at AOC C-33-001

Sample ID	Location ID	Depth (ft)	Media	Aroclor-1254	Aroclor-1260
Construction Worker SSL[a]				**4.91**	**85.3**
Industrial SSL[a]				**11**	**11.1**
Residential SSL[a]				**1.14**	**2.43**
0333-96-2042	33-01748	0.0–0.5	FILL	—[b]	0.15
RE33-20-190414	33-01748	0.0–1.0	FILL	—	0.661
RE33-20-190415	33-01748	2.0–3.0	QBT3	—	0.0218
RE33-20-190416	33-01748	4.0–5.0	QBT3	—	0.016
RE33-21-218013	33-01749	0.4–1.4	QBT3	—	12 (J-)
RE33-20-190418	33-01749	2.0–3.0	QBT3	—	1.88
RE33-20-190419	33-01749	4.0–5.0	QBT3	—	0.786
0333-96-2045	33-01751	0.0–0.5	SOIL	—	3.9
RE33-20-190420	33-01751	0.0–1.0	FILL	—	13.5
RE33-20-190421	33-01751	2.0–3.0	QBT3	—	2.49
RE33-20-190422	33-01751	4.0–5.0	QBT3	—	1.84
0333-96-2046	33-01752	0.0–0.5	FILL	—	6.2
RE33-20-190423	33-01752	0.0–0.7	FILL	—	0.064
RE33-20-190424	33-01752	2.0–3.0	QBT3	—	0.0246
RE33-20-190425	33-01752	4.0–5.0	QBT3	—	0.00137 (J)
RE33-20-190435	33-60700	0.0–0.6	FILL	—	0.00241 (J)
RE33-21-222597	33-61102	0.0–1.0	QBT3	—	3.09
RE33-21-222598	33-61102	2.0–3.0	QBT3	—	0.0951
RE33-21-222599	33-61102	4.0–5.0	QBT3	—	0.0459
RE33-21-222600	33-61103	0.0–0.8	FILL	—	233 (J-)
RE33-21-222601	33-61103	2.0–3.0	QBT3	—	39 (J-)
RE33-21-222602	33-61103	4.0–5.0	QBT3	—	2.45
RE33-21-222603	33-61104	0.0–1.0	FILL	—	38.9 (J-)
RE33-21-222604	33-61104	2.0–3.0	QBT3	—	4.02 (J+)
RE33-21-222605	33-61104	4.0–5.0	QBT3	—	0.392
RE33-21-222606	33-61105	0.0–1.0	FILL	—	11.6 (J-)

Table 4.10-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aroclor-1254	Aroclor-1260
Construction Worker SSL[a]				**4.91**	**85.3**
Industrial SSL[a]				**11**	**11.1**
Residential SSL[a]				**1.14**	**2.43**
RE33-21-222607	33-61105	2.0–3.0	QBT3	1.98	3.4
RE33-21-222608	33-61105	4.0–5.0	QBT3	—	2.18

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED (2019, 700550) unless otherwise noted.

[b] — = Not detected.

Table 4.10-2
Proposed Sampling and Analysis at AOC C-33-001

Sampling Objective	Location Number	Location Description	Depth[a] (ft)	PCBs (SW-846:8082A[b])
Define extent of PCBs at location 33-01751 and bound the planned excavation	1-1 through 1-13	Thirteen step-outs around location 33-01751	0–1.0 2.0–3.0 4.0–5.0	X[c]
Define extent of PCBs at locations 33-61105 and 33-01749 and bound the planned excavation	1-14 through 1-24	Eleven step-outs around location 33-61105 and 33-01749	0–1.0 2.0–3.0 4.0–5.0	X
Additional confirmation samples beneath planned excavation	To be determined	To be determined	0.0–1.0 beneath excavation 2.0–3.0 beneath excavation	X

[a] Depths are below ground surface.

[b] Most recent promulgated, certified, and appropriate method will be used during field investigations.

[c] X = Analysis will be performed.

Table 5.0-1
Summary of Investigation Methods

Method	Summary
Spade-and-Scoop Collection of Soil Samples	This method is typically used to collect shallow (e.g., approximately 0–12 in.) soil or sediment samples. The spade-and-scoop method involves digging a hole to the desired depth, as prescribed in the sampling and analysis plan, and collecting a discrete grab sample. The sample for VOC analysis is transferred immediately from the sampler to the sample container to minimize the loss of VOCs during the sample collection process. Containers for VOC samples are filled as completely as possible, leaving no or minimal headspace, and sealed with a Teflon-lined cap. The remaining sample material is typically placed in a clean stainless-steel bowl for transfer into various sample containers.
Hand-Auger Sampling	This method is typically used for sampling soil or sediment at depths of less than 10–15 ft but may in some cases be used for collecting samples of weathered or nonwelded tuff. The method involves hand-turning a stainless-steel bucket auger (typically 3–4 in. inside diameter), creating a vertical hole that can be advanced to the desired sampling depth. When the desired depth is reached, the auger is decontaminated before the hole is advanced to the sampling depth. The sample for VOC analysis is transferred immediately from the sampler to the sample container to minimize the loss of VOCs during the sample collection process. Containers for VOC samples are filled as completely as possible, leaving no or minimal headspace, and sealed with a Teflon-lined cap. The remaining sample material is transferred from the auger bucket to a stainless-steel sampling bowl before the various required sample containers are filled.
Hollow-Stem Auger Drilling Methods	In this method, hollow-stem augers (sections of seamless pipe with auger flights welded to the pipe) act as a screw conveyor to bring cuttings of sediment, soil, and/or rock to the surface. Auger sections are typically 5 ft in length and have outside diameters of 4.25 to 14 in. Drill rods, split-spoon core barrels, Shelby tubes, and other samplers can pass through the center of the hollow-stem auger sections for collection of discrete samples from desired depths. Hollow-stem augers are used as temporary casings when setting wells to prevent cave-ins of the borehole walls. If samples are to be collected for VOC analysis, the sampler will collect the VOC first before homogenization. Material will then be field screened, visually inspected, and placed in a stainless-steel bowl. Samples for the remaining analysis will then be transferred to appropriate sample containers, depending on the analytical method requirement.
Handling, Packaging, and Shipping of Samples	Field team members seal and label samples before packing and ensure that the sample containers and the containers used for transport are free of external contamination. Field team members package all samples so as to minimize the possibility of breakage during transportation. N3B radiological control technicians perform and document a free-release survey of the exterior of the sample containers, and perform a U.S. Department of Transportation shipping survey. After all environmental samples are collected, packaged, preserved, and surveyed, a field team member transports the samples either to the SMO or to an SMO-approved radiation screening laboratory under chain of custody (COC). The SMO arranges to ship samples to the analytical laboratories. The field team member must inform the SMO and/or the radiation screening laboratory coordinator when levels of radioactivity are in the action-level or limited-quantity ranges. The SMO will coordinate with the CH-TRU (Contact-Handled Transuranic [Waste]) Program to ship any limited-quantity samples.

Table 5.0-1 (continued)

Method	Summary
Sample Control and Field Documentation	The collection, screening, and transport of samples are documented on standard forms generated by the SMO. These include sample container labels and combined sample collection log (SCL)/COC forms. Sample collection portions of the combined forms will be completed at the time of sample collection and signed by the sampler and a reviewer who will verify the logs for completeness and accuracy. The COC portions of the combined forms will be completed and signed to verify the samples are not left unattended. Corresponding labels will be applied to each sample container, and custody seals will be placed around container lids or openings. Site attributes (e.g., former and proposed soil sampling locations, sediment sampling locations) are located by using a GPS. Horizontal locations will be measured to the nearest 0.5 ft. The survey results for this field event will be presented as part of the investigation report. Sample coordinates will be uploaded into the Sample Management Database.
Field Quality-Control Samples	Field QC samples are collected as follows. *Field duplicate*: At a frequency of 10%; collected at the same time as a regular sample and submitted for the same analyses. *Field rinsates*: At a frequency of 10%; collected by rinsing sampling equipment with deionized water, which is collected in a sample container and submitted for laboratory analysis of inorganic chemicals. *Field Trip blanks (FTBs)*: Required for all field events that include the collection of samples for VOC analysis. FTBs are containers of certified clean sand that are opened and kept with the other sample containers during the sampling process. FTBs are collected at a frequency of one per day when samples are collected for VOC analysis.
Field Decontamination of Drilling and Sampling Equipment	Dry decontamination is the preferred method to minimize generating liquid waste. Dry decontamination may include using a wire brush or other tool to remove soil or other material adhering to the sampling equipment, followed by using a commercial cleaning agent (nonacid, waxless cleaner) and paper wipes. Dry decontamination may be followed by wet decontamination if necessary. Wet decontamination may include washing with a nonphosphate detergent and water, followed by a water rinse and a second rinse with deionized water. Alternatively, steam-cleaning may be used.
Containers and Preservation of Samples	Specific requirements/processes for sample containers, preservation techniques, and holding times are based on EPA guidance for environmental sampling, preservation, and QA. Specific requirements for each sample are printed on the SCLs provided by the SMO (size and type of container [glass, amber glass], polyethylene, preservative, etc.). All samples are preserved by placing them in insulated containers with ice to maintain a temperature of ≤6°C. Other requirements such as nitric acid or other preservatives may apply to different media or analytical requests.
Management, Characterization, and Storage of Waste	Waste is managed, characterized, and stored in accordance with an approved waste characterization strategy form that documents site history, field activities, and the characterization approach for each waste stream managed. Waste characterization complies with on-site or off-site waste acceptance criteria. All stored waste will be marked with appropriate signage and labels, as appropriate. Drummed waste will be stored on pallets to prevent deterioration of the containers. Waste generators are required to reduce the volume of waste generated as much as technically and economically feasible. Means of storing, controlling, and transporting each potential waste type and classification will be determined before waste-generating field operations begin. A waste storage area will be established before waste is generated. Waste storage areas located in controlled areas of the Laboratory will be controlled as needed to prevent inadvertent addition or management of wastes by unauthorized personnel. Each container of waste generated will be individually labeled as to waste classification, item identification number, and radioactivity (if applicable), immediately following containerization. All waste shall be segregated by classification and compatibility to prevent cross-contamination. Appendix B describes waste management.

Table 5.0-1 (continued)

Method	Summary
Geodetic Surveys	This method describes the procedure for coordinating and evaluating geodetic surveys and establishing QA and QC for geodetic survey data. The procedure covers evaluating geodetic survey requirements, preparing to perform a geodetic survey, performing geodetic survey field activities, preparing geodetic survey data for QA review, performing QA review of geodetic survey data, and submitting geodetic survey data.
Radiological Surveys	The proposed radiological surveys are described in detail in Appendix C. The FIDLER and Ludlum NaI detectors will be used to determine areas with elevated radioactivity.

Table 5.10-1
Summary of Analytical Methods

Analyte	Analytical Method
TAL metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, zinc)	SW-846:6010D; SW-846:6020B; SW-846:7471B (mercury)
Total cyanide	SW-846:9012B
Perchlorate	SW-846:6850
Nitrate	SW-846:9056A
PCBs	SW-846:8082A
SVOCs	SW-846:8270E
VOCs	SW-846:8260D
Gamma-emitting radionuclides	EPA:901.1
Isotopic plutonium	HASL-300:ISOPU
Isotopic uranium	HASL-300:ISOU
Tritium	EPA 906.0
pH	SW-846:9045D
Explosive compounds	SW-846:8330B
PAHs	SW-846:8270-SIM

Appendix A

Acronyms and Abbreviations,
Metric Conversion Table, and Data Qualifier Definitions

A-1.0 ACRONYMS AND ABBREVIATIONS

AK	acceptable knowledge
AOC	area of concern
BMP	best management practice
bgs	below ground surface
BMP	best management practice
BV	background value
CFR	Code of Federal Regulations
CH-TRU	Contact-Handled Transuranic (Waste) (N3B Program)
COC	chain of custody
Consent Order	Compliance Order on Consent
COPC	chemical of potential concern
D&D	decontamination and decommissioning
DOE	Department of Energy (U.S.)
DU	depleted uranium
EIM	Environmental Information Management (database)
EPA	Environmental Protection Agency (U.S.)
ER	Environmental Restoration (Program)
FV	fallout value
FTB	field trip blank
GPR	ground-penetrating radar
GPS	Global Positioning System
HE	high explosives
HP	Hot Point
IA	interim action
IP	individual permit
LANL	Los Alamos National Laboratory
LLW	low-level waste
MDA	material disposal area
MLLW	mixed low-level waste
N3B	Newport News Nuclear BWXT-Los Alamos, LLC
NMED	New Mexico Environment Department
NMSA	New Mexico Statutes Annotated
NRAO	National Radio Astronomy Observatory

PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PID	photoionization detector
PPE	personal protective equipment
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
RDX	Royal Demolition Explosive (hexahydro-1,3,5-trinitro-1,3,5-triazine)
RFI	RCRA facility investigation
RSL	regional screening level
SAA	satellite accumulation area
SAL	screening action level
SCL	sample collection log
SMA	site-monitoring area
SMO	Sample Management Office
SOP	standard operating procedure
SSL	soil screening level
SVOC	semivolatile organic compound
SWMU	solid waste management unit
TA	technical area
TAL	target analyte list
TCE	trichloroethene
TNT	trinitrotoluene[2,4,6-]
TSCA	Toxic Substances Control Act
VCA	voluntary corrective action
VCP	vitrified clay pipe
VOC	volatile organic compound
WAC	waste acceptance criteria
WCSF	waste characterization strategy form

A-2.0 METRIC CONVERSION TABLE

Multiply SI (Metric) Unit	by	To Obtain U.S. Customary Unit
kilometers (km)	0.622	miles (mi)
kilometers (km)	3281	feet (ft)
meters (m)	3.281	feet (ft)
meters (m)	39.37	inches (in.)
centimeters (cm)	0.03281	feet (ft)
centimeters (cm)	0.394	inches (in.)
millimeters (mm)	0.0394	inches (in.)
micrometers or microns (µm)	0.0000394	inches (in.)
square kilometers (km^2)	0.3861	square miles (mi^2)
hectares (ha)	2.5	acres
square meters (m^2)	10.764	square feet (ft^2)
cubic meters (m^3)	35.31	cubic feet (ft^3)
kilograms (kg)	2.2046	pounds (lb)
grams (g)	0.0353	ounces (oz)
grams per cubic centimeter (g/cm^3)	62.422	pounds per cubic foot (lb/ft^3)
milligrams per kilogram (mg/kg)	1	parts per million (ppm)
micrograms per gram (µg/g)	1	parts per million (ppm)
liters (L)	0.26	gallons (gal.)
milligrams per liter (mg/L)	1	parts per million (ppm)
degrees Celsius (°C)	9/5 + 32	degrees Fahrenheit (°F)

A-3.0 DATA QUALIFIER DEFINITIONS

Data Qualifier	Definition
R	The data is unusable. (Note: Analyte may or may not be present.)
J	The analyte was positively identified, the associated numerical value is the approximate concentration of the analyte in the sample.
J-	The analyte was positively identified, the associated numerical value is the approximate concentration of the analyte in the sample, but likely to have a low bias.
J+	The analyte was positively identified, the associated numerical value is the approximate concentration of the analyte in the sample, but likely to have a high bias.
UJ	The analyte was analyzed for but not detected. The associated value is an estimate.
U	The analyte was analyzed for but not detected above the reported estimated quantitation limit.
NQ	The analyte was detected at or above the required detection level, no qualification is necessary.

Appendix B

Waste Management Plan

B-1.0 INTRODUCTION

This appendix describes how waste generated during the Chaquehui Canyon Aggregate Area Phase III investigation will be managed. Waste may include, but is not limited to, drill cuttings, excavated media, excavated man-made debris, contact waste, decontamination fluids, and all other waste that has potentially come into contact with contaminants.

B-2.0 WASTE STREAMS

All waste generated during investigation activities will be managed in accordance with the current version of the standard operating procedure (SOP) N3B-AP-TRU-2150, "Waste Characterization Strategy Form." This SOP incorporates the requirements of all applicable U.S. Environmental Protection Agency (EPA) and New Mexico Environment Department (NMED) regulations and U.S. Department of Energy orders.

A waste characterization strategy form (WCSF) will be prepared and approved per requirements of N3B-AP-TRU-2150, "Waste Characterization Strategy Form." The WCSF will provide detailed information on waste characterization methods, management, containerization, and potential volumes. Waste characterization is completed through review of sampling data and/or documentation, or by direct sampling of the waste or the media being investigated (e.g., surface soil, subsurface soil, etc.). Waste characterization may include a review of historical information and process knowledge to identify whether listed hazardous waste may be present (i.e., due diligence reviews). If low levels of listed hazardous waste are identified, a "contained in" determination may be submitted for approval to NMED. Data currently available for the sites addressed in this work plan identify polychlorinated biphenyl (PCB) concentrations greater than 50 mg/kg at Area of Concern (AOC) C-33-001 and Solid Waste Management Unit (SWMU) 33-004(i). When AOC C-33-001 and SWMU 33-004(i) are remediated, Newport News Nuclear BWXT-Los Alamos, LLC (N3B) will submit a request to EPA (with a copy to NMED) to manage the waste as PCB remediation waste.

Wastes will be containerized and placed in clearly marked, appropriately constructed waste accumulation areas. Waste accumulation area postings, regulated storage duration, and inspection requirements will be based on the type of waste and its classification. Container and storage requirements, as well as transportation and disposal requirements, will be detailed in the WCSF and approved before waste is generated. Table B-2.0-1 summarizes the estimated waste streams, waste types, waste volumes, and other data.

The waste streams that are anticipated to be generated during work plan implementation are described below.

B-2.1 Drill Cuttings

Hollow-stem auger sampling or other drilling methods may be needed to collect subsurface samples during the Phase III investigation. Drill cuttings consist of soil and tuff/rock chips generated by the drilling of boreholes for the intent of sampling. Drill cuttings include excess core samples not submitted for analysis and any returned samples sent for analysis. Drill cuttings will be containerized in IP-1 bags, 55-gal. drums, B-12 containers, or other appropriate containers at the point of generation. The initial management of the cuttings will rely on the data from previous investigations and/or process knowledge. Drill cuttings will be managed in secure, designated areas appropriate to the type of the waste. If new analytical data change the expected waste category, the waste will be managed in accumulation areas appropriate to the final waste determination. This waste stream will be characterized based either on

direct sampling of the waste or on the results from core samples collected during drilling. The WCSF will specify the sampling suites for direct sampling of the waste stream. Additional constituents may be analyzed as necessary to meet the waste acceptance criteria (WAC) for a receiving facility or if visual observations indicate that additional contaminants may be present.

Cuttings will be land-applied if they meet the criteria in the NMED-approved "Notice of Intent Decision Tree for Land Application of Investigation-Derived Waste Solids from Construction of Wells and Boreholes." N3B expects that cuttings will be land-applied or disposed of in accordance with the approved WCSF. Table B-2.0-1 presents the estimated volumes, characterization and management methods, and expected disposition of this waste stream.

B-2.2 Excavated Environmental Media

Layback and overburden spoils (including environmental media mixed with buried debris) will consist of soil and rock removed from within or next to (e.g., from benching to stabilize a trench) areas within the SWMU or AOC to be excavated. This material will be field screened for radioactivity and volatile organic compounds (VOCs) during the excavation process. If contamination is not detected during screening, the spoils will be stored either in rolloff bins or other suitable containers or on the ground surface with appropriate best management practices. If field screening indicates the potential for contamination, the layback and overburden spoils will be placed in rolloff bins or other suitable containers. The spoils will remain within the area of contamination boundary of the SWMU or AOC from which they were excavated, awaiting analytical results. Incremental samples of the spoils will be collected as the spoils are excavated, or the media may be sampled in piles or containers. A minimum of one sample will be collected for every 100 yd^3. The samples will be analyzed for VOCs; target analyte list metals; nitrate, explosive compounds, and perchlorate, if screening and/or process knowledge indicates the presence of explosives; radionuclides; and toxicity characteristic metals, as needed. Other constituents may be analyzed as necessary to meet the WAC for a receiving facility. If process knowledge, odors, or staining indicates the soils may be contaminated with petroleum products, the materials will also be analyzed for total petroleum hydrocarbons and PCBs. If the spoils are determined to be suitable for reuse (i.e., meet residential cleanup standards as determined using NMED's and DOE's soil screening guidance), N3B may use the soil to backfill the excavations. If the spoils are not suitable for reuse, they will be treated/disposed of at an authorized facility appropriate for the waste regulatory classification. Based on existing data, N3B expects spoils that cannot be reused to be designated as industrial waste or low-level waste (LLW); however, the waste may also be classified as hazardous waste, mixed low-level waste (MLLW), or PCB waste. All wastes will be treated/disposed of at an authorized on-site or off-site facility appropriate for the waste classification.

B-2.3 Excavated Man-Made Debris

Excavated man-made debris will be generated from the removal of the former landfill at SWMU 33-008(c). Debris will be segregated as it is excavated based on factors such as the type of debris, the type of alternative treatment technology that would be used to treat the debris, field screening, process knowledge, and/or staining or odors. Where practicable, this waste stream will be characterized by direct sampling of the waste (e.g., concrete). Direct samples will be analyzed for VOCs, semivolatile organic compounds, explosive compounds, radionuclides, total metals, and, if needed, toxicity characteristic metals. Other constituents may be analyzed as necessary to meet the WAC for a receiving facility or if process knowledge or visual observations indicate other contaminants may be present (e.g., PCBs or asbestos). For debris that is difficult to characterize, acceptable knowledge (AK) will be used whenever possible, supplemented by sampling as needed. Sampling methods will often have to be identified on a

case-by-case basis by qualified sampling personnel and all decisions will be documented in the field activity notebook.

Waste minimization will be implemented, where practicable, through segregation of waste materials. Nonhazardous materials that can be shown to have no detectable activity for radionuclides or that can be decontaminated to meet this criterion, will be recycled, if practicable.

B-2.4 Contact Waste

The contact waste stream consists of potentially contaminated materials that "contacted" waste during sampling and excavation. This waste stream consists primarily of, but is not limited to, personal protective equipment such as gloves, decontamination wastes such as paper wipes, and disposable sampling supplies. Characterization of this waste stream will use AK of the waste materials, the methods of generation, and analysis of the material contacted (e.g., drill cuttings, soil). Contact waste generated within an area of contamination will initially be placed in containers and managed within the area. If contact waste is generated at a location that is not within the area of contamination, the initial management of waste will rely on the data from previous investigations and/or process knowledge. It will be managed in secure, designated areas appropriate to the type of the waste. If new analytical data change the expected waste category, the waste will be managed in accumulation areas appropriate to the final waste determination. N3B expects most of the contact waste to be designated industrial waste or LLW; however, the waste may also be classified as hazardous waste, MLLW, or PCB waste. All wastes will be treated/disposed of at an authorized on-site or off-site facility appropriate for the waste classification.

B-2.5 Decontamination Fluids

The decontamination fluids waste stream will consist of liquid wastes from decontamination activities (i.e., decontamination solutions and rinse waters). Consistent with waste minimization practices, N3B employs dry equipment decontamination methods to the extent possible. If dry decontamination cannot be performed, liquid decontamination wastes will be collected in containers at the point of generation. The decontamination fluids will be characterized through AK of the waste materials, the levels of contamination measured in the environmental media (e.g., the results of the associated drill cuttings), and, if necessary, direct sampling of the containerized waste. If directly sampled, samples will be analyzed for the analytical suites specified in the WCSF. N3B expects most of these wastes to be nonhazardous, nonradioactive liquid waste that will be sent to facilities with a WAC allowing the waste to be received. Table B-2.0-1 presents the characterization and management methods and expected disposition of this waste stream.

Table B-2.0-1
Summary of Estimated Waste Generation and Management

Waste Stream	Expected Waste Type	Characterization Method	On-Site Management	Expected Disposition
Drill cuttings	Industrial waste, nonhazardous, nonradioactive	Analytical results from direct sampling of waste or core samples	Accumulation in 55-gal. drums, IP-1 bags, B-12 containers, or other appropriate containers	Land application, permitted off-site facility for which waste meets acceptance criteria
Excavated environmental media	Industrial waste, LLW, MLLW, PCB	Analytical results from direct sampling of waste or core samples	Accumulation in 55-gal. drums, IP-1 bags, or other appropriate containers	Land application, permitted off-site facility for which waste meets acceptance criteria
Excavated man-made debris	Industrial waste, LLW, MLLW, PCB	AK; analytical results from direct sampling of waste	Accumulation in 55-gal. drums, IP-1 bags, or other appropriate containers	Permitted off-site facility for which waste meets acceptance criteria
Contact waste	Industrial waste, LLW, MLLW, PCB	AK	Accumulation in 55-gal. drums	Permitted off-site facility for which waste meets acceptance criteria
Decontamination fluids	Industrial waste, nonhazardous, nonradioactive	AK; analytical results from direct sampling of waste	Accumulation in 30-gal. plastic drums	Treatment at permitted facility for which waste meets acceptance criteria

Appendix C

Radiological and Geophysical Walkover Survey Reports
(on CD included with this document)

N3B RECORDS	
Media Information Page	
This is a placeholder page for a record that cannot be uploaded or would lose meaning or content if uploaded. The record can be requested through regdocs@em-la.doe.gov	
Document Date: 9/14/2023	**EM ID number:** 702897-01
Document Title: Appendix C Submittal of the Phase III Investigation Work Plan for Chaquehui Canyon Aggregate Area	☒ **No restrictions** ☐ **UCNI** ☐ **Copyrighted**
Media type and quantity: 1 CD	**Software and version required to read media:** Adobe Acrobat 9.0
Other document numbers or notes: Files are too numerous and large to upload.	

PLATE 1 Chaquehui Canyon Aggregate Area

- Existing sampling location
- ? MDA K vapor monitoring well
- Major road
- Fence
- Paved road
- Former structure
- TA Boundary
- LANL Boundary
- Terrain contour, 20-ft interval
- SWMU or AOC
- Canyon reach
- Structure
- Chaquehui Canyon aggregate area

New Mexico State Plane Coordinate System Central Zone (3002)
North American Datum, 1983 (NAD 83)

US Survey Ft

GIS: Dave Frank, david.frank@em-la.doe.gov, 551-2945
Created: 03-March-2021
Last Opened: Tuesday, February 1, 2022

File: plate_21-0003-01_overall_site_plate_dff

DISCLAIMER: This map was created for work processes associated with the LLCC. All other uses for this map should be confirmed with N3B staff.

0 500 1,000 2,000
Feet

1628000.00 1630000.00 1632000.00 1634000.00 1636000.00 1638000.00 1640000.00 1642000.00 1644000.00 1646000.00 1648000.00 1650000.00

1746000.00 1744000.00 1742000.00 1740000.00 1738000.00 1736000.00 1734000.00

CHAQUEHUI CANYON

AOC 33-010(e)
SWMU 33-004(d)
SWMU 33-004(g)
AOC C-33-003
SWMU 33-004(a)
SWMU 33-007(c)
SWMU 33-009
SWMU 33-004(e)
AOC 33-012(b)
AOC 33-012(c)
AOC C-33-001
AOC 33-012(d)
SWMU 33-008(c)
33-60939
SWMU 33-004(i)
SWMU 33-015
33-60940
SWMU 33-013
SWMU 33-010(f)
33-60938
SWMU 33-005(b)
SWMU 33-005(a)
SWMU 33-011(a)
SWMU 33-011(d)
SWMU 33-005(c)
SWMU 33-017
SWMU 33-004(h)
SWMU 33-012(a)
SWMU 33-011(e)
SWMU 33-002(e)
SWMU 33-002(a)
SWMU 33-002(c)
SWMU 33-002(b)
SWMU 33-002(d)
SWMU 33-004(f)
SWMU 33-016
CHTH-1
SOUTH SITE
ENTRANCE ROAD
INDUSTRY
AOC 33-011(b)
SWMU 33-004(m)
CH-1
SWMU 33-008(a)
SWMU 33-007(b)
SWMU 33-010(h)
SWMU 33-014
SWMU 33-011(c)
SWMU 33-004(b)
SWMU 33-010(g)
SWMU 33-006(a)
SWMU 33-004(j)
SWMU 33-001(d)
SWMU 33-001(c)
SWMU 33-010(c)
SWMU 33-001(a)
SWMU 33-001(b)
SWMU 33-001(e)
CH-2

Bandelier National Monument

TA-70
TA-33



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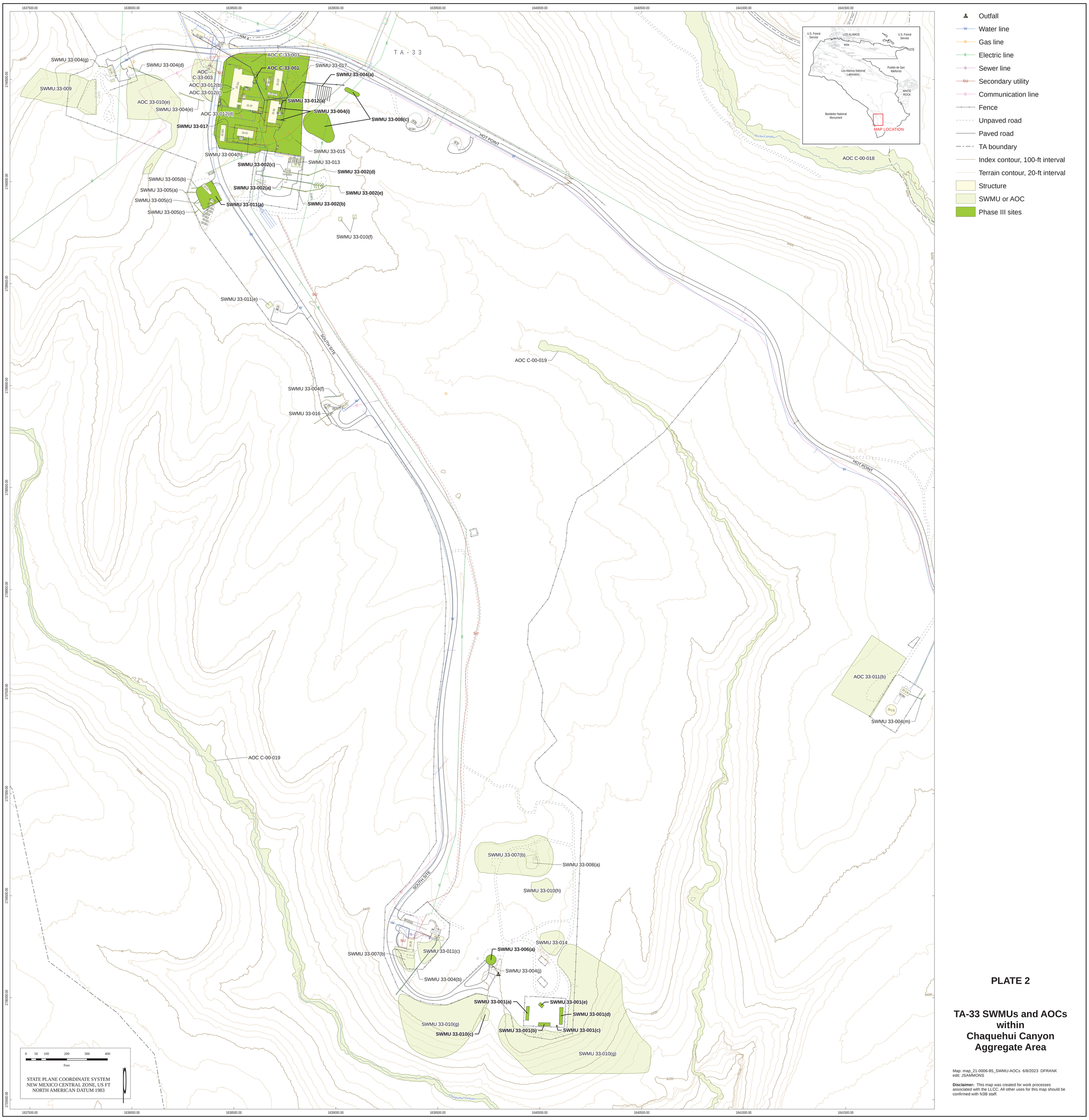
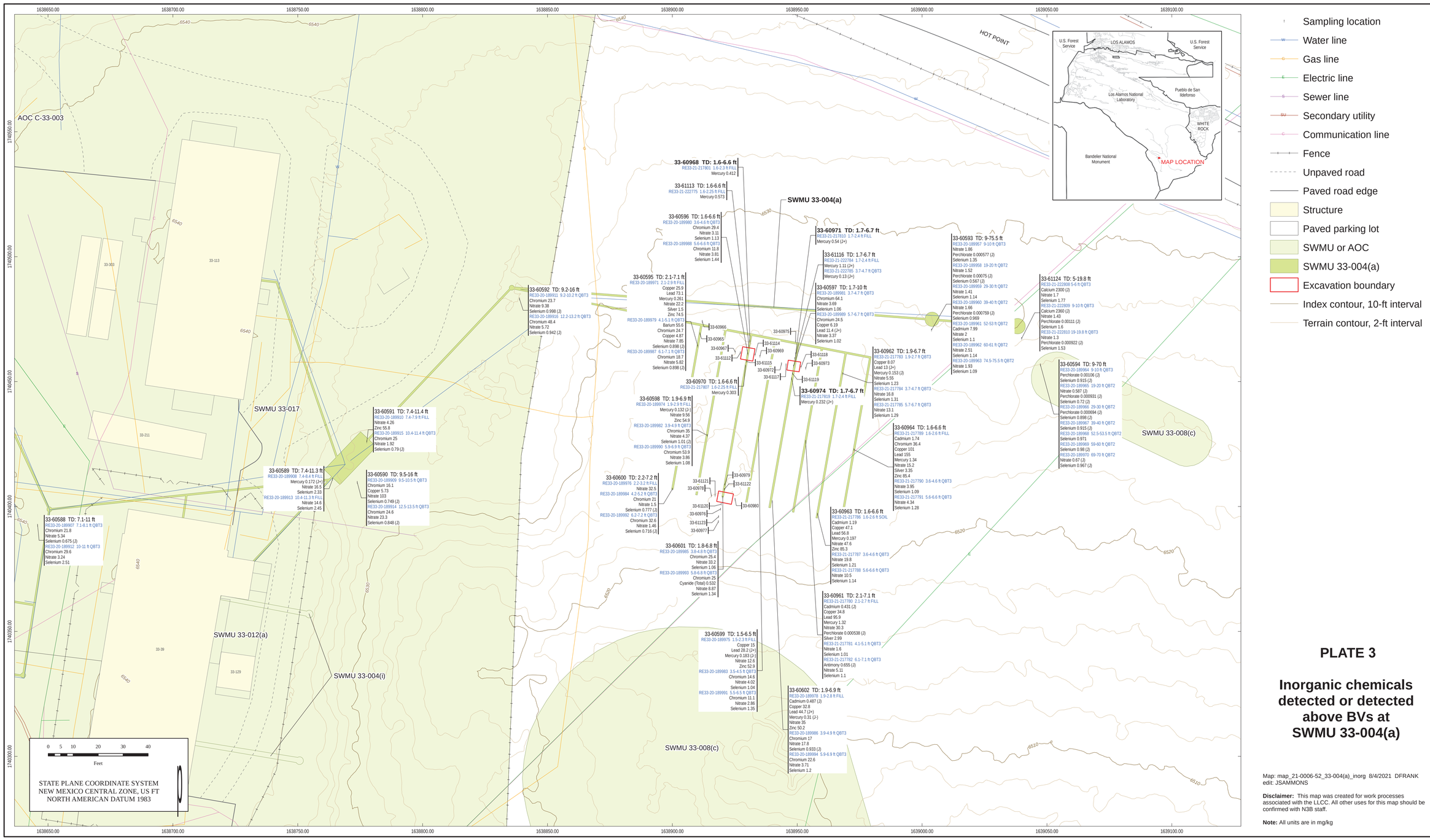


PLATE 2

TA-33 SWMUs and AOCs within Chaquehui Canyon Aggregate Area

Map: map_21-0006-85_SWMU-AOCs 6/8/2023 DFRANK
edit: JSAMMONS

Disclaimer: This map was created for work processes associated with the LLCC. All other uses for this map should be confirmed with N3B staff.



Sampling location
Water line
Gas line
Electric line
Sewer line
Secondary utility
Communication line
Fence
Unpaved road
Paved road edge
Structure
Paved parking lot
SWMU or AOC
SWMU 33-004(a)
Excavation boundary
Index contour, 10-ft interval
Terrain contour, 2-ft interval

PLATE 3

Inorganic chemicals detected or detected above BVs at SWMU 33-004(a)

Map: map_21-0006-52_33-004(a)_inorg 8/4/2021 DFRANK
edit: JSAMMONS

Disclaimer: This map was created for work processes associated with the LLCC. All other uses for this map should be confirmed with N3B staff.

Note: All units are in mg/kg

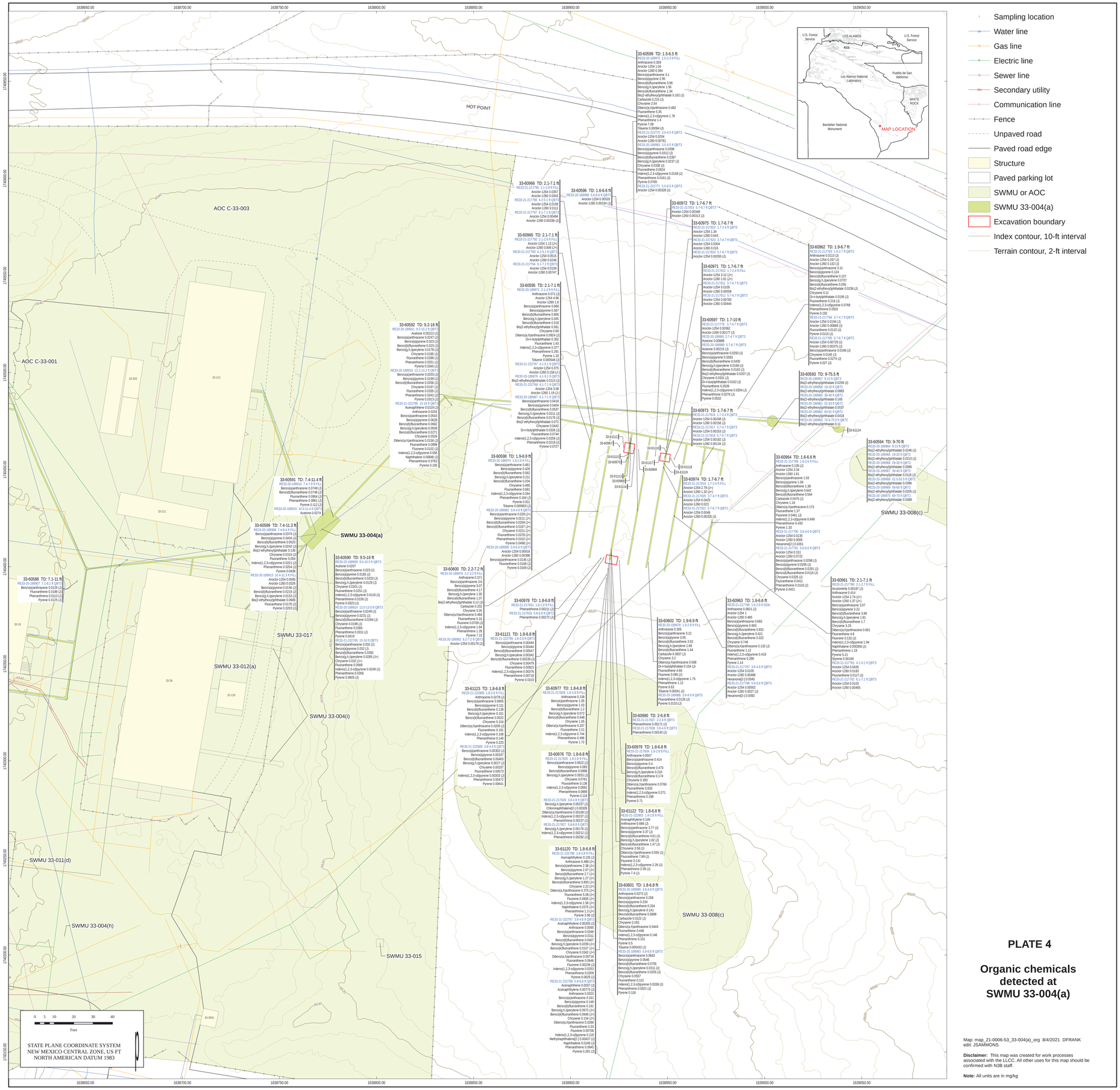


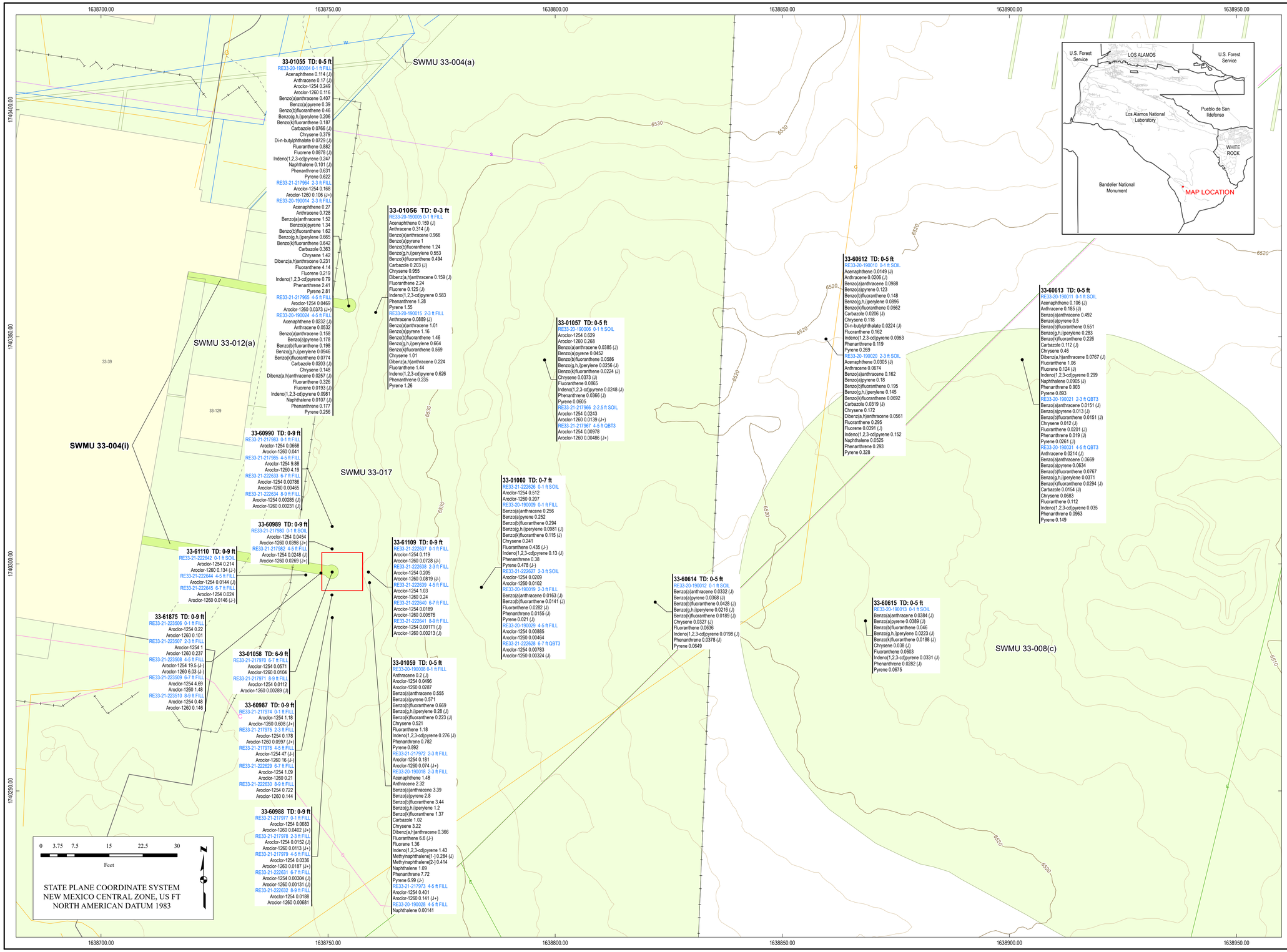
PLATE 4

Organic chemicals detected at SWMU 33-004(a)

Map: map_21-0006-53_33-004(a)_org 8/4/2021 DFRANK
edit: JSAMMONS

Disclaimer: This map was created for work processes associated with the LLCC. All other uses for this map should be confirmed with N3B staff.

Note: All units are in mg/kg



- Sampling location
- Water line
- Gas line
- Electric line
- Sewer line
- Communication line
- Landscape feature
- Fence
- Unpaved road
- Paved road edge
- Structure
- SWMU or AOC
- SWMU 33-004(i)
- Excavation boundary
- Index contour, 10-ft interval
- Terrain contour, 2-ft interval

PLATE 5

Organic chemicals detected at SWMU 33-004(i)

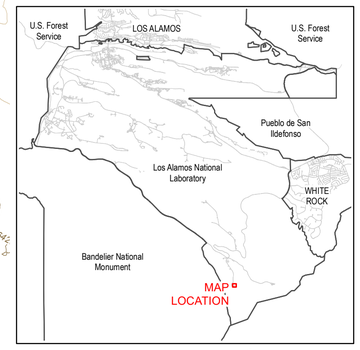
Map: map_21-0006-45_33-004(i)_org 8/4/2021 DFRANK
edit: JSAMMONS

Disclaimer: This map was created for work processes associated with the LLCC. All other uses for this map should be confirmed with N3B staff.

Note: All units are in mg/kg

1639500.00 1639600.00 1639700.00 1639800.00 1639900.00 1640000.00

1736400.00 1736300.00 1736200.00 1736100.00 1736000.00



33-60421 33-60952 33-60945 33-60946 33-60947 33-61072 33-61073 33-61075 33-60416 33-61074 33-60948 33-60951 6a-1 6a-2 6a-3 6a-4 6a-5 6a-6 6a-7 6a-8 33-60414 33-60420 33-60419 6a-9 6a-10 33-61068 6a-11 6a-12 33-61071 33-60415 33-61070 33-61069 33-61076 33-61079 33-60417 33-61078 33-61077 SWMU 33-006(a) 6a-13 6a-14 6a-15 6a-16 33-60950 33-26 SWMU 33-004(j) 33-60949 33-60418 33-60422 33-60953 33-60954 33-60955 6a-17 6a-18 6a-19 6a-20 33-60958 6a-21 6a-22 33-60957 6a-23 6a-24 33-61081 33-60423 33-60943 33-60944 33-60942 33-60941 33-61082 33-61080 33-61083 6a-25 6a-26 33-60959 6a-27 6a-28 33-60960 6a-29 6a-30 6a-31 6a-32 SOUTH SITE SWMU 33-010(g) SWMU 33-010(c)

6420 6440 6400

- Existing sampling location
- Proposed sampling location
- Water line
- Electric line
- Sewer line
- Secondary utility
- Communication line
- Landscape feature
- Fence
- Unpaved road
- Paved road edge
- Structure
- SWMU or AOC
- SWMU 33-006(a)
- Phase II excavation boundary
- Index contour, 20-ft interval
- Terrain contour, 2-ft interval

Map: map_21-0006-89_locations_33-006(a)_proposed
7/19/2023 DFRANK
edit: JSAMMONS

Disclaimer: This map was created for work processes associated with the LLCC. All other uses for this map should be confirmed with N3B staff.

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Feet

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NEW MEXICO CENTRAL ZONE, US FT
NORTH AMERICAN DATUM 1983

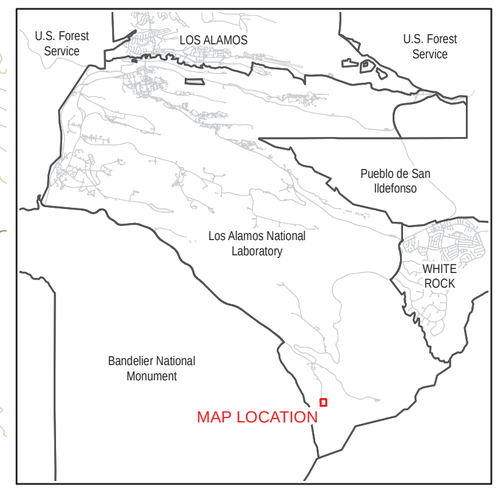
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PLATE 6

Site map and proposed sampling locations at SWMU 33-006(a)

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1736400.00 1736200.00 1736000.00 1735800.00



33-60421 TD: 0-3 ft
RE33-20-186639 0-1 ft SOIL
Copper 82.7
Nitrate 1.17
RE33-20-186641 2-3 ft QBT3
Barium 123
Calcium 2270
Chromium 9.68
Cobalt 3.36
Copper 6.34
Nickel 7.52
Selenium 1.18

33-60952 TD: 0.8-3.8 ft
RE33-21-217613 0.8-1.8 ft QBT3
Selenium 1.37
RE33-21-217614 2.8-3.8 ft QBT3
Selenium 1.19

33-61075 TD: 0-3.5 ft
RE33-21-222077 0-0.5 ft FILL
Copper 28 (J-)
RE33-21-222079 0.5-1.5 ft QBT3
Copper 6.9 (J-)

33-60945 TD: 1-4 ft
RE33-21-217597 1-2 ft FILL
Nitrate 0.689 (J)
RE33-21-217598 3-4 ft QBT3
Calcium 4950
Magnesium 2630 (J+)
Nitrate 0.603 (J)
Selenium 1.21

33-61072 TD: 0-4 ft
RE33-21-222065 0-1 ft SOIL
Copper 62.8 (J-)
RE33-21-222067 1-2 ft QBT3
Copper 10.7 (J-)

33-60946 TD: 1-4 ft
RE33-21-217599 1-1.5 ft FILL
Copper 123 (J-)
Nitrate 0.937 (J)
RE33-21-217600 3-4 ft QBT3
Barium 60.4
Calcium 33800
Copper 6.42 (J-)
Magnesium 3820 (J+)
Nitrate 0.775 (J)
Perchlorate 0.00186
Selenium 1.07

33-60416 TD: 0-3 ft
RE33-20-186634 2-3 ft QBT3
Chromium 10
Selenium 1.21

33-61073 TD: 0-4 ft
RE33-21-222071 1-2 ft QBT3
Copper 7.06 (J-)

33-60947 TD: 1-3.8 ft
RE33-21-217601 1-2 ft FILL
Lead 30.7
Nitrate 0.654 (J)
RE33-21-217602 3-3.8 ft FILL
Nitrate 1.55
Perchlorate 0.00103 (J)

33-61074 TD: 0-3.5 ft
RE33-21-222073 0-0.5 ft SOIL
Copper 24.5 (J-)
RE33-21-222075 0.5-1.5 ft QBT3
Copper 12.5 (J-)

33-60948 TD: 0.2-3.2 ft
RE33-21-217603 0.2-1.2 ft QBT3
Copper 5.22 (J-)
Selenium 1.43
RE33-21-217605 2.2-3.2 ft QBT3
Perchlorate 0.00048 (J)
Selenium 1.33

33-61079 TD: 0-3 ft
RE33-21-222095 0-1 ft QBT3
Copper 19.7

33-61076 TD: 0-2.4 ft
RE33-21-222081 0-0.4 ft SOIL
Copper 48.6
RE33-21-222083 0.4-1.4 ft QBT3
Copper 5.94

33-60951 TD: 1-4 ft
RE33-21-217611 1-2 ft QBT3
Selenium 1.21
RE33-21-217612 3-4 ft QBT3
Selenium 1.44

33-61068 TD: 0-7.8 ft
RE33-21-222049 0-1 ft FILL
Copper 432 (J)
RE33-21-222050 2-3 ft FILL
Copper 139 (J)
RE33-21-222051 4.8-5.8 ft QBT3
Copper 5.94 (J)
RE33-21-222052 6.8-7.8 ft QBT3
Copper 4.94 (J)

SWMU 33-006(a)

33-60414 TD: 0-3 ft
RE33-20-186626 0-1 ft FILL
Calcium 8180 (J)
Copper 102 (J+)

33-60417 TD: 2-3 ft
RE33-20-186635 2-3 ft QBT3
Chromium 17.3
Selenium 1.39

33-61077

33-60419 TD: 0-3 ft
RE33-20-186631 0-1 ft SOIL
Copper 392 (J+)
Nitrate 1.55
Zinc 58.4
RE33-20-186637 2-3 ft SOIL
Copper 48.9 (J+)

33-61078 TD: 0-2.2 ft
RE33-21-222089 0-0.2 ft SOIL
Copper 602
RE33-21-222091 0.2-1.2 ft QBT3
Copper 13.5
RE33-21-222092 2.2-3.2 ft QBT3
Copper 5.37

33-60420 TD: 0-3 ft
RE33-20-186638 0-1 ft SOIL
Nitrate 0.902 (J)
Perchlorate 0.000568 (J)
RE33-20-186640 2.2-3 ft QBT3
Selenium 1.04

33-61071 TD: 0-7 ft
RE33-21-222061 0-1 ft FILL
Copper 367 (J)
RE33-21-222062 2-3 ft FILL
Copper 67.5 (J)
RE33-21-222063 4-5 ft QBT3
Copper 12.7 (J)
RE33-21-222064 6-7 ft QBT3
Copper 13.3 (J-)

33-61069 TD: 0-7.8 ft
RE33-21-222053 0-1 ft FILL
Copper 1500 (J)
RE33-21-222054 2-3 ft FILL
Copper 112 (J)
RE33-21-222055 4.8-5.8 ft QBT3
Copper 10 (J)

33-60422 TD: 0-2.9 ft
RE33-20-186642 0-1 ft FILL
Nitrate 1.17
RE33-20-186650 2-2.9 ft FILL
Perchlorate 0.00247

33-60949 TD: 1-4 ft
RE33-21-217607 1-2 ft SOIL
Nitrate 0.651 (J)
RE33-21-217608 3-4 ft SOIL
Perchlorate 0.00231

33-60415

33-60950 TD: 1-4 ft
RE33-21-217609 1-1.5 ft SOIL
Copper 113 (J-)
RE33-21-217610 3-4 ft QBT3
Copper 14.5 (J-)
Selenium 0.948 (J)

33-61070 TD: 0-6.8 ft
RE33-21-222058 2-3 ft FILL
Copper 97.1 (J)
RE33-21-222059 3.8-4.8 ft QBT3
Copper 8.89 (J)

33-60953 TD: 0.2-3.2 ft
RE33-21-217615 0.2-1.2 ft QBT3
Selenium 1.29
RE33-21-217617 2.2-3.2 ft QBT3
Selenium 1.31

33-60954 TD: 0.4-3.4 ft
RE33-21-217619 0.4-1.4 ft QBT3
Selenium 1.21
RE33-21-217620 2.4-3.4 ft QBT3
Selenium 1.46

33-60418 TD: 0-3 ft
RE33-20-186630 0-1 ft SOIL
Copper 385 (J+)
Lead 36.8
Nitrate 0.736 (J)
Zinc 54.3
RE33-20-186636 2-3 ft QBT3
Chromium 21.7
Copper 37.5 (J+)
Selenium 1.09

33-60955 TD: 0.3-3.3 ft
RE33-21-217621 0.3-1.3 ft QBT3
Selenium 0.993 (J)
RE33-21-217622 2.3-3.3 ft QBT3
Selenium 0.988 (J)

33-60958 TD: 0-5.2 ft
RE33-21-217651 0-1 ft SED
Copper 2660 (J)
RE33-21-217655 2-2.2 ft SED
Copper 378 (J)
RE33-21-217595 2.2-3.2 ft QBT3
Copper 34.9

33-60941 TD: 0-7 ft
RE33-21-217581 0-1 ft SOIL
Copper 39.3
RE33-21-217584 6-7 ft QBT3
Copper 4.94

33-60942 TD: 0-8.5 ft
RE33-21-217585 0-1 ft SOIL
Copper 100
RE33-21-217587 5.5-6.5 ft QBT3
Copper 12.4
RE33-21-217588 7.5-8.5 ft QBT3
Copper 5.55

33-60957 TD: 0-5 ft
RE33-21-217650 0-1 ft SED
Copper 1510 (J)
RE33-21-217658 2-3 ft QBT3
Copper 910 (J)
RE33-21-217662 4-5 ft QBT3
Copper 17.7 (J)

33-60944 TD: 0-3.1 ft
RE33-21-217593 0-0.1 ft SOIL
Copper 295
RE33-21-217663 0.1-1.1 ft QBT3
Copper 24.1

33-61080 TD: 0-6.8 ft
RE33-21-222097 0-1 ft SOIL
Copper 534 (J-)
RE33-21-222099 3.8-4.8 ft QBT2
Copper 6.29 (J-)
RE33-21-222100 5.8-6.8 ft QBT2
Copper 8.1 (J-)

33-60943 TD: 0-4 ft
RE33-21-217589 0-1 ft SOIL
Copper 1790
RE33-21-217591 1-2 ft QBT3
Copper 19.9
RE33-21-217592 3-4 ft QBT3
Copper 6.29

33-61083 TD: 0-5.5 ft
RE33-21-222109 0-1 ft SOIL
Copper 176
RE33-21-222110 2-2.5 ft SOIL
Copper 140
RE33-21-222111 2.5-3.5 ft QBT2
Copper 80.6
RE33-21-222112 4.5-5.5 ft QBT2
Copper 17.9

33-61082 TD: 0-5.5 ft
RE33-21-222105 0-1 ft SOIL
Copper 390 (J-)
RE33-21-222106 2-2.5 ft SOIL
Copper 87.3 (J-)
RE33-21-222107 2.5-3.5 ft QBT2
Copper 90.3 (J-)
RE33-21-222108 4.5-5.5 ft QBT2
Copper 9.65 (J-)

33-61081 TD: 0-5 ft
RE33-21-222101 0-1 ft SOIL
Copper 290 (J-)
RE33-21-222103 2-3 ft QBT2
Copper 46.4 (J-)
RE33-21-222104 4-5 ft QBT2
Copper 7.91 (J-)

33-60959 TD: 0-3.5 ft
RE33-21-217652 0-0.5 ft FILL
Copper 110 (J-)
RE33-21-217660 0.5-1.5 ft QBT3
Copper 24.2 (J-)
RE33-21-217664 2.5-3.5 ft QBT3
Copper 13.2 (J-)

33-60960 TD: 0-5.3 ft
RE33-21-217653 0-1 ft SOIL
Copper 83.9
RE33-21-217657 2-2.3 ft SOIL
Copper 39.1
RE33-21-217661 2.3-3.3 ft QBT3
Copper 53.5
RE33-21-217665 4.3-5.3 ft QBT2
Copper 14.3

33-60423 TD: 0-7 ft
RE33-21-217579 3-4 ft QBT3
Copper 141 (J)
RE33-21-217580 5-6 ft QBT3
Copper 28.6 (J)
RE33-21-222048 6-7 ft QBT2
Copper 15.9 (J-)

SWMU 33-004(b)
SWMU 33-011(c)
SWMU 33-014
SWMU 33-010(c)
SWMU 33-010(g)
SWMU 33-001(e)
SWMU 33-001(a)
SWMU 33-001(b)
SOUTH SITE
33-24
33-26

0 12.5 25 50 75 100
Feet

STATE PLANE COORDINATE SYSTEM
NEW MEXICO CENTRAL ZONE, US FT
NORTH AMERICAN DATUM 1983

- Sampling location
- Structure
- SWMU or AOC
- SWMU 33-006(a)
- Excavation boundary
- Water line
- Electric line
- Sewer line
- Secondary utility
- Communication line
- Fence
- Unpaved road
- Index contour, 20-ft interval
- Terrain contour, 2-ft interval

Map: map_21-0006-41_33-006(a)_inorganic 8/4/2021 DFRANK
edit: JSAMMONS

Disclaimer: This map was created for work processes associated with the LLCC. All other uses for this map should be confirmed with N3B staff.

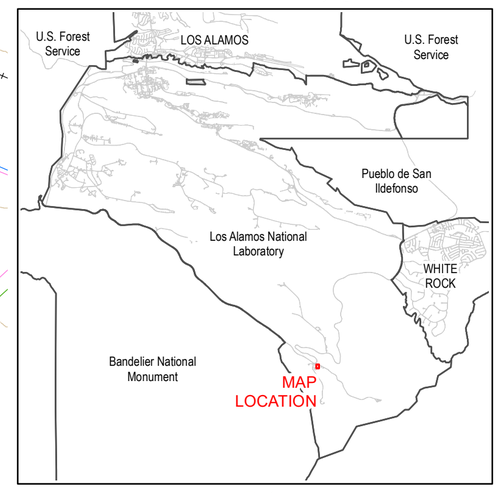
Note: All units are in mg/kg

PLATE 7

Inorganic chemicals detected or detected above BVs at SWMU 33-006(a)

1638900.00 1639000.00 1639100.00

1740500.00 1740400.00 1740300.00 1740200.00



SWMU 33-017

SWMU 33-004(a)

SWMU 33-008(c)

SWMU 33-008(c)

33-60676 33-60677 33-60678 33-60679 33-60680 33-60682 33-60683

33-01670 33-01672 33-01674 33-01675 33-01680 33-01681 33-01682 33-01684 33-01685

33-61952 33-61953 33-61954 33-61955 33-61956 33-61957 33-61958 33-61959 33-61960 33-61961 33-61962 33-61963 33-61964 33-61965 33-61966 33-61967 33-61968 33-61969 33-61970 33-61971 33-61972 33-61973 33-61974 33-61975 33-61976 33-61977 33-61978 33-61979 33-61980 33-61981 33-61982

8c-1 8c-2 8c-3 8c-4 8c-5 8c-6 8c-7 8c-8 8c-9 8c-10 8c-11 8c-12 8c-13 8c-14 8c-15 8c-16 8c-17 8c-18 8c-19 8c-20 8c-21 8c-22 8c-23 8c-24 8c-25 8c-26

6520 6500

0 5 10 20 30 40
Feet

STATE PLANE COORDINATE SYSTEM
NEW MEXICO CENTRAL ZONE, US FT
NORTH AMERICAN DATUM 1983

N

- Existing sampling location
- Proposed sampling location
- Water line
- Gas line
- Electric line
- Communication line
- Fence
- Paved road edge
- SWMU or AOC
- SWMU 33-008(c)
- Phase II excavation boundary
- Planned excavation boundary
- Index contour, 20-ft interval
- Terrain contour, 2-ft interval

Map: map_21-0006-90_locations_33-008(c)_proposed
7/19/2023 DFRANK

Disclaimer: This map was created for work processes associated with the LLCC. All other uses for this map should be confirmed with N3B staff.

PLATE 8

Site map and proposed sampling locations at SWMU 33-008(c)

1638900.00 1639000.00 1639100.00

1740400.00 1740300.00 1740200.00

SWMU 33-017

SWMU 33-004(a)

SWMU 33-004(a)

SWMU 33-008(c)

SWMU 33-008(c)

33-60676 TD: 0-7 ft
RE33-20-190354 5-6 ft QBT3
Chromium 10.4
Selenium 1.12

33-60677 TD: 0-6 ft
RE33-20-190355 5-6 ft QBT3
Antimony 0.906 (J)
Calcium 2260
Chromium 25.2
Selenium 0.926 (J)

33-61952 TD: 0-10 ft
RE33-21-224217 0-1 ft SOIL
Copper 33.2 (J)
Mercury 0.159
Zinc 91.9
RE33-21-224218 5-6 ft QBT3
Copper 13.5 (J)
RE33-21-224219 9-10 ft QBT3
Copper 8.86 (J)

33-01671 TD: 0-6 ft
RE33-21-217928 1.8-2.8 ft QBT3
Copper 56.9 (J)
Lead 39.8 (J)
Zinc 64.1 (J)

33-01684 TD: 0-10 ft
RE33-20-190378 5-6 ft QBT3
Barium 62.6
Calcium 5800
Chromium 17.8
Copper 12 (J)
Selenium 0.767 (J)
RE33-20-190379 9-10 ft QBT3
Chromium 11.1 (J+)
Copper 5.49
Selenium 0.79 (J)

33-01673 TD: 0-3 ft
RE33-21-217938 2-3 ft QBT3
Copper 27.8
Lead 16.4 (J)

33-61964 TD: 0-10 ft
RE33-21-224253 0-1 ft SOIL
Copper 1260 (J)
Lead 143 (J)
Mercury 0.338
Zinc 557
RE33-21-224254 5-6 ft QBT3
Copper 27.7 (J)
Lead 17.8 (J)
Zinc 66.8
RE33-21-224255 9-10 ft QBT3
Copper 31.7 (J)
Lead 20.7 (J)
Zinc 83.5

33-01680 TD: 0-10 ft
RE33-21-217940 6-7 ft QBT3
Copper 226
Lead 87.4 (J)
Mercury 0.952
Zinc 238
RE33-20-190370 9-10 ft QBT3
Copper 164 (J)
Lead 48.8 (J+)
Mercury 0.172
Selenium 0.962 (J)

33-61953 TD: 0-10 ft
RE33-21-224220 0-1 ft FILL
Copper 2650 (J)
Lead 245 (J)
Mercury 1.95 (J)
Zinc 1270 (J)
RE33-21-224221 5-6 ft QBT3
Copper 6320 (J)
Lead 1110 (J)
Mercury 0.456 (J)
Zinc 1840 (J)
RE33-21-224222 9-10 ft QBT3
Copper 22.1 (J)
Lead 92.9 (J)

33-61679 TD: 0-10 ft
RE33-20-190365 0-1 ft SOIL
Cadmium 0.401 (J)
Copper 26.7 (J)
Silver 4.53
Zinc 119
0333-96-0673 0-2 ft SOIL
Copper 24.6
Uranium 3.22
Zinc 114
0333-96-0674 3-5 ft SOIL
Uranium 2.3
RE33-20-190366 5-6 ft QBT3
Chromium 23
Selenium 0.847 (J)
0333-96-0675 5-7 ft Qbt3
Chromium 7.8
Copper 5 (J)
RE33-20-190367 9-10 ft QBT3
Chromium 8.05 (J+)
Selenium 0.868 (J)

33-61963 TD: 0-10 ft
RE33-21-224250 0-1 ft SOIL
Copper 151 (J)
Lead 67.4 (J)
Mercury 1.76
Zinc 304
RE33-21-224251 5-6 ft QBT3
Copper 13.7 (J)
RE33-21-224252 9-10 ft QBT3
Copper 5.43 (J)

33-61954 TD: 0-10 ft
RE33-21-224223 0-1 ft SOIL
Chromium 180 (J)
Copper 5710 (J)
Lead 741 (J)
Mercury 16.2 (J)
Zinc 1740 (J)
RE33-21-224224 5-6 ft QBT3
Copper 226 (J)
Lead 19.5 (J)
Mercury 0.297 (J)
RE33-21-224225 9-10 ft QBT3
Copper 31.7 (J)
Lead 17.7 (J)
Mercury 0.688 (J)
Zinc 66.1 (J)

33-61955 TD: 0-10 ft
RE33-21-224226 0-1 ft SOIL
Chromium 31.1 (J)
Copper 291 (J)
Lead 228 (J)
Mercury 3.36 (J)
Zinc 3220 (J)
RE33-21-224227 5-6 ft QBT3
Copper 41.6 (J)
Lead 11.4 (J)
Zinc 240 (J)

33-61974 TD: 0-10 ft
RE33-21-224283 0-1 ft SOIL
Copper 165 (J)
Lead 43.1 (J)
Mercury 1.19
Zinc 240
RE33-21-224285 9-10 ft QBT3
Copper 4.92 (J)

33-61977 TD: 0-10 ft
RE33-21-224292 0-1 ft SOIL
Copper 53.3 (J)
Lead 28.2 (J)
Mercury 1.26
Zinc 130
RE33-21-224293 5-6 ft SOIL
Zinc 414

33-61978 TD: 0-10 ft
RE33-21-224295 0-1 ft SOIL
Copper 28.3 (J)
Lead 23 (J)
Mercury 0.293
Zinc 84.4
RE33-21-224296 5-6 ft SOIL
Zinc 89.8

33-61967 TD: 0-10 ft
RE33-21-224262 0-1 ft FILL
Copper 28.8 (J)
Lead 25.6
Zinc 75.8

33-61966 TD: 0-10 ft
RE33-21-224259 0-1 ft FILL
Copper 25.1 (J)
Zinc 65

33-01683

33-61980 TD: 0-10 ft
RE33-21-224301 0-1 ft SOIL
Copper 43.9
Mercury 0.164
Zinc 118
RE33-21-224303 9-10 ft QBT3
Copper 5.74

33-61979 TD: 0-10 ft
RE33-21-224298 0-1 ft SOIL
Zinc 70.9
RE33-21-224300 9-10 ft QBT3
Copper 5.13

33-61965 TD: 0-10 ft
RE33-21-224256 0-1 ft FILL
Copper 48.8 (J)
RE33-21-224258 9-10 ft QBT3
Copper 11.1 (J)

33-60681 TD: 0-10 ft
RE33-20-190381 0-1 ft SED
Chromium 12
Cobalt 5.45
Selenium 0.583 (J)
Vanadium 24.1
RE33-20-190389 9-10 ft QBT2
Chromium 12.4
Selenium 1.09 (J)

33-61981 TD: 0-10 ft
RE33-21-224305 5-6 ft SOIL
Copper 21.5
Zinc 76
RE33-21-224306 9-10 ft QBT3
Copper 5.77

33-01681 TD: 0-10 ft
RE33-20-190373 9-10 ft QBT3
Chromium 8.44 (J+)
Copper 32.7
Lead 17.9
Mercury 0.246
Selenium 0.792 (J)
Zinc 84.8

33-01675 TD: 0-0.5 ft
0333-96-0659 0-0.5 ft SOIL
Uranium 2.79

33-61982 TD: 0-10 ft
RE33-21-224309 9-10 ft QBT3
Copper 5.15

33-60682 TD: 0-10 ft
RE33-20-190390 9-10 ft QBT3
Calcium 7310
Selenium 1.06

33-61962 TD: 0-10 ft
RE33-21-224247 0-1 ft SOIL
Copper 19.2
Mercury 0.114
RE33-21-224248 5-6 ft SOIL
Copper 80.7
Lead 29.4
Mercury 0.347
Zinc 68.3 (J+)
RE33-21-224249 9-10 ft QBT3
Copper 27.9
Lead 1310

33-61961 TD: 0-10 ft
RE33-21-224244 0-1 ft SOIL
Copper 63.8 (J)
Mercury 0.184 (J)
Zinc 70.1 (J)

33-60683 TD: 0-10 ft
RE33-20-190391 9-10 ft QBT3
Chromium 7.61
Selenium 0.748 (J)

33-61960 TD: 0-10 ft
RE33-21-224241 0-1 ft SOIL
Copper 613 (J)
Lead 70.1 (J)
Mercury 0.677 (J)
Zinc 382
RE33-21-224242 5-6 ft QBT3
Copper 9.33 (J)
RE33-21-224243 9-10 ft QBT3
Copper 10.3 (J)

33-61956 TD: 0-10 ft
RE33-21-224229 0-1 ft SOIL
Copper 496 (J)
Lead 150 (J)
Mercury 1.92 (J)
Zinc 712 (J)
RE33-21-224230 5-6 ft QBT3
Copper 12.1 (J)
Mercury 0.123 (J)
RE33-21-224231 9-10 ft QBT3
Copper 6.93 (J)

33-61957 TD: 0-10 ft
RE33-21-224232 0-1 ft SOIL
Copper 743 (J)
Lead 320 (J)
Mercury 1.93 (J)
Zinc 767 (J)
RE33-21-224233 5-6 ft QBT3
Copper 33.4 (J)
Lead 29.1 (J)
Mercury 0.136 (J)
Zinc 74.5 (J)
RE33-21-224234 9-10 ft QBT3
Copper 8.24 (J)

33-01682 TD: 0-10 ft
RE33-20-190375 5-6 ft QBT3
Chromium 12.3
Copper 5.18 (J)
Selenium 0.971 (J)
RE33-20-190376 9-10 ft QBT3
Chromium 14
Copper 38.8 (J)
Lead 17 (J+)
Nickel 23.5 (J)
Selenium 0.805 (J)
Zinc 64.1

33-61958 TD: 0-10 ft
RE33-21-224235 0-1 ft SOIL
Chromium 49.1
Copper 862 (J)
Lead 215 (J)
Mercury 2.91 (J)
Zinc 1310
RE33-21-224236 5-6 ft QBT3
Copper 103 (J)
Lead 58.2 (J)
Mercury 0.202 (J)
Zinc 94.7
RE33-21-224237 9-10 ft QBT3
Copper 20.5 (J)

33-60680 TD: 0-10 ft
RE33-20-190384 5-6 ft QBT3
Beryllium 1.33
Calcium 4140
Chromium 21.6
Selenium 1.19
RE33-20-190388 9-10 ft QBT2
Calcium 5070
Chromium 10.1
Magnesium 2060 (J+)
Selenium 1.11

33-61968 TD: 0-10 ft
RE33-21-224265 0-1 ft SOIL
Copper 25.6
Zinc 54.1

33-61969 TD: 0-10 ft
RE33-21-224268 0-1 ft SOIL
Copper 153
Lead 77.5 (J+)
Zinc 322
RE33-21-224269 5-6 ft QBT3
Copper 5.97
RE33-21-224270 9-10 ft QBT3
Copper 7.2

33-61959 TD: 0-10 ft
RE33-21-224238 0-1 ft SOIL
Copper 146 (J)
Lead 81.9 (J)
Mercury 0.495 (J)
Zinc 180
RE33-21-224239 5-6 ft QBT3
Copper 8.78 (J)

33-61970 TD: 0-10 ft
RE33-21-224271 0-1 ft SOIL
Copper 607
Lead 157 (J+)
Zinc 611
RE33-21-224272 5-6 ft QBT3
Copper 61.4
Lead 24.5 (J+)
Zinc 98.1
RE33-21-224273 9-10 ft QBT3
Copper 25.8

33-01672 TD: 0-10 ft
RE33-20-190363 5-6 ft QBT3
Chromium 13.3
Selenium 0.989 (J)
RE33-20-190364 9-10 ft QBT3
Chromium 8.01
Selenium 0.821 (J)

33-01674 TD: 0-3 ft
RE33-21-217939 2-3 ft QBT3
Copper 56.2
Lead 41.6 (J)

33-61971 TD: 0-10 ft
RE33-21-224274 0-1 ft SOIL
Copper 964
Lead 159 (J+)
Zinc 1130
RE33-21-224275 5-6 ft QBT3
Copper 57.1
Lead 16.9 (J+)
Zinc 71.4
RE33-21-224276 9-10 ft QBT3
Copper 6.14

33-61972

33-01685 TD: 0-6 ft
RE33-20-190361 5-6 ft QBT3
Selenium 1.16

33-61976 TD: 0-10 ft
RE33-21-224289 0-1 ft FILL
Copper 25.7 (J)
Mercury 0.178 (J)

33-61973 TD: 0-10 ft
RE33-21-224280 0-0.7 ft FILL
Copper 33.8 (J)
Mercury 0.286 (J)
Zinc 56.4
RE33-21-224282 9-10 ft QBT3
Copper 4.79 (J)

33-61975 TD: 0-10 ft
RE33-21-224286 0-1 ft FILL
Copper 1350 (J)
Mercury 0.585 (J)
RE33-21-224287 5-6 ft QBT3
Copper 6.35 (J)
Lead 13.5

33-60679 TD: 0-6 ft
RE33-20-190357 5-6 ft QBT3
Chromium 13.6
Selenium 0.987

33-60678 TD: 0-6 ft
RE33-20-190356 5-6 ft QBT3
Chromium 9.03
Selenium 1.13

33-01670 TD: 0-6 ft
0333-96-0652 0-0.5 ft SOIL
Uranium 2.6
RE33-20-190359 5-6 ft QBT3
Chromium 12.2
Selenium 0.93 (J)

6530 6520 6510 6500

0 3.75 7.5 15 22.5 30
Feet

STATE PLANE COORDINATE SYSTEM
NEW MEXICO CENTRAL ZONE, US FT
NORTH AMERICAN DATUM 1983

N

U.S. Forest Service
LOS ALAMOS
U.S. Forest Service
Pueblo de San Ildefonso
Los Alamos National Laboratory
WHITE ROCK
Bandelier National Monument
MAP LOCATION

- Sampling location
- Water line
- Gas line
- Electric line
- Communication line
- Fence
- SWMU or AOC
- SWMU 33-008(c)
- Excavation boundary
- Index contour, 10-ft interval
- Terrain contour, 2-ft interval

PLATE 9

Inorganic chemicals detected or detected above BVs at SWMU 33-008(c)

Map: map_21-0006-61_33-008(c)_inorg 8/4/2021 DFRANK
edit: JSAMMONS

Disclaimer: This map was created for work processes associated with the LLCC. All other uses for this map should be confirmed with N3B staff.

Note: All units are in mg/kg

1638800.00
1638900.00
1639000.00
1639100.00
1740500.00
1740400.00
1740300.00
1740200.00
1740100.00

SWMU 33-004(i)
SWMU 33-017
SWMU 33-008(c)
SWMU 33-015
SWMU 33-013

33-01679 TD: 0-10 ft
RE33-20-190355 0-1 ft SOIL
Acenaphthene 0.0475
Aroclor-1254 0.0054
Aroclor-1260 0.00971
Benzo(a)anthracene 0.0234 (J)
Benzo(a)pyrene 0.0253 (J)
Benzo(b)fluoranthene 0.0279 (J)
Benzo(g,h,i)perylene 0.0177 (J)
Chrysene 0.0207 (J)
Fluoranthene 0.0396
Indeno(1,2,3-cd)pyrene 0.023 (J)
Phenanthrene 0.026 (J)
Pyrene 0.0362 (J)
0333-96-0673 0-2 ft SOIL
Benzo(a)anthracene 0.058 (J)
Benzo(a)pyrene 0.077 (J)
Benzo(b)fluoranthene 0.056 (J)
Benzo(g,h,i)perylene 0.053 (J)
Benzo(k)fluoranthene 0.06 (J)
Chrysene 0.072 (J)
Fluoranthene 0.11 (J)
Indeno(1,2,3-cd)pyrene 0.049 (J)
Phenanthrene 0.1 (J)
Pyrene 0.1 (J)
0333-96-0674 3-5 ft SOIL
Hexanone[2-] 0.006 (J)
Tetrachloroethene 0.002 (J)
Toluene 0.001 (J)
Trichloroethene 0.002 (J)
Xylene (Total) 0.002 (J)

33-01680 TD: 0-10 ft
RE33-21-224258 6-7 ft QBT3
Aroclor-1254 0.00371
RE33-21-217940 6-7 ft QBT3
Acenaphthene 0.11 (J+)
Anthracene 0.162
Benzo(a)anthracene 0.356 (J+)
Benzo(a)pyrene 0.448 (J+)
Benzo(b)fluoranthene 0.445 (J+)
Benzo(g,h,i)perylene 0.313 (J+)
Benzo(k)fluoranthene 0.19 (J+)
Chrysene 0.37 (J+)
Dibenz(a,h)anthracene 0.105 (J+)
Fluoranthene 0.663 (J+)
Fluorene 0.096 (J+)
Indeno(1,2,3-cd)pyrene 0.354 (J+)
Naphthalene 0.0925 (J+)
Phenanthrene 0.601 (J-)
Pyrene 0.688 (J+)
RE33-21-224209 9-10 ft QBT3
Aroclor-1254 0.00148 (J)
RE33-20-190370 9-10 ft QBT3
Benzo(a)anthracene 0.0114 (J)
Fluoranthene 0.018 (J)
Naphthalene 0.000487 (J-)
Phenanthrene 0.0213 (J)
Pyrene 0.0147 (J)

33-01684 TD: 0-10 ft
RE33-21-217956 4-6 ft FILL
Aroclor-1254 0.0082
Aroclor-1260 0.00443 (J-)
RE33-21-224214 6-7 ft QBT3
Aroclor-1260 0.00155 (J)
RE33-20-190379 9-10 ft QBT3
Di-n-butylphthalate 0.0113 (J)
Fluoranthene 0.0124 (J)
Naphthalene 0.00368
Phenanthrene 0.0156 (J)

33-01952 TD: 0-10 ft
RE33-21-224217 0-1 ft SOIL
Acenaphthene 0.0089
Acenaphthylene 0.00651
Anthracene 0.0257
Benzo(a)anthracene 0.107
Benzo(a)pyrene 0.143
Benzo(b)fluoranthene 0.153
Benzo(g,h,i)perylene 0.0681
Benzo(k)fluoranthene 0.0579
Chrysene 0.118
Dibenz(a,h)anthracene 0.0205
Fluoranthene 0.193
Fluorene 0.00822
Indeno(1,2,3-cd)pyrene 0.0808
Methylnaphthalene[1-] 0.00616
Methylnaphthalene[2-] 0.00951
Naphthalene 0.00514
Phenanthrene 0.088
Pyrene 0.175
RE33-21-224218 5-6 ft QBT3
Benzo(a)anthracene 0.00245 (J)
Benzo(a)pyrene 0.0028 (J)
Benzo(b)fluoranthene 0.00349
Chrysene 0.0028 (J)
Fluoranthene 0.00419
Indeno(1,2,3-cd)pyrene 0.00175 (J)
Phenanthrene 0.00245 (J)
Pyrene 0.00349
RE33-21-224219 9-10 ft QBT3
Benzo(a)anthracene 0.00419
Benzo(a)pyrene 0.00454
Benzo(b)fluoranthene 0.00559
Benzo(g,h,i)perylene 0.00259 (J)
Benzo(k)fluoranthene 0.00209 (J)
Chrysene 0.00454
Fluoranthene 0.00908
Indeno(1,2,3-cd)pyrene 0.00279 (J)
Phenanthrene 0.00594
Pyrene 0.00803

33-01953 TD: 0-10 ft
RE33-21-224220 0-1 ft FILL
Acenaphthene 0.0142 (J)
Anthracene 0.0135 (J)
Benzo(a)anthracene 0.0382
Benzo(a)pyrene 0.0507
Benzo(b)fluoranthene 0.0588
Benzo(g,h,i)perylene 0.0318
Benzo(k)fluoranthene 0.022
Chrysene 0.045
Dibenz(a,h)anthracene 0.00913 (J)
Fluoranthene 0.0784 (J)
Fluorene 0.00778 (J)
Indeno(1,2,3-cd)pyrene 0.0348
Methylnaphthalene[1-] 0.00304 (J)
Methylnaphthalene[2-] 0.00304 (J)
Naphthalene 0.00609 (J)
Phenanthrene 0.0571 (J)
Pyrene 0.0666 (J)
RE33-21-224221 5-6 ft QBT3
Acenaphthene 0.036 (J)
Anthracene 0.00686 (J)
Benzo(a)pyrene 0.0302
Benzo(b)fluoranthene 0.0388
Benzo(g,h,i)perylene 0.0196
Benzo(k)fluoranthene 0.0144
Chrysene 0.0261
Dibenz(a,h)anthracene 0.00652 (J)
Fluoranthene 0.0374 (J)
Fluorene 0.00275 (J)
Indeno(1,2,3-cd)pyrene 0.0216
Naphthalene 0.00309 (J)
Phenanthrene 0.0254 (J)
Pyrene 0.0316 (J)
RE33-21-224222 9-10 ft QBT3
Benzo(b)fluoranthene 0.00237 (J)
Fluoranthene 0.00237 (J)
Phenanthrene 0.00169 (J)
Pyrene 0.00203 (J)

33-01954 TD: 0-10 ft
RE33-21-224223 0-1 ft SOIL
Acenaphthene 0.0454 (J)
Acenaphthylene 0.0101
Anthracene 0.0964 (J)
Benzo(a)anthracene 0.251
Benzo(a)pyrene 0.33
Benzo(b)fluoranthene 0.386
Benzo(g,h,i)perylene 0.129
Benzo(k)fluoranthene 0.144
Chrysene 0.282
Dibenz(a,h)anthracene 0.0423 (J)
Fluoranthene 0.473 (J)
Fluorene 0.0478 (J)
Indeno(1,2,3-cd)pyrene 0.157
Methylnaphthalene[1-] 0.0121
Methylnaphthalene[2-] 0.0128 (J)
Naphthalene 0.0315 (J)
Phenanthrene 0.339 (J)
Pyrene 0.435 (J)
RE33-21-224224 5-6 ft QBT3
Benzo(a)anthracene 0.00308 (J)
Benzo(a)pyrene 0.00342
Benzo(b)fluoranthene 0.0041
Chrysene 0.00308 (J)
Fluoranthene 0.00547 (J)
Indeno(1,2,3-cd)pyrene 0.00205 (J)
Phenanthrene 0.0041 (J)
Pyrene 0.00513 (J)
RE33-21-224225 9-10 ft QBT3
Benzo(a)pyrene 0.0034
Benzo(b)fluoranthene 0.00442
Benzo(g,h,i)perylene 0.00204 (J)
Chrysene 0.00306 (J)
Fluoranthene 0.00442 (J)
Indeno(1,2,3-cd)pyrene 0.00204 (J)
Phenanthrene 0.00272 (J)
Pyrene 0.00408 (J)

33-01955 TD: 0-10 ft
RE33-21-224226 0-1 ft SOIL
Acenaphthene 0.0222 (J)
Anthracene 0.0447 (J)
Benzo(a)anthracene 0.248
Benzo(a)pyrene 0.472
Benzo(b)fluoranthene 0.42
Benzo(g,h,i)perylene 0.273
Benzo(k)fluoranthene 0.136
Chrysene 0.377
Dibenz(a,h)anthracene 0.0625 (J)
Fluoranthene 0.322 (J)
Fluorene 0.0196 (J)
Indeno(1,2,3-cd)pyrene 0.184
Methylnaphthalene[1-] 0.0125 (J)
Methylnaphthalene[2-] 0.0161 (J)
Naphthalene 0.0143 (J)
Phenanthrene 0.189 (J)
Pyrene 0.354 (J)
RE33-21-224227 5-6 ft QBT3
Anthracene 0.0021 (J)
Benzo(a)anthracene 0.00838
Benzo(a)pyrene 0.0133
Benzo(b)fluoranthene 0.0154
Benzo(g,h,i)perylene 0.00734
Benzo(k)fluoranthene 0.00559
Chrysene 0.0136
Dibenz(a,h)anthracene 0.0021 (J)
Fluoranthene 0.0203 (J)
Indeno(1,2,3-cd)pyrene 0.00699
Phenanthrene 0.0143 (J)
Pyrene 0.0182 (J)

33-01956 TD: 0-10 ft
RE33-21-224228 0-1 ft SOIL
Acenaphthene 1.52 (J)
Anthracene 5.13 (J)
Benzo(a)anthracene 14.2
Benzo(a)pyrene 20.5
Benzo(b)fluoranthene 21.1
Benzo(g,h,i)perylene 13.5
Benzo(k)fluoranthene 7.57
Chrysene 15.1
Dibenz(a,h)anthracene 4.06 (J)
Fluoranthene 22.8 (J)
Fluorene 1.14 (J)
Indeno(1,2,3-cd)pyrene 14.6
Methylnaphthalene[1-] 0.342
Methylnaphthalene[2-] 0.428 (J)
Naphthalene 0.941 (J)
Phenanthrene 16.9 (J)
Pyrene 20 (J)
RE33-21-224229 5-6 ft QBT3
Anthracene 0.0039 (J)
Benzo(a)anthracene 0.0128
Benzo(a)pyrene 0.0191
Benzo(b)fluoranthene 0.0206
Benzo(g,h,i)perylene 0.0145
Benzo(k)fluoranthene 0.0078
Chrysene 0.0145
Dibenz(a,h)anthracene 0.00425 (J)
Fluoranthene 0.0227 (J)
Indeno(1,2,3-cd)pyrene 0.0156
Phenanthrene 0.0149 (J)
Pyrene 0.0198 (J)
RE33-21-224231 9-10 ft QBT3
Anthracene 0.00244 (J)
Benzo(a)anthracene 0.00977
Benzo(a)pyrene 0.0129
Benzo(b)fluoranthene 0.0157
Benzo(g,h,i)perylene 0.00559
Benzo(k)fluoranthene 0.00593
Chrysene 0.0115
Dibenz(a,h)anthracene 0.00209 (J)
Fluoranthene 0.0158 (J)
Indeno(1,2,3-cd)pyrene 0.00663
Phenanthrene 0.0108 (J)
Pyrene 0.0168 (J)

33-01957 TD: 0-10 ft
RE33-21-224232 0-1 ft SOIL
Acenaphthene 0.279 (J)
Acenaphthylene 0.0279
Anthracene 0.567 (J)
Benzo(a)anthracene 1.62
Benzo(a)pyrene 2.23
Benzo(b)fluoranthene 2.69
Benzo(g,h,i)perylene 0.799
Benzo(k)fluoranthene 1.01
Chrysene 1.81
Dibenz(a,h)anthracene 0.281 (J)
Fluoranthene 2.91 (J)
Fluorene 0.27 (J)
Indeno(1,2,3-cd)pyrene 0.998
Methylnaphthalene[1-] 0.0688
Methylnaphthalene[2-] 0.0762 (J)
Naphthalene 0.171 (J)
Phenanthrene 2.02 (J)
Pyrene 2.73 (J)
RE33-21-224233 5-6 ft QBT3
Acenaphthene 0.0265 (J)
Acenaphthylene 0.00177 (J)
Anthracene 0.0495 (J)
Benzo(a)anthracene 0.103
Benzo(a)pyrene 0.13
Benzo(b)fluoranthene 0.154
Benzo(g,h,i)perylene 0.0477
Benzo(k)fluoranthene 0.0569
Chrysene 0.11
Dibenz(a,h)anthracene 0.0166 (J)
Fluoranthene 0.208 (J)
Fluorene 0.0283 (J)
Indeno(1,2,3-cd)pyrene 0.0604
Methylnaphthalene[1-] 0.00813
Methylnaphthalene[2-] 0.00106 (J)
Naphthalene 0.0269 (J)
Phenanthrene 0.177 (J)
Pyrene 0.185 (J)
RE33-21-224234 9-10 ft QBT3
Acenaphthene 0.0585 (J)
Acenaphthylene 0.00528
Anthracene 0.126 (J)
Benzo(a)anthracene 0.18
Benzo(a)pyrene 0.219
Benzo(b)fluoranthene 0.241
Benzo(g,h,i)perylene 0.0733
Benzo(k)fluoranthene 0.094
Chrysene 0.18
Dibenz(a,h)anthracene 0.0282 (J)
Fluoranthene 0.378 (J)
Fluorene 0.0866 (J)
Indeno(1,2,3-cd)pyrene 0.0947
Methylnaphthalene[1-] 0.0229
Methylnaphthalene[2-] 0.0394 (J)
Naphthalene 0.149 (J)
Phenanthrene 0.406 (J)
Pyrene 0.335 (J)

33-01958 TD: 0-10 ft
RE33-21-224235 0-1 ft SOIL
Acenaphthene 3.51
Acenaphthylene 0.109 (J)
Anthracene 6.87
Benzo(a)anthracene 10.4
Benzo(a)pyrene 11.9
Benzo(b)fluoranthene 12
Benzo(g,h,i)perylene 6.9
Benzo(k)fluoranthene 4.63
Chrysene 10.4
Dibenz(a,h)anthracene 2.13
Fluoranthene 22.1
Fluorene 3.82
Indeno(1,2,3-cd)pyrene 7.93
Methylnaphthalene[1-] 1.15
Methylnaphthalene[2-] 1.62
Naphthalene 3.74
Phenanthrene 22.9
Pyrene 19.1
RE33-21-224236 5-6 ft QBT3
Acenaphthene 0.0659
Acenaphthylene 0.0043
Anthracene 0.107
Benzo(a)anthracene 0.204
Benzo(a)pyrene 0.252
Benzo(b)fluoranthene 0.275
Benzo(g,h,i)perylene 0.129
Benzo(k)fluoranthene 0.102
Chrysene 0.222
Dibenz(a,h)anthracene 0.039
Fluoranthene 0.467
Fluorene 0.0673
Indeno(1,2,3-cd)pyrene 0.151
Methylnaphthalene[1-] 0.0186
Methylnaphthalene[2-] 0.0233
Naphthalene 0.0509
Phenanthrene 0.418
Pyrene 0.388
RE33-21-224237 9-10 ft QBT3
Acenaphthene 0.00786
Anthracene 0.0161
Benzo(a)anthracene 0.0282
Benzo(a)pyrene 0.0304
Benzo(b)fluoranthene 0.0307
Benzo(g,h,i)perylene 0.0161
Benzo(k)fluoranthene 0.0121
Chrysene 0.0282
Dibenz(a,h)anthracene 0.005
Fluoranthene 0.0536
Fluorene 0.00965
Indeno(1,2,3-cd)pyrene 0.0182
Methylnaphthalene[1-] 0.00214 (J)
Methylnaphthalene[2-] 0.00286 (J)
Naphthalene 0.00929
Phenanthrene 0.055
Pyrene 0.0504

33-01959 TD: 0-10 ft
RE33-21-224238 0-1 ft SOIL
Acenaphthene 0.0372
Anthracene 0.0638
Benzo(a)anthracene 0.276
Benzo(a)pyrene 0.383
Benzo(b)fluoranthene 0.431
Benzo(g,h,i)perylene 0.206
Benzo(k)fluoranthene 0.167
Chrysene 0.337
Dibenz(a,h)anthracene 0.0585
Fluoranthene 0.488
Fluorene 0.0372
Indeno(1,2,3-cd)pyrene 0.225
Methylnaphthalene[1-] 0.00886 (J)
Naphthalene 0.0177
Phenanthrene 0.317
Pyrene 0.509
RE33-21-224239 5-6 ft QBT3
Acenaphthene 0.016
Anthracene 0.0407
Benzo(a)anthracene 0.104
Benzo(a)pyrene 0.145
Benzo(b)fluoranthene 0.147
Benzo(g,h,i)perylene 0.0635
Benzo(k)fluoranthene 0.0613
Chrysene 0.114
Dibenz(a,h)anthracene 0.02
Fluoranthene 0.166
Fluorene 0.0189
Indeno(1,2,3-cd)pyrene 0.0781
Methylnaphthalene[1-] 0.00357
Methylnaphthalene[2-] 0.00321 (J)
Naphthalene 0.00428
Phenanthrene 0.154
Pyrene 0.173
RE33-21-224240 9-10 ft QBT3
Acenaphthene 0.00524
Anthracene 0.00593
Benzo(a)anthracene 0.0213
Benzo(a)pyrene 0.023
Benzo(b)fluoranthene 0.0269
Benzo(g,h,i)perylene 0.00908
Benzo(k)fluoranthene 0.0108
Chrysene 0.022
Dibenz(a,h)anthracene 0.00279 (J)
Fluoranthene 0.0422
Fluorene 0.00454
Indeno(1,2,3-cd)pyrene 0.0112
Phenanthrene 0.0381
Pyrene 0.0436

33-01960 TD: 0-10 ft
RE33-21-224241 0-1 ft SOIL
Acenaphthene 0.114
Acenaphthylene 0.0185
Anthracene 0.197
Benzo(a)anthracene 0.336
Benzo(a)pyrene 0.415
Benzo(b)fluoranthene 0.439
Benzo(g,h,i)perylene 0.205
Benzo(k)fluoranthene 0.161
Chrysene 0.358
Dibenz(a,h)anthracene 0.0656
Fluoranthene 0.746
Fluorene 0.126
Indeno(1,2,3-cd)pyrene 0.245
Methylnaphthalene[1-] 0.0487
Methylnaphthalene[2-] 0.0723
Naphthalene 0.254
Phenanthrene 0.662
Pyrene 0.629
RE33-21-224242 5-6 ft QBT3
Anthracene 0.00208 (J)
Benzo(a)anthracene 0.0052
Benzo(a)pyrene 0.00589
Benzo(b)fluoranthene 0.00658
Benzo(g,h,i)perylene 0.00312 (J)
Benzo(k)fluoranthene 0.002442 (J)
Chrysene 0.00554
Fluoranthene 0.0114
Indeno(1,2,3-cd)pyrene 0.00381
Phenanthrene 0.00762
Pyrene 0.0097
RE33-21-224243 9-10 ft QBT3
Benzo(a)pyrene 0.00602
Benzo(b)fluoranthene 0.00637
Benzo(g,h,i)perylene 0.00318 (J)
Benzo(k)fluoranthene 0.002283 (J)
Chrysene 0.00495
Fluoranthene 0.00779
Phenanthrene 0.00495
Pyrene 0.00814

33-01961 TD: 0-10 ft
RE33-21-224244 0-1 ft SOIL
Acenaphthene 0.0159 (J)
Anthracene 0.0301
Benzo(a)anthracene 0.104 (J)
Benzo(a)pyrene 0.122 (J)
Benzo(b)fluoranthene 0.122 (J)
Benzo(g,h,i)perylene 0.062 (J)
Benzo(k)fluoranthene 0.0443 (J)
Chrysene 0.136 (J)
Dibenz(a,h)anthracene 0.0159 (J)
Fluoranthene 0.182 (J)
Fluorene 0.0177
Indeno(1,2,3-cd)pyrene 0.0549 (J)
Naphthalene 0.0142 (J)
Phenanthrene 0.119 (J)
Pyrene 0.188 (J)
RE33-21-224245 5-6 ft QBT3
Anthracene 0.00239 (J)
Benzo(a)anthracene 0.0218
Benzo(a)pyrene 0.0236
Benzo(b)fluoranthene 0.0222
Benzo(g,h,i)perylene 0.0181
Benzo(k)fluoranthene 0.0215
Chrysene 0.0201
Dibenz(a,h)anthracene 0.0215
Fluoranthene 0.0178
Indeno(1,2,3-cd)pyrene 0.0201
Phenanthrene 0.00444
Pyrene 0.0164
RE33-21-224246 9-10 ft QBT3
Benzo(a)anthracene 0.0105 (J)
Benzo(a)pyrene 0.0105 (J)
Benzo(b)fluoranthene 0.0112 (J)
Benzo(g,h,i)perylene 0.00838 (J)
Benzo(k)fluoranthene 0.0105 (J)
Chrysene 0.0112 (J)
Dibenz(a,h)anthracene 0.00908 (J)
Fluoranthene 0.00663 (J)
Indeno(1,2,3-cd)pyrene 0.00908 (J)
Phenanthrene 0.00244 (J)
Pyrene 0.00838 (J)

33-01962 TD: 0-10 ft
RE33-21-224247 0-1 ft SOIL
Benzo(a)anthracene 0.0302
Benzo(a)pyrene 0.0374
Benzo(b)fluoranthene 0.0391
Benzo(g,h,i)perylene 0.0213
Benzo(k)fluoranthene 0.016 (J)
Chrysene 0.0338
Fluoranthene 0.0576
Indeno(1,2,3-cd)pyrene 0.0213
Phenanthrene 0.0445
Pyrene 0.0587
RE33-21-224248 5-6 ft SOIL
Fluoranthene 0.00217 (J)
Pyrene 0.00217 (J)
RE33-21-224249 9-10 ft QBT3
Fluoranthene 0.00212 (J)
Phenanthrene 0.00177 (J)
Pyrene 0.00177 (J)

33-01965 TD: 0-10 ft
RE33-21-224258 9-10 ft QBT3
Acenaphthene 0.00206 (J)
Anthracene 0.00343
Benzo(g,h,i)perylene 0.013
Benzo(a)pyrene 0.0158
Benzo(b)fluoranthene 0.0185
Benzo(g,h,i)perylene 0.00996
Benzo(k)fluoranthene 0.00687
Chrysene 0.0148
Dibenz(a,h)anthracene 0.00275 (J)
Fluoranthene 0.0292
Fluorene 0.00172 (J)
Indeno(1,2,3-cd)pyrene 0.011
Phenanthrene 0.0161
Pyrene 0.0254
RE33-21-224257 5-6 ft FILL
Fluoranthene 0.0032 (J)
Phenanthrene 0.00249 (J)
Pyrene 0.00284 (J)
RE33-21-224258 9-10 ft QBT3
Benzo(a)pyrene 0.00211 (J)
Benzo(b)fluoranthene 0.00246 (J)
Chrysene 0.00211 (J)
Fluoranthene 0.00422
Phenanthrene 0.00281 (J)
Pyrene 0.00387

33-01966 TD: 0-10 ft
RE33-21-224259 0-1 ft FILL
Anthracene 0.00881 (J)
Benzo(a)anthracene 0.0405
Benzo(a)pyrene 0.0546
Benzo(b)fluoranthene 0.0669
Benzo(g,h,i)perylene 0.0317
Benzo(k)fluoranthene 0.0247
Chrysene 0.0511
Fluoranthene 0.0934
Indeno(1,2,3-cd)pyrene 0.0352
Phenanthrene 0.0528
Pyrene 0.0881
RE33-21-224260 5-6 ft FILL
Benzo(a)pyrene 0.00283 (J)
Benzo(b)fluoranthene 0.00354
Chrysene 0.00283 (J)
Fluoranthene 0.00496
Indeno(1,2,3-cd)pyrene 0.00177 (J)
Phenanthrene 0.0034
Pyrene 0.00425
RE33-21-224261 9-10 ft QBT3
Fluoranthene 0.00206 (J)
Pyrene 0.00171 (J)

33-01967 TD: 0-10 ft
RE33-21-224262 0-1 ft FILL
Acenaphthene 0.0637
Acenaphthylene 0.0109 (J)
Anthracene 0.091
Benzo(a)anthracene 0.233
Benzo(a)pyrene 0.282
Benzo(b)fluoranthene 0.337
Benzo(g,h,i)perylene 0.118
Benzo(k)fluoranthene 0.126
Chrysene 0.273
Dibenz(a,h)anthracene 0.0364
Fluoranthene 0.568
Fluorene 0.0528
Indeno(1,2,3-cd)pyrene 0.146
Methylnaphthalene[1-] 0.0182
Methylnaphthalene[2-] 0.02
Naphthalene 0.051
Phenanthrene 0.422
Pyrene 0.499
RE33-21-224263 5-6 ft FILL
Benzo(a)pyrene 0.00248 (J)
Benzo(b)fluoranthene 0.00319 (J)
Chrysene 0.00248 (J)
Fluoranthene 0.00496
Phenanthrene 0.00354
Pyrene 0.00425
RE33-21-224264 9-10 ft QBT3
Anthracene 0.00281 (J)
Benzo(a)anthracene 0.00704
Benzo(a)pyrene 0.00774
Benzo(b)fluoranthene 0.0095
Benzo(g,h,i)perylene 0.00352
Benzo(k)fluoranthene 0.00352
Chrysene 0.00774
Fluoranthene 0.0158
Indeno(1,2,3-cd)pyrene 0.00422
Phenanthrene 0.0106
Pyrene 0.0141

33-01968 TD: 0-10 ft
RE33-21-224265 0-1 ft SOIL
Acenaphthene 0.0358 (J+)
Anthracene 0.0537 (J+)
Benzo(a)anthracene 0.175 (J+)
Benzo(a)pyrene 0.211 (J+)
Benzo(b)fluoranthene 0.261 (J+)
Benzo(g,h,i)perylene 0.0788 (J+)
Benzo(k)fluoranthene 0.1 (J+)
Chrysene 0.2 (J+)
Dibenz(a,h)anthracene 0.0251 (J+)
Fluoranthene 0.415 (J+)
Fluorene 0.0322 (J+)
Indeno(1,2,3-cd)pyrene 0.1 (J+)
Phenanthrene 0.258 (J+)
Pyrene 0.365 (J+)
RE33-21-224293 5-6 ft SOIL
Acenaphthene 0.266
Acenaphthylene 0.0422
Anthracene 0.418
Benzo(a)anthracene 0.681
Benzo(a)pyrene 0.798
Benzo(b)fluoranthene 0.76
Benzo(g,h,i)perylene 0.503
Benzo(k)fluoranthene 0.301
Chrysene 0.672
Dibenz(a,h)anthracene 0.138
Fluoranthene 1.45
Fluorene 0.36
Indeno(1,2,3-cd)pyrene 0.547
Methylnaphthalene[1-] 0.141
Methylnaphthalene[2-] 0.216
Naphthalene 0.721
Phenanthrene 1.66
Pyrene 1.27
RE33-21-224294 9-10 ft QBT3
Benzo(a)pyrene 0.00329 (J)
Benzo(b)fluoranthene 0.00439
Benzo(g,h,i)perylene 0.00293 (J)
Chrysene 0.00329 (J)
Fluoranthene 0.00622
Indeno(1,2,3-cd)pyrene 0.00293 (J)
Phenanthrene 0.00476
Pyrene 0.00549

33-01969 TD: 0-10 ft
RE33-21-224266 0-1 ft SOIL
Benzo(a)anthracene 0.0463 (J)
Benzo(a)pyrene 0.0606 (J)
Benzo(b)fluoranthene 0.0749 (J)
Benzo(g,h,i)perylene 0.0321 (J)
Benzo(k)fluoranthene 0.0285 (J)
Chrysene 0.0606 (J)
Fluoranthene 0.107 (J)
Indeno(1,2,3-cd)pyrene 0.0357 (J)
Naphthalene 0.0392 (J)
Phenanthrene 0.0542 (J)
Pyrene 0.0963 (J)
RE33-21-224299 5-6 ft SOIL
Benzo(a)anthracene 0.00277 (J)
Benzo(a)pyrene 0.00312 (J)
Benzo(b)fluoranthene 0.00346 (J)
Chrysene 0.00277 (J)
Fluoranthene 0.00589 (J)
Phenanthrene 0.00485 (J)
Pyrene 0.00519 (J)
RE33-21-224300 9-10 ft QBT3
Acenaphthene 0.00309 (J)
Anthracene 0.00481 (J)
Benzo(a)anthracene 0.0113 (J)
Benzo(a)pyrene 0.0127 (J)
Benzo(b)fluoranthene 0.0138 (J)
Benzo(g,h,i)perylene 0.0055 (J)
Benzo(k)fluoranthene 0.0055 (J)
Chrysene 0.0113 (J)
Fluoranthene 0.0244 (J)
Fluorene 0.00206 (J)
Indeno(1,2,3-cd)pyrene 0.00653 (J)
Phenanthrene 0.0168 (J)
Pyrene 0.022 (J)

33-01970 TD: 0-10 ft
RE33-21-224267 0-1 ft SOIL
Acenaphthene 0.0358 (J+)
Anthracene 0.0161 (J)
Benzo(a)anthracene 0.0609
Benzo(a)pyrene 0.0806
Benzo(b)fluoranthene 0.095
Benzo(g,h,i)perylene 0.0358
Benzo(k)fluoranthene 0.0358
Chrysene 0.0717
Dibenz(a,h)anthracene 0.0108 (J)
Fluoranthene 0.133
Fluorene 0.0108 (J)
Indeno(1,2,3-cd)pyrene 0.043
Phenanthrene 0.0735
Pyrene 0.124
RE33-21-224284 5-6 ft SOIL
Acenaphthene 0.034
Acenaphthylene 0.0596
Anthracene 0.0599
Benzo(a)anthracene 0.112
Benzo(a)pyrene 0.134
Benzo(b)fluoranthene 0.142
Benzo(g,h,i)perylene 0.0494
Benzo(k)fluoranthene 0.0561
Chrysene 0.115
Dibenz(a,h)anthracene 0.0165
Fluoranthene 0.235
Fluorene 0.0445
Indeno(1,2,3-cd)pyrene 0.062
Methylnaphthalene[1-] 0.014
Methylnaphthalene[2-] 0.0154
Naphthalene 0.0357
Phenanthrene 0.226
Pyrene 0.21
RE33-21-224285 9-10 ft QBT3
Anthracene 0.00213 (J)
Benzo(a)anthracene 0.00674
Benzo(a)pyrene 0.00816
Benzo(b)fluoranthene 0.00994
Benzo(g,h,i)perylene 0.00319 (J)
Benzo(k)fluoranthene 0.0039
Chrysene 0.00745
Fluoranthene 0.0142
Indeno(1,2,3-cd)pyrene 0.00426
Phenanthrene 0.00852
Pyrene 0.0124

33-01971 TD: 0-6 ft
RE33-21-224203 3-4 ft QBT3
Benzo(a)anthracene 0.00331 (J)
Benzo(a)pyrene 0.0031 (J)
Benzo(b)fluoranthene 0.00331 (J)
Benzo(g,h,i)perylene 0.00221 (J)
Chrysene 0.00257 (J)
Fluoranthene 0.00515
Indeno(1,2,3-cd)pyrene 0.00221 (J)
Methylnaphthalene[1-] 0.00184 (J)
Methylnaphthalene[2-] 0.00331 (J)
Naphthalene 0.00257 (J)
Phenanthrene 0.00515
Pyrene 0.00588

33-01972 TD: 0-10 ft
RE33-21-217935 2-3 ft QBT3
Aroclor-1254 0.0267
Aroclor-1260 0.0241 (J-)
RE33-21-217937 4-5 ft QBT3
Aroclor-1254 0.0109
Aroclor-1260 0.0105 (J-)
RE33-20-190363 5-6 ft QBT3
Benzo(b)fluoranthene 0.0117 (J)
Benzo(g,h,i)perylene 0.0127 (J)
Bis(2-ethylhexyl)phthalate 1.38
RE33-21-224205 6-7 ft QBT3
Aroclor-1254 0.0285
Aroclor-1260 0.0189
RE33-20-190364 9-10 ft QBT3
Benzo(a)anthracene 0.0199 (J)
Benzo(a)pyrene 0.0263 (J)
Benzo(b)fluoranthene 0.0259 (J)
Benzo(g,h,i)perylene 0.0259 (J)
Bis(2-ethylhexyl)phthalate 0.0135 (J)
Chrysene 0.0178 (J)
Fluoranthene 0.0245 (J)
Indeno(1,2,3-cd)pyrene 0.0227 (J)
Phenanthrene 0.0163 (J)
Pyrene 0.0195 (J)

33-01973 TD: 0-10 ft
RE33-21-224206 0-1 ft SOIL
Acenaphthene 0.0222 (J)
Anthracene 0.0447 (J)
Benzo(a)anthracene 0.248
Benzo(a)pyrene 0.472
Benzo(b)fluoranthene 0.42
Benzo(g,h,i)perylene 0.273
Benzo(k)fluoranthene 0.136
Chrysene 0.377
Dibenz(a,h)anthracene 0.0625 (J)
Fluoranthene 0.322 (J)
Fluorene 0.0196 (J)
Indeno(1,2,3-cd)pyrene 0.184
Methylnaphthalene[1-] 0.0125 (J)
Methylnaphthalene[2-] 0.0161 (J)
Naphthalene 0.0143 (J)
Phenanthrene 0.189 (J)
Pyrene 0.354 (J)
RE33-21-224227 5-6 ft QBT3
Anthracene 0.0021 (J)
Benzo(a)anthracene 0.00838
Benzo(a)pyrene 0.0133
Benzo(b)fluoranthene 0.0154
Benzo(g,h,i)perylene 0.00734
Benzo(k)fluoranthene 0.00559
Chrysene 0.0136
Dibenz(a,h)anthracene 0.0021 (J)
Fluoranthene 0.0203 (J)
Indeno(1,2,3-cd)pyrene 0.00699
Phenanthrene 0.0143 (J)
Pyrene 0.0182 (J)

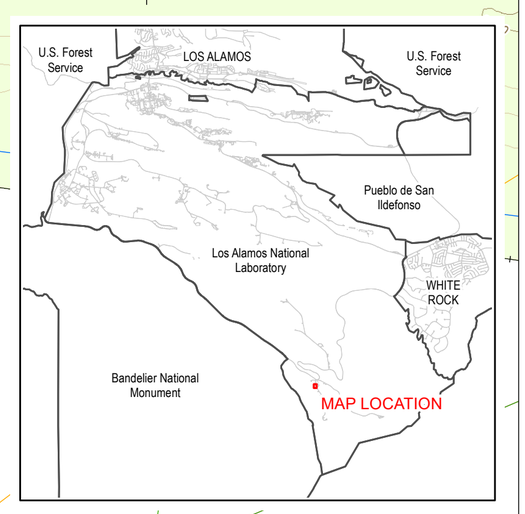
33-01974 TD: 0-10 ft
RE33-21-224283 0-1 ft SOIL
Acenaphthene 0.0108 (J)
Anthracene 0.0161 (J)
Benzo(a)anthracene 0.0609
Benzo(a)pyrene 0.0806
Benzo(b)fluoranthene 0.095
Benzo(g,h,i)perylene 0.0358
Benzo(k)fluoranthene 0.0358
Chrysene 0.0717
Dibenz(a,h)anthracene 0.0108 (J)
Fluoranthene 0.133
Fluorene 0.0108 (J)
Indeno(1,2,3-cd)pyrene 0.043
Phenanthrene 0.0735
Pyrene 0.124
RE33-21-224284 5-6 ft SOIL
Acenaphthene 0.034
Acenaphthylene 0.0596
Anthracene 0.0599
Benzo(a)anthracene 0.112
Benzo(a)pyrene 0.134
Benzo(b)fluoranthene 0.142
Benzo(g,h,i)perylene 0.0494
Benzo(k)fluoranthene 0.0561
Chrysene 0.115
Dibenz(a,h)anthracene 0.0165
Fluoranthene 0.235
Fluorene 0.0445
Indeno(1,2,3-cd)pyrene 0.062
Methylnaphthalene[1-] 0.014
Methylnaphthalene[2-] 0.0154
Naphthalene 0.0357
Phenanthrene 0.226
Pyrene 0.21
RE33-21-224285 9-10 ft QBT3
Anthracene 0.00213 (J)
Benzo(a)anthracene 0.00674
Benzo(a)pyrene 0.00816
Benzo(b)fluoranthene 0.00994
Benzo(g,h,i)perylene 0.00319 (J)
Benzo(k)fluoranthene 0.0039
Chrysene 0.00745
Fluoranthene 0.0142
Indeno(1,2,3-cd)pyrene 0.00426
Phenanthrene 0.00852
Pyrene 0.0124

33-01978 TD: 0-10 ft
RE33-21-224295 0-1 ft SOIL
Acenaphthene 0.044 (J+)
Anthracene 0.0586 (J+)
Benzo(a)anthracene 0.212 (J+)
Benzo(a)pyrene 0.271 (J+)
Benzo(b)fluoranthene 0.337 (J+)
Benzo(g,h,i)perylene 0.106 (J+)
Benzo(k)fluoranthene 0.132 (J+)
Chrysene 0.249 (J+)
Dibenz(a,h)anthracene 0.033 (J+)
Fluoranthene 0.502 (J+)
Fluorene 0.033 (J+)
Indeno(1,2,3-cd)pyrene 0.132 (J+)
Phenanthrene 0.304 (J+)
Pyrene 0.458 (J+)
RE33-21-224296 5-6 ft SOIL
Acenaphthene 0.00249 (J)
Anthracene 0.00284 (J)
Benzo(a)anthracene 0.00817 (J)
Benzo(a)pyrene 0.0103 (J)
Benzo(b)fluoranthene 0.0114 (J)
Benzo(g,h,i)perylene 0.00533 (J)
Benzo(k)fluoranthene 0.00426 (J)
Chrysene 0.00959 (J)
Fluoranthene 0.0185 (J)
Fluorene 0.00249 (J)
Indeno(1,2,3-cd)pyrene 0.00604 (J)
Naphthalene 0.00284 (J)
Phenanthrene 0.0149 (J)
Pyrene 0.0163 (J)
RE33-21-224297 9-10 ft QBT3
Benzo(a)anthracene 0.00244 (J)
Benzo(a)pyrene 0.0021 (J)
Benzo(b)fluoranthene 0.00244 (J)
Chrysene 0.00244 (J)
Fluoranthene 0.00419 (J)
Phenanthrene 0.00244 (J)
Pyrene 0.00384 (J)

33-01979 TD: 0-10 ft
RE33-21-224298 0-1 ft SOIL
Benzo(a)anthracene 0.0463 (J)
Benzo(a)pyrene 0.0606 (J)
Benzo(b)fluoranthene 0.0749 (J)
Benzo(g,h,i)perylene 0.0321 (J)
Benzo(k)fluoranthene 0.0285 (J)
Chrysene 0.0606 (J)
Fluoranthene 0.107

1638300.00 1638400.00 1638500.00

1740100.00 1740000.00 1739900.00 1739800.00



33-61065 TD: 0-6 ft
RE33-21-221939 0-0.8 ft FILL
Acenaphthene 0.885
Anthracene 1.23
Benzo(a)anthracene 2.08
Benzo(a)pyrene 2.57
Benzo(b)fluoranthene 2.76
Benzo(g,h,i)perylene 1.19
Benzo(k)fluoranthene 1.13
Carbazole 0.526
Chloroform 0.000956 (J)
Chrysene 2.19
Dibenz(a,h)anthracene 0.281 (J)
Fluoranthene 4.7
Fluorene 0.75
Indeno(1,2,3-cd)pyrene 1.37
Methylnaphthalene[1-] 0.288 (J)
Methylnaphthalene[2-] 0.316 (J)
Naphthalene 0.935
Phenanthrene 5.15
Pyrene 4.91
Toluene 0.000494 (J)
RE33-21-221940 2-3 ft QBT3
Acenaphthene 0.0184 (J)
Anthracene 0.0406
Benzo(a)anthracene 0.0868
Benzo(a)pyrene 0.11
Benzo(b)fluoranthene 0.111
Benzo(g,h,i)perylene 0.0465
Benzo(k)fluoranthene 0.0441
Carbazole 0.0205 (J)
Chrysene 0.0878
Dibenz(a,h)anthracene 0.0135 (J)
Fluoranthene 0.192
Fluorene 0.017 (J)
Indeno(1,2,3-cd)pyrene 0.0534
Naphthalene 0.0201 (J)
Phenanthrene 0.163
Pyrene 0.189

33-61003 TD: 0-6 ft
RE33-21-218099 0-1 ft FILL
Acenaphthene 0.0732 (J)
Anthracene 0.0971 (J)
Benzo(a)anthracene 0.252
Benzo(a)pyrene 0.312
Benzo(b)fluoranthene 0.325
Benzo(g,h,i)perylene 0.194
Benzo(k)fluoranthene 0.124 (J)
Carbazole 0.0613 (J)
Chrysene 0.276
Fluoranthene 0.535 (J)
Fluorene 0.0681 (J)
Indeno(1,2,3-cd)pyrene 0.198
Naphthalene 0.0698 (J)
Phenanthrene 0.499 (J)
Pyrene 0.492 (J-)
RE33-21-221915 2-3 ft FILL
Aroclor-1260 0.0136 (J)
RE33-21-218100 2-3 ft FILL
Acenaphthene 0.808
Anthracene 1.11
Benzo(a)anthracene 1.77
Benzo(a)pyrene 2.15
Benzo(b)fluoranthene 2.21
Benzo(g,h,i)perylene 1.25
Benzo(k)fluoranthene 0.842
Carbazole 0.563
Chrysene 1.9
Dibenz(a,h)anthracene 0.305 (J)
Fluoranthene 4.27 (J)
Fluorene 0.771
Indeno(1,2,3-cd)pyrene 1.34
Methylnaphthalene[1-] 0.32 (J)
Methylnaphthalene[2-] 0.38
Naphthalene 1.14
Phenanthrene 4.87 (J)
Pyrene 3.51 (J-)
Toluene 0.000475 (J)
RE33-21-218101 5-6 ft QBT3
Benzo(a)anthracene 0.02 (J)
Benzo(a)pyrene 0.0219 (J)
Benzo(b)fluoranthene 0.0222 (J)
Benzo(g,h,i)perylene 0.0141 (J)
Chrysene 0.0182 (J)
Fluoranthene 0.037 (J)
Indeno(1,2,3-cd)pyrene 0.0152 (J)
Phenanthrene 0.0341 (J)
Pyrene 0.0333 (J-)

33-61009 TD: 0-6 ft
RE33-21-218117 0-1 ft FILL
Acenaphthene 1.18 (J)
Anthracene 1.81 (J)
Benzo(a)anthracene 3.1 (J)
Benzo(a)pyrene 3.7 (J)
Benzo(b)fluoranthene 3.61 (J)
Benzo(g,h,i)perylene 1.93 (J)
Benzo(k)fluoranthene 1.5 (J)
Carbazole 0.926 (J)
Chrysene 3.13 (J)
Dibenz(a,h)anthracene 0.535
Dibenzofuran 0.628 (J)
Fluoranthene 6.28 (J)
Fluorene 1.05 (J)
Indeno(1,2,3-cd)pyrene 2.2 (J)
Methylnaphthalene[1-] 0.316
Methylnaphthalene[2-] 0.427
Naphthalene 1.23 (J)
Phenanthrene 6.75 (J)
Pyrene 5.71 (J)
RE33-21-218118 2-3 ft QBT3
Anthracene 0.0127 (J-)
Benzo(a)anthracene 0.0305 (J)
Benzo(a)pyrene 0.0332 (J)
Benzo(b)fluoranthene 0.0332 (J)
Benzo(g,h,i)perylene 0.0236 (J)
Benzo(k)fluoranthene 0.0154 (J)
Chrysene 0.0284 (J)
Fluoranthene 0.0568 (J)
Indeno(1,2,3-cd)pyrene 0.0202 (J)
Phenanthrene 0.0442 (J)
Pyrene 0.0431 (J)
RE33-21-218119 5-6 ft QBT3
Acenaphthene 0.018 (J)
Anthracene 0.0259 (J-)
Benzo(a)anthracene 0.0546 (J)
Benzo(a)pyrene 0.0556 (J)
Benzo(b)fluoranthene 0.0563 (J)
Benzo(g,h,i)perylene 0.0373 (J)
Benzo(k)fluoranthene 0.0235 (J)
Carbazole 0.0142 (J)
Chrysene 0.048 (J)
Dibenz(a,h)anthracene 0.0114 (J)
Fluoranthene 0.116 (J)
Fluorene 0.0155 (J)
Indeno(1,2,3-cd)pyrene 0.0366 (J)
Naphthalene 0.0114 (J-)
Phenanthrene 0.0998 (J)
Pyrene 0.0836 (J)

33-61001 TD: 0-6 ft
RE33-21-218093 0-1 ft FILL
Benzo(a)anthracene 0.0632 (J)
Benzo(a)pyrene 0.0529 (J)
Benzo(b)fluoranthene 0.0581 (J)
Fluoranthene 0.0922 (J)
Phenanthrene 0.0973 (J)
Pyrene 0.0854 (J-)
RE33-21-218094 2-3 ft FILL
Acenaphthene 0.113 (J)
Anthracene 0.116 (J)
Benzo(a)anthracene 0.352 (J)
Benzo(a)pyrene 0.436
Benzo(b)fluoranthene 0.479
Benzo(g,h,i)perylene 0.269 (J)
Benzo(k)fluoranthene 0.207 (J)
Chrysene 0.374
Fluoranthene 0.788 (J)
Indeno(1,2,3-cd)pyrene 0.247 (J)
Naphthalene 0.000437 (J)
Phenanthrene 0.77 (J)
Pyrene 0.715 (J-)
RE33-21-218095 5-6 ft QBT3
Anthracene 0.0194 (J)
Benzo(a)anthracene 0.0485
Benzo(a)pyrene 0.0506
Benzo(b)fluoranthene 0.0517
Benzo(g,h,i)perylene 0.0337 (J)
Benzo(k)fluoranthene 0.0233 (J)
Benzoic Acid 0.436 (J)
Bis(2-ethylhexyl)phthalate 0.917 (J)
Carbazole 0.0133 (J)
Chrysene 0.0474
Fluoranthene 0.105 (J)
Fluorene 0.0133 (J)
Indeno(1,2,3-cd)pyrene 0.0348 (J)
Phenanthrene 0.107 (J)
Pyrene 0.0887 (J-)

33-61008 TD: 0-6 ft
RE33-21-218114 0-0.6 ft FILL
Benzo(a)anthracene 0.0902 (J-)
Benzo(a)pyrene 0.0902 (J-)
Benzo(b)fluoranthene 0.107 (J-)
Benzo(g,h,i)perylene 0.0589 (J-)
Chrysene 0.0755 (J-)
Fluoranthene 0.149 (J-)
Phenanthrene 0.131 (J-)
Pyrene 0.147 (J-)
RE33-21-218116 5-6 ft QBT3
Bis(2-ethylhexyl)phthalate 0.039

33-61064 TD: 0-6 ft
RE33-21-221936 0-0.8 ft SOIL
Benzo(a)anthracene 0.293
Benzo(a)pyrene 0.406
Benzo(b)fluoranthene 0.465
Benzo(g,h,i)perylene 0.221
Benzo(k)fluoranthene 0.187 (J)
Chrysene 0.347
Dibenz(a,h)anthracene 0.0609 (J)
Fluoranthene 0.541
Indeno(1,2,3-cd)pyrene 0.238
Phenanthrene 0.318
Pyrene 0.607
RE33-21-221937 2-3 ft QBT3
Acenaphthene 0.0213 (J)
Anthracene 0.0385
Benzo(a)anthracene 0.0826
Benzo(a)pyrene 0.103
Benzo(b)fluoranthene 0.108
Benzo(g,h,i)perylene 0.0475
Benzo(k)fluoranthene 0.0441
Bis(2-ethylhexyl)phthalate 0.011 (J)
Carbazole 0.0193 (J)
Chrysene 0.0854
Dibenz(a,h)anthracene 0.0131 (J)
Di-n-octylphthalate 0.0251 (J)
Fluoranthene 0.17
Fluorene 0.0237 (J)
Indeno(1,2,3-cd)pyrene 0.0558
Isopropyltoluene[4-] 0.000399 (J)
Naphthalene 0.0231 (J)
Phenanthrene 0.168
Pyrene 0.176
RE33-21-221938 5-6 ft QBT3
Di-n-octylphthalate 0.0324 (J)

33-61006 TD: 0-6 ft
RE33-21-221920 0-1 ft FILL
Aroclor-1260 0.00157 (J)
RE33-21-218108 0-1 ft FILL
Acenaphthene 0.107 (J)
Anthracene 0.121 (J-)
Benzo(a)anthracene 0.336 (J-)
Benzo(a)pyrene 0.343 (J-)
Benzo(b)fluoranthene 0.364 (J-)
Benzo(g,h,i)perylene 0.215 (J-)
Benzo(k)fluoranthene 0.152 (J)
Carbazole 0.0787 (J)
Chrysene 0.29 (J-)
Dibenz(a,h)anthracene 0.0577 (J)
Fluoranthene 0.652 (J-)
Fluorene 0.077 (J)
Indeno(1,2,3-cd)pyrene 0.227 (J-)
Naphthalene 0.0927 (J-)
Phenanthrene 0.638 (J-)
Pyrene 0.588 (J-)
RE33-21-218110 5-6 ft QBT3
Bis(2-ethylhexyl)phthalate 0.0136 (J)

33-61063 TD: 0-6 ft
RE33-21-221933 0-0.5 ft SOIL
Acenaphthene 0.0196 (J)
Anthracene 0.021 (J)
Aroclor-1260 0.00625
Benzo(a)anthracene 0.074
Benzo(a)pyrene 0.106
Benzo(b)fluoranthene 0.116
Benzo(g,h,i)perylene 0.058
Benzo(k)fluoranthene 0.0453
Chloroform 0.00044 (J)
Chrysene 0.0943
Fluoranthene 0.177
Fluorene 0.017 (J)
Indeno(1,2,3-cd)pyrene 0.0635
Phenanthrene 0.148
Pyrene 0.173
RE33-21-221935 5-6 ft QBT3
Di-n-octylphthalate 0.0191 (J)

33-61005 TD: 0-6 ft
RE33-21-218106 2-3 ft QBT3
Tetrachlorobenzene[1,2,4,5] 0.118 (J-)

33-61002 TD: 0-6 ft
RE33-21-218096 0-1 ft FILL
Bis(2-ethylhexyl)phthalate 0.0962

33-61010 TD: 0-6 ft
RE33-21-218120 0-1 ft FILL
Acenaphthene 0.0135 (J)
Anthracene 0.0196 (J)
Benzo(a)anthracene 0.0577 (J)
Benzo(a)pyrene 0.068 (J)
Benzo(b)fluoranthene 0.0801 (J)
Benzo(g,h,i)perylene 0.0402 (J)
Benzo(k)fluoranthene 0.0313 (J)
Benzoic Acid 0.435 (J)
Carbazole 0.0128 (J)
Chrysene 0.0548 (J)
Fluoranthene 0.12 (J)
Fluorene 0.0135 (J)
Indeno(1,2,3-cd)pyrene 0.0427 (J)
Phenanthrene 0.0982 (J)
Pyrene 0.112 (J)

33-61004 TD: 0-6 ft
RE33-21-218104 5-6 ft QBT3
Di-n-octylphthalate 0.0183 (J)

33-61066 TD: 0-6 ft
RE33-21-221942 0-1 ft FILL
Acenaphthene 0.159 (J)
Anthracene 0.252
Benzo(a)anthracene 0.602
Benzo(a)pyrene 0.763
Benzo(b)fluoranthene 0.812
Benzo(g,h,i)perylene 0.362
Benzo(k)fluoranthene 0.326
Carbazole 0.143 (J)
Chrysene 0.632
Fluoranthene 1.34 (J)
Fluorene 0.17 (J)
Indeno(1,2,3-cd)pyrene 0.393
Methylnaphthalene[2-] 0.0598 (J)
Naphthalene 0.174 (J)
Phenanthrene 1.32
Pyrene 1.38
RE33-21-221943 2-3 ft FILL
Acenaphthene 0.0241 (J)
Anthracene 0.0194 (J)
Benzo(a)anthracene 0.0522
Benzo(a)pyrene 0.064
Benzo(b)fluoranthene 0.0723
Benzo(g,h,i)perylene 0.0306 (J)
Benzo(k)fluoranthene 0.0277 (J)
Carbazole 0.0126 (J)
Chrysene 0.054
Di-n-octylphthalate 0.0284 (J)
Fluoranthene 0.121
Fluorene 0.0194 (J)
Indeno(1,2,3-cd)pyrene 0.0327 (J)
Methylnaphthalene[2-] 0.0119 (J)
Naphthalene 0.0353 (J)
Phenanthrene 0.148
Pyrene 0.127
RE33-21-221944 5-6 ft FILL
Acetone 0.00463 (J)
Benzo(a)anthracene 0.0845 (J)
Benzo(a)pyrene 0.0812 (J)
Benzo(b)fluoranthene 0.0862 (J)
Chrysene 0.0659 (J)
Fluoranthene 0.14 (J)
Hexanone[2-] 0.00779 (J-)
Naphthalene 0.000497 (J)
Phenanthrene 0.162 (J)
Pyrene 0.139 (J)

33-01078 TD: 2-9 ft
RE33-20-190137 2-3 ft QBT3
Diethylphthalate 0.0307 (J)
Di-n-butylphthalate 0.0553
Isophorone 0.244 (J)

33-01076 TD: 2-9 ft
RE33-20-190135 2-3 ft QBT3
Bis(2-ethylhexyl)phthalate 0.0135 (J)
Diethylphthalate 0.017 (J)
Di-n-butylphthalate 0.0323 (J)
Isophorone 0.236 (J)
RE33-20-190149 5-6 ft QBT3
Diethylphthalate 0.0223 (J)
Di-n-butylphthalate 0.0393
Isophorone 0.274 (J)

33-61007 TD: 0-6 ft
RE33-21-221923 0-1 ft FILL
Aroclor-1260 0.00213 (J)
RE33-21-218111 0-1 ft FILL
Benzo(a)anthracene 0.0781 (J-)
Benzo(a)pyrene 0.0712 (J-)
Benzo(b)fluoranthene 0.0816 (J-)
Benzo(g,h,i)perylene 0.0573 (J-)
Chrysene 0.059 (J-)
Fluoranthene 0.116 (J-)
Phenanthrene 0.101 (J-)
Pyrene 0.115 (J-)

33-01077 TD: 2-9 ft
RE33-20-190136 2-3 ft QBT3
Diethylphthalate 0.0254 (J)
Di-n-butylphthalate 0.0824
Isophorone 0.238 (J)
RE33-20-190150 5-6 ft QBT3
Diethylphthalate 0.0223 (J)
Di-n-butylphthalate 0.0543
Isophorone 0.249 (J)

SWMU 33-005(a)
SWMU 33-005(b)
SWMU 33-005(c)
SWMU 33-011(a)
SOUTH SITE
33-01073
33-21
33-309
33-310
33-311
33-312
33-313
33-325
33-306
33-328
6520
6530
6540

0 5 10 20 30 40
Feet

STATE PLANE COORDINATE SYSTEM
NEW MEXICO CENTRAL ZONE, US FT
NORTH AMERICAN DATUM 1983

N

- Sampling location
- Structure
- SWMU or AOC
- SWMU 33-011(a)
- Water line
- Gas line
- Electric line
- Communication line
- Fence
- Paved road
- Unpaved road
- Index contour, 10-ft interval
- Terrain contour, 2-ft interval

Map: map_21-0006-50_33-011(a)_org 8/4/2021 DFRANK
edit: JSAMMONS

Disclaimer: This map was created for work processes associated with the LLCC. All other uses for this map should be confirmed with N3B staff.

Note: All units are in mg/kg

PLATE 11

Organic chemicals detected at SWMU 33-011(a)

1638700.00 1638725.00 1638750.00 1638775.00 1638800.00

1740425.00 1740400.00 1740375.00 1740350.00 1740300.00 1740275.00 1740250.00

SWMU 33-004(a)

SWMU 33-012(a)

SWMU 33-004(i)

33-61100 TD: 0-5 ft
RE33-21-222577 0-1 ft FILL
Acenaphthene 0.13
Acenaphthylene 0.13
Anthracene 0.36
Aroclor-1254 8.04
Aroclor-1260 3.86
Benzo(a)anthracene 3.36
Benzo(a)pyrene 4.2 (J+)
Benzo(b)fluoranthene 5.32 (J+)
Benzo(g,h,i)perylene 2.3 (J+)
Benzo(k)fluoranthene 1.98
Chrysene 3.37 (J+)
Dibenz(a,h)anthracene 0.723
Fluoranthene 2.51 (J+)
Fluorene 0.103
Indeno(1,2,3-cd)pyrene 3 (J+)
Methylnaphthalene[1-] 0.02 (J)
Methylnaphthalene[2-] 0.0167 (J)
Naphthalene 0.0367
Phenanthrene 0.887 (J+)
Pyrene 3.84 (J+)
RE33-21-222578 2-3 ft FILL
Acenaphthene 0.00478
Anthracene 0.00785
Aroclor-1254 0.129
Aroclor-1260 0.0679
Benzo(a)anthracene 0.0232
Benzo(a)pyrene 0.0242 (J+)
Benzo(b)fluoranthene 0.028 (J+)
Benzo(g,h,i)perylene 0.0174 (J+)
Benzo(k)fluoranthene 0.0113
Chrysene 0.0225 (J+)
Dibenz(a,h)anthracene 0.00478
Fluoranthene 0.0423 (J+)
Fluorene 0.00478
Indeno(1,2,3-cd)pyrene 0.0198 (J+)
Phenanthrene 0.0369 (J+)
Pyrene 0.0441 (J+)
RE33-21-222579 4-5 ft FILL
Acenaphthene 0.00276 (J)
Anthracene 0.00483
Aroclor-1254 0.0972
Aroclor-1260 0.0492
Benzo(a)anthracene 0.0173
Benzo(a)pyrene 0.02 (J+)
Benzo(b)fluoranthene 0.0217 (J+)
Benzo(g,h,i)perylene 0.0166 (J+)
Benzo(k)fluoranthene 0.00828
Chrysene 0.0173 (J+)
Dibenz(a,h)anthracene 0.00449
Fluoranthene 0.0255 (J+)
Fluorene 0.00276 (J)
Indeno(1,2,3-cd)pyrene 0.0186 (J+)
Phenanthrene 0.0228 (J+)
Pyrene 0.0335 (J+)

33-61099 TD: 0-5 ft
RE33-21-222574 0-1 ft FILL
Acenaphthene 0.0562
Anthracene 0.137
Aroclor-1254 5.93
Aroclor-1260 2.63
Benzo(a)anthracene 0.478
Benzo(a)pyrene 0.499 (J+)
Benzo(b)fluoranthene 0.59 (J+)
Benzo(g,h,i)perylene 0.33 (J+)
Benzo(k)fluoranthene 0.232
Chrysene 0.502 (J+)
Dibenz(a,h)anthracene 0.0913
Fluoranthene 0.808 (J+)
Fluorene 0.0456
Indeno(1,2,3-cd)pyrene 0.383 (J+)
Phenanthrene 0.541 (J+)
Pyrene 0.888 (J+)
RE33-21-222575 2-3 ft FILL
Aroclor-1254 0.634
Aroclor-1260 0.28
Benzo(a)anthracene 0.0411
Benzo(a)pyrene 0.0377 (J+)
Benzo(b)fluoranthene 0.0445 (J+)
Benzo(g,h,i)perylene 0.0274 (J+)
Benzo(k)fluoranthene 0.0177 (J)
Chrysene 0.0377 (J+)
Fluoranthene 0.0753 (J+)
Indeno(1,2,3-cd)pyrene 0.0308 (J+)
Phenanthrene 0.0548 (J+)
Pyrene 0.0616 (J+)
RE33-21-222576 4-5 ft FILL
Acenaphthene 0.0189
Anthracene 0.0276
Aroclor-1254 0.0767
Aroclor-1260 0.0367
Benzo(a)anthracene 0.0451
Benzo(a)pyrene 0.0433 (J+)
Benzo(b)fluoranthene 0.0475 (J+)
Benzo(g,h,i)perylene 0.0321 (J+)
Benzo(k)fluoranthene 0.0192
Chrysene 0.0433 (J+)
Dibenz(a,h)anthracene 0.00838
Fluoranthene 0.104 (J+)
Fluorene 0.0164
Indeno(1,2,3-cd)pyrene 0.0353 (J+)
Methylnaphthalene[1-] 0.00419
Methylnaphthalene[2-] 0.00629
Naphthalene 0.0185
Phenanthrene 0.101 (J+)
Pyrene 0.1 (J+)

33-60992 TD: 0-5 ft
RE33-21-217989 0-1 ft SOIL
Aroclor-1254 12.9 (J-)
Aroclor-1260 4.84 (J-)
RE33-21-222920 0-1 ft FILL
Acenaphthene 0.0354
Anthracene 0.0672
Benzo(a)anthracene 0.244
Benzo(a)pyrene 0.237 (J+)
Benzo(b)fluoranthene 0.294 (J+)
Benzo(g,h,i)perylene 0.173 (J+)
Benzo(k)fluoranthene 0.11
Chrysene 0.244 (J+)
Dibenz(a,h)anthracene 0.0425
Fluoranthene 0.407 (J+)
Fluorene 0.0248 (J)
Indeno(1,2,3-cd)pyrene 0.191 (J+)
Phenanthrene 0.262 (J+)
Pyrene 0.548 (J+)
RE33-21-217990 2-3 ft FILL
Aroclor-1254 0.652
Aroclor-1260 0.315
RE33-21-222521 2-3 ft FILL
Acenaphthene 0.0903
Anthracene 0.149
Benzo(a)anthracene 0.415
Benzo(a)pyrene 0.44 (J+)
Benzo(b)fluoranthene 0.514 (J+)
Benzo(g,h,i)perylene 0.291 (J+)
Benzo(k)fluoranthene 0.199
Chrysene 0.415 (J+)
Dibenz(a,h)anthracene 0.078
Fluoranthene 0.656 (J+)
Fluorene 0.0532
Indeno(1,2,3-cd)pyrene 0.337 (J+)
Naphthalene 0.0213 (J)
Phenanthrene 0.507 (J+)
Pyrene 0.947 (J+)
RE33-21-217991 4-5 ft FILL
Aroclor-1254 0.0818
Aroclor-1260 0.0405
RE33-21-222522 4-5 ft FILL
Acenaphthene 0.0213 (J)
Anthracene 0.0336
Benzo(a)anthracene 0.114
Benzo(a)pyrene 0.114 (J+)
Benzo(b)fluoranthene 0.139 (J+)
Benzo(g,h,i)perylene 0.0782 (J+)
Benzo(k)fluoranthene 0.0569
Chrysene 0.114 (J+)
Dibenz(a,h)anthracene 0.0213 (J)
Fluoranthene 0.192 (J+)
Indeno(1,2,3-cd)pyrene 0.0853 (J+)
Phenanthrene 0.153 (J+)
Pyrene 0.242 (J+)

33-60993 TD: 0-5 ft
RE33-21-217992 0-1 ft FILL
Aroclor-1254 9 (J-)
Aroclor-1260 4.05 (J-)
RE33-21-222523 0-1 ft FILL
Acenaphthene 0.168
Anthracene 0.298
Benzo(a)anthracene 0.918
Benzo(a)pyrene 0.816 (J+)
Benzo(b)fluoranthene 1.02 (J+)
Benzo(g,h,i)perylene 0.434 (J+)
Benzo(k)fluoranthene 0.406
Chrysene 0.883 (J+)
Dibenz(a,h)anthracene 0.137
Fluoranthene 1.52 (J+)
Fluorene 0.123
Indeno(1,2,3-cd)pyrene 0.536 (J+)
Methylnaphthalene[1-] 0.0245 (J)
Methylnaphthalene[2-] 0.0175 (J)
Naphthalene 0.028 (J)
Phenanthrene 1.18 (J+)
Pyrene 2.1 (J+)
RE33-21-217993 2-3 ft FILL
Aroclor-1254 0.195
Aroclor-1260 0.0928
RE33-21-222524 2-3 ft FILL
Acenaphthene 0.0371
Anthracene 0.0472
Benzo(a)anthracene 0.196
Benzo(a)pyrene 0.216 (J+)
Benzo(b)fluoranthene 0.25 (J+)
Benzo(g,h,i)perylene 0.182 (J+)
Benzo(k)fluoranthene 0.101
Chrysene 0.206 (J+)
Dibenz(a,h)anthracene 0.0439
Fluoranthene 0.337 (J+)
Fluorene 0.0202 (J)
Indeno(1,2,3-cd)pyrene 0.189 (J+)
Phenanthrene 0.223 (J+)
Pyrene 0.456 (J+)
RE33-21-217994 4-5 ft FILL
Aroclor-1254 0.109
Aroclor-1260 0.0611
RE33-21-222525 4-5 ft FILL
Anthracene 0.0245 (J+)
Benzo(a)anthracene 0.0806 (J+)
Benzo(a)pyrene 0.0806 (J+)
Benzo(b)fluoranthene 0.0982 (J+)
Benzo(g,h,i)perylene 0.0526 (J+)
Benzo(k)fluoranthene 0.0421 (J+)
Chrysene 0.0806 (J+)
Fluoranthene 0.14 (J+)
Indeno(1,2,3-cd)pyrene 0.0596 (J+)
Phenanthrene 0.112 (J+)
Pyrene 0.182 (J+)

33-61098 TD: 0-5 ft
RE33-21-222571 0-1 ft FILL
Acenaphthene 0.0507 (J)
Anthracene 0.0978 (J)
Aroclor-1254 7.06
Aroclor-1260 1.69
Benzo(a)anthracene 0.229 (J+)
Benzo(a)pyrene 0.267 (J+)
Benzo(b)fluoranthene 0.273 (J+)
Benzo(g,h,i)perylene 0.229 (J+)
Benzo(k)fluoranthene 0.103
Chrysene 0.232 (J+)
Dibenz(a,h)anthracene 0.0646 (J+)
Fluoranthene 0.475 (J+)
Fluorene 0.0489 (J)
Indeno(1,2,3-cd)pyrene 0.25 (J+)
Methylnaphthalene[1-] 0.0105 (J)
Methylnaphthalene[2-] 0.014 (J+)
Naphthalene 0.0297 (J)
Phenanthrene 0.328 (J)
Pyrene 0.314 (J)
RE33-21-222572 2-3 ft FILL
Acenaphthene 0.00205 (J)
Anthracene 0.00513 (J)
Aroclor-1254 0.649
Aroclor-1260 0.153
Benzo(a)anthracene 0.0154 (J+)
Benzo(a)pyrene 0.0161 (J+)
Benzo(b)fluoranthene 0.0171 (J+)
Benzo(g,h,i)perylene 0.0161 (J+)
Benzo(k)fluoranthene 0.00718
Chrysene 0.0154 (J+)
Dibenz(a,h)anthracene 0.00479 (J+)
Fluoranthene 0.0298 (J)
Fluorene 0.00205 (J)
Indeno(1,2,3-cd)pyrene 0.0164 (J+)
Phenanthrene 0.0164 (J)
Pyrene 0.0188 (J)
RE33-21-222573 4-5 ft FILL
Acenaphthene 0.00313 (J)
Anthracene 0.00661 (J)
Aroclor-1254 1.3
Aroclor-1260 0.299
Benzo(a)anthracene 0.0153 (J+)
Benzo(a)pyrene 0.0163 (J+)
Benzo(b)fluoranthene 0.0177 (J+)
Benzo(g,h,i)perylene 0.0163 (J+)
Benzo(k)fluoranthene 0.00661
Chrysene 0.0156 (J+)
Dibenz(a,h)anthracene 0.00452 (J+)
Fluoranthene 0.0337 (J)
Fluorene 0.00382 (J)
Indeno(1,2,3-cd)pyrene 0.0167 (J+)
Naphthalene 0.0243 (J)
Phenanthrene 0.0236 (J)
Pyrene 0.0226 (J)

33-61097 TD: 0-5 ft
RE33-21-222568 0-1 ft FILL
Acenaphthene 0.302 (J)
Anthracene 0.611 (J)
Aroclor-1254 11.6
Aroclor-1260 2.85
Benzo(a)anthracene 1.16 (J+)
Benzo(a)pyrene 1.08 (J+)
Benzo(b)fluoranthene 1.18 (J+)
Benzo(g,h,i)perylene 0.675 (J+)
Benzo(k)fluoranthene 0.46
Chrysene 1.08 (J+)
Dibenz(a,h)anthracene 0.223 (J+)
Fluoranthene 2.69 (J)
Fluorene 0.266 (J)
Indeno(1,2,3-cd)pyrene 0.783 (J+)
Methylnaphthalene[1-] 0.0503 (J+)
Methylnaphthalene[2-] 0.0503 (J+)
Naphthalene 0.079 (J)
Phenanthrene 1.87 (J)
Pyrene 1.77 (J)
RE33-21-222569 2-3 ft FILL
Aroclor-1254 0.263
Aroclor-1260 0.0602
Benzo(a)anthracene 0.0439 (J+)
Benzo(a)pyrene 0.00475 (J+)
Benzo(b)fluoranthene 0.00475 (J+)
Benzo(g,h,i)perylene 0.00475 (J+)
Benzo(k)fluoranthene 0.00219 (J)
Chrysene 0.00402 (J+)
Fluoranthene 0.00914 (J+)
Indeno(1,2,3-cd)pyrene 0.00475 (J+)
Phenanthrene 0.00585 (J)
Pyrene 0.00621 (J+)
RE33-21-222570 4-5 ft FILL
Anthracene 0.0177 (J)
Aroclor-1254 0.919
Aroclor-1260 0.221
Benzo(a)anthracene 0.0407 (J+)
Benzo(a)pyrene 0.039 (J+)
Benzo(b)fluoranthene 0.0407 (J+)
Benzo(g,h,i)perylene 0.0354 (J+)
Benzo(k)fluoranthene 0.0159 (J)
Chrysene 0.039 (J+)
Dibenz(a,h)anthracene 0.0106 (J+)
Fluoranthene 0.0868 (J+)
Indeno(1,2,3-cd)pyrene 0.039 (J+)
Phenanthrene 0.0549 (J+)
Pyrene 0.0585 (J+)

33-61096 TD: 0-5 ft
RE33-21-222565 0-1 ft FILL
Acenaphthene 0.329 (J)
Anthracene 0.901 (J)
Aroclor-1254 0.617
Aroclor-1260 0.191
Benzo(a)anthracene 3.97 (J+)
Benzo(a)pyrene 3.6 (J+)
Benzo(b)fluoranthene 4.26 (J+)
Benzo(g,h,i)perylene 1.77 (J+)
Benzo(k)fluoranthene 1.65
Chrysene 3.9 (J+)
Dibenz(a,h)anthracene 0.711 (J+)
Fluoranthene 8.39 (J)
Fluorene 0.243 (J)
Indeno(1,2,3-cd)pyrene 2.27 (J+)
Naphthalene 0.104 (J)
Phenanthrene 2.69 (J)
Pyrene 4.9 (J)
RE33-21-222566 2-3 ft FILL
Acenaphthene 0.00596 (J)
Anthracene 0.331 (J)
Aroclor-1254 0.0455 (J)
Aroclor-1260 0.0441 (J)
Benzo(a)anthracene 0.662 (J)
Benzo(a)pyrene 0.555 (J)
Benzo(b)fluoranthene 0.676 (J)
Benzo(g,h,i)perylene 0.331 (J)
Benzo(k)fluoranthene 0.246 (J)
Chrysene 0.652 (J)
Dibenz(a,h)anthracene 0.11
Fluoranthene 1.52 (J)
Fluorene 0.164 (J)
Indeno(1,2,3-cd)pyrene 0.402 (J)
Methylnaphthalene[1-] 0.032 (J)
Methylnaphthalene[2-] 0.0356
Naphthalene 0.0676
Phenanthrene 1.25 (J)
Pyrene 1 (J)
RE33-21-222551 2-3 ft FILL
Acenaphthene 1.12 (J)
Anthracene 1.96 (J)
Aroclor-1254 0.0446
Aroclor-1260 0.0291 (J)
Benzo(a)anthracene 3.04 (J)
Benzo(a)pyrene 2.42 (J)
Benzo(b)fluoranthene 2.97 (J)
Benzo(g,h,i)perylene 1.52 (J)
Benzo(k)fluoranthene 1.1 (J)
Chrysene 2.75 (J)
Dibenz(a,h)anthracene 0.466
Fluoranthene 5.87 (J)
Fluorene 0.984 (J)
Indeno(1,2,3-cd)pyrene 1.65 (J)
Methylnaphthalene[1-] 0.199
Methylnaphthalene[2-] 0.271
Naphthalene 0.538
Phenanthrene 6.6 (J)
Pyrene 5.93 (J)
RE33-21-222552 4-5 ft FILL
Acenaphthene 0.00588 (J)
Anthracene 0.0059 (J)
Aroclor-1254 0.00717 (J)
Aroclor-1260 0.00806 (J)
Benzo(a)anthracene 0.0197 (J)
Benzo(a)pyrene 0.0194 (J)
Benzo(b)fluoranthene 0.0225 (J)
Benzo(g,h,i)perylene 0.0138 (J)
Benzo(k)fluoranthene 0.0083 (J)
Chrysene 0.0187 (J)
Dibenz(a,h)anthracene 0.00346
Fluoranthene 0.0363 (J)
Fluorene 0.00519 (J)
Indeno(1,2,3-cd)pyrene 0.0149 (J)
Methylnaphthalene[2-] 0.00173 (J)
Naphthalene 0.0045
Phenanthrene 0.0346 (J)
Pyrene 0.0412 (J)

33-61095 TD: 0-5 ft
RE33-21-222562 0-1 ft FILL
Acenaphthene 1.65 (J)
Acenaphthylene 0.0556 (J)
Anthracene 2.62 (J)
Aroclor-1254 12.3
Aroclor-1260 3.01
Benzo(a)anthracene 3.5 (J+)
Benzo(a)pyrene 3.13 (J+)
Benzo(b)fluoranthene 3.39 (J+)
Benzo(g,h,i)perylene 1.92 (J+)
Benzo(k)fluoranthene 1.27
Chrysene 3.33 (J+)
Dibenz(a,h)anthracene 0.612 (J+)
Fluoranthene 8.77 (J)
Fluorene 1.56 (J)
Indeno(1,2,3-cd)pyrene 2.32 (J+)
Methylnaphthalene[1-] 0.396
Methylnaphthalene[2-] 0.563 (J+)
Naphthalene 1.51 (J)
Phenanthrene 8.05 (J)
Pyrene 5.6 (J)
RE33-21-222563 2-3 ft FILL
Acenaphthene 1.72 (J)
Anthracene 2.88 (J)
Aroclor-1254 17.3
Aroclor-1260 4.61
Benzo(a)anthracene 4.43 (J+)
Benzo(a)pyrene 3.66 (J+)
Benzo(b)fluoranthene 4.45 (J+)
Benzo(g,h,i)perylene 2.22 (J+)
Benzo(k)fluoranthene 1.6
Chrysene 4.21 (J+)
Dibenz(a,h)anthracene 0.664 (J+)
Fluoranthene 9.04 (J)
Fluorene 1.56 (J)
Indeno(1,2,3-cd)pyrene 2.6 (J+)
Methylnaphthalene[1-] 0.339
Methylnaphthalene[2-] 0.491 (J+)
Naphthalene 1.24 (J)
Phenanthrene 10.3 (J)
Pyrene 10.9 (J)
RE33-21-222564 4-5 ft FILL
Acenaphthene 0.0433 (J)
Acenaphthylene 0.0294
Anthracene 0.104 (J)
Aroclor-1254 1.94
Aroclor-1260 0.47
Benzo(a)anthracene 0.258 (J+)
Benzo(a)pyrene 0.292 (J+)
Benzo(b)fluoranthene 0.329 (J+)
Benzo(g,h,i)perylene 0.228 (J+)
Benzo(k)fluoranthene 0.121
Chrysene 0.256 (J+)
Dibenz(a,h)anthracene 0.0892 (J+)
Fluoranthene 0.45 (J)
Fluorene 0.0433 (J)
Indeno(1,2,3-cd)pyrene 0.273 (J+)
Methylnaphthalene[1-] 0.0121 (J)
Methylnaphthalene[2-] 0.0138 (J+)
Naphthalene 0.0294 (J)
Phenanthrene 0.27 (J)
Pyrene 0.305 (J)

33-61094 TD: 0-5 ft
RE33-21-222559 0-1 ft FILL
Acenaphthene 0.935 (J+)
Acenaphthylene 0.0167 (J+)
Anthracene 1.47 (J+)
Aroclor-1254 8.66
Aroclor-1260 3.85
Benzo(a)anthracene 2.67 (J+)
Benzo(a)pyrene 2.44 (J+)
Benzo(b)fluoranthene 2.82 (J+)
Benzo(g,h,i)perylene 1.5 (J+)
Benzo(k)fluoranthene 1.04 (J+)
Chrysene 2.53 (J+)
Dibenz(a,h)anthracene 0.424 (J+)
Fluoranthene 5.12 (J+)
Fluorene 0.768 (J+)
Indeno(1,2,3-cd)pyrene 1.76 (J+)
Methylnaphthalene[1-] 0.154 (J+)
Methylnaphthalene[2-] 0.18 (J+)
Naphthalene 0.361 (J+)
Phenanthrene 4.92 (J+)
Pyrene 5.49 (J+)
RE33-21-222560 2-3 ft FILL
Acenaphthene 0.365 (J)
Anthracene 0.646 (J)
Aroclor-1254 7.74
Aroclor-1260 3.57
Benzo(a)anthracene 1.08 (J)
Benzo(a)pyrene 0.978 (J)
Benzo(b)fluoranthene 1.03 (J)
Benzo(g,h,i)perylene 0.703 (J)
Benzo(k)fluoranthene 0.412 (J)
Chrysene 0.988 (J)
Dibenz(a,h)anthracene 0.211
Fluoranthene 2.47 (J)
Fluorene 0.338 (J)
Indeno(1,2,3-cd)pyrene 0.777 (J)
Methylnaphthalene[1-] 0.077
Methylnaphthalene[2-] 0.0938
Naphthalene 0.228
Phenanthrene 2.11 (J)
Pyrene 1.83 (J)
RE33-21-222561 4-5 ft FILL
Acenaphthene 0.22 (J)
Anthracene 0.376 (J)
Aroclor-1254 8.17
Aroclor-1260 2.14
Benzo(a)anthracene 0.585 (J+)
Benzo(a)pyrene 0.56 (J+)
Benzo(b)fluoranthene 0.585 (J+)
Benzo(g,h,i)perylene 0.491 (J+)
Benzo(k)fluoranthene 0.211
Chrysene 0.558 (J+)
Dibenz(a,h)anthracene 0.141 (J+)
Fluoranthene 1.46 (J)
Fluorene 0.189 (J)
Indeno(1,2,3-cd)pyrene 0.518 (J+)
Methylnaphthalene[1-] 0.0395
Methylnaphthalene[2-] 0.0446 (J+)
Naphthalene 0.105 (J)
Phenanthrene 1.17 (J)
Pyrene 0.971 (J)

33-61092 TD: 0-5 ft
RE33-21-222553 0-1 ft FILL
Acenaphthene 0.00467 (J)
Anthracene 0.0194 (J)
Aroclor-1254 0.00978
Aroclor-1260 0.00714
Benzo(a)anthracene 0.0447 (J)
Benzo(a)pyrene 0.0527 (J)
Benzo(b)fluoranthene 0.0567 (J)
Benzo(g,h,i)perylene 0.0354 (J)
Benzo(k)fluoranthene 0.0227 (J)
Chrysene 0.0447 (J)
Dibenz(a,h)anthracene 0.0103 (J)
Fluoranthene 0.0891 (J)
Fluorene 0.00667 (J)
Indeno(1,2,3-cd)pyrene 0.0407 (J)
Phenanthrene 0.0861 (J)
Pyrene 0.0724 (J+)
RE33-21-222554 2-3 ft FILL
Acenaphthene 0.00754 (J)
Acenaphthylene 0.00264 (J)
Anthracene 0.0279 (J)
Aroclor-1254 0.0154
Aroclor-1260 0.00613
Benzo(a)anthracene 0.189 (J)
Benzo(a)pyrene 0.207 (J)
Benzo(b)fluoranthene 0.307 (J)
Benzo(g,h,i)perylene 0.142 (J)
Benzo(k)fluoranthene 0.106 (J)
Chrysene 0.216 (J)
Dibenz(a,h)anthracene 0.0479 (J)
Fluoranthene 0.492 (J)
Fluorene 0.00792 (J)
Indeno(1,2,3-cd)pyrene 0.159 (J)
Methylnaphthalene[2-] 0.00189 (J)
Phenanthrene 0.143 (J)
Pyrene 0.409 (J)
RE33-21-222555 4-5 ft FILL
Anthracene 0.00191 (J)
Aroclor-1260 0.00148 (J)
Benzo(a)anthracene 0.00382 (J)
Benzo(a)pyrene 0.00343 (J)
Benzo(b)fluoranthene 0.0042 (J)
Benzo(g,h,i)perylene 0.00343 (J)
Benzo(k)fluoranthene 0.00229 (J)
Chrysene 0.00343 (J)
Fluoranthene 0.00611 (J)
Indeno(1,2,3-cd)pyrene 0.00343 (J)
Phenanthrene 0.00534 (J)
Pyrene 0.00611 (J)

33-61093 TD: 0-5 ft
RE33-21-222556 0-1 ft FILL
Acenaphthene 0.00298 (J)
Anthracene 0.0103 (J)
Aroclor-1254 0.0042
Aroclor-1260 0.00287 (J)
Benzo(a)anthracene 0.054 (J)
Benzo(a)pyrene 0.0587 (J)
Benzo(b)fluoranthene 0.0818 (J)
Benzo(g,h,i)perylene 0.0431 (J)
Benzo(k)fluoranthene 0.0292 (J)
Chrysene 0.0613 (J)
Dibenz(a,h)anthracene 0.0123 (J)
Fluoranthene 0.127 (J)
Fluorene 0.00232 (J)
Indeno(1,2,3-cd)pyrene 0.0507 (J)
Phenanthrene 0.048 (J)
Pyrene 0.122 (J)
RE33-21-222557 2-3 ft FILL
Acenaphthene 0.00596 (J)
Anthracene 0.0119 (J)
Aroclor-1254 0.135
Aroclor-1260 0.037
Benzo(a)anthracene 0.0306 (J)
Benzo(a)pyrene 0.0339 (J)
Benzo(b)fluoranthene 0.0373 (J)
Benzo(g,h,i)perylene 0.0227 (J)
Benzo(k)fluoranthene 0.0145 (J)
Chrysene 0.0294 (J)
Dibenz(a,h)anthracene 0.00671 (J)
Fluoranthene 0.0541 (J)
Fluorene 0.00596 (J)
Indeno(1,2,3-cd)pyrene 0.0257 (J)
Naphthalene 0.00335 (J)
Phenanthrene 0.044 (J)
Pyrene 0.0488 (J)
RE33-21-222558 4-5 ft FILL
Aroclor-1254 0.0157
Aroclor-1260 0.00472
Benzo(a)anthracene 0.00402 (J)
Benzo(a)pyrene 0.00402 (J)
Benzo(b)fluoranthene 0.00438 (J)
Chrysene 0.00365 (J)
Fluoranthene 0.00731 (J)
Indeno(1,2,3-cd)pyrene 0.00365 (J)
Phenanthrene 0.00621 (J)
Pyrene 0.00767 (J)

33-61091 TD: 0-5 ft
RE33-21-222550 0-1 ft FILL
Acenaphthene 0.171 (J)
Anthracene 0.331 (J)
Aroclor-1254 0.0455 (J)
Aroclor-1260 0.0441 (J)
Benzo(a)anthracene 0.662 (J)
Benzo(a)pyrene 0.555 (J)
Benzo(b)fluoranthene 0.676 (J)
Benzo(g,h,i)perylene 0.331 (J)
Benzo(k)fluoranthene 0.246 (J)
Chrysene 0.652 (J)
Dibenz(a,h)anthracene 0.11
Fluoranthene 1.52 (J)
Fluorene 0.164 (J)
Indeno(1,2,3-cd)pyrene 0.402 (J)
Methylnaphthalene[1-] 0.032 (J)
Methylnaphthalene[2-] 0.0356
Naphthalene 0.0676
Phenanthrene 1.25 (J)
Pyrene 1 (J)
RE33-21-222551 2-3 ft FILL
Acenaphthene 1.12 (J)
Anthracene 1.96 (J)
Aroclor-1254 0.0446
Aroclor-1260 0.0291 (J)
Benzo(a)anthracene 3.04 (J)
Benzo(a)pyrene 2.42 (J)
Benzo(b)fluoranthene 2.97 (J)
Benzo(g,h,i)perylene 1.52 (J)
Benzo(k)fluoranthene 1.1 (J)
Chrysene 2.75 (J)
Dibenz(a,h)anthracene 0.466
Fluoranthene 5.87 (J)
Fluorene 0.984 (J)
Indeno(1,2,3-cd)pyrene 1.65 (J)
Methylnaphthalene[1-] 0.199
Methylnaphthalene[2-] 0.271
Naphthalene 0.538
Phenanthrene 6.6 (J)
Pyrene 5.93 (J)
RE33-21-222552 4-5 ft FILL
Acenaphthene 0.00588 (J)
Anthracene 0.0059 (J)
Aroclor-1254 0.00717 (J)
Aroclor-1260 0.00806 (J)
Benzo(a)anthracene 0.0197 (J)
Benzo(a)pyrene 0.0194 (J)
Benzo(b)fluoranthene 0.0225 (J)
Benzo(g,h,i)perylene 0.0138 (J)
Benzo(k)fluoranthene 0.0083 (J)
Chrysene 0.0187 (J)
Dibenz(a,h)anthracene 0.00346
Fluoranthene 0.0363 (J)
Fluorene 0.00519 (J)
Indeno(1,2,3-cd)pyrene 0.0149 (J)
Methylnaphthalene[2-] 0.00173 (J)
Naphthalene 0.0045
Phenanthrene 0.0346 (J)
Pyrene 0.0412 (J)

33-60994 TD: 0-5 ft
RE33-21-222576 0-1 ft FILL
Acenaphthene 0.0000235 (J)
Anthracene 0.0000436
Benzo(a)anthracene 0.000322
Benzo(a)pyrene 0.000342
Benzo(b)fluoranthene 0.00052
Benzo(g,h,i)perylene 0.000221
Benzo(k)fluoranthene 0.000168
Chrysene 0.000332
Dibenz(a,h)anthracene 0.000057
Fluoranthene 0.00068
Indeno(1,2,3-cd)pyrene 0.000248
Phenanthrene 0.000245
Pyrene 0.00066
RE33-21-217996 2-3 ft FILL
Aroclor-1254 0.0152
Aroclor-1260 0.0102
RE33-21-222527 2-3 ft FILL
Acenaphthene 0.00533
Anthracene 0.00914
Benzo(a)anthracene 0.0339
Benzo(a)pyrene 0.0369
Benzo(b)fluoranthene 0.0407
Benzo(g,h,i)perylene 0.0255
Benzo(k)fluoranthene 0.0156
Chrysene 0.0324
Dibenz(a,h)anthracene 0.00685
Fluoranthene 0.0556
Fluorene 0.00533
Indeno(1,2,3-cd)pyrene 0.0282
Naphthalene 0.0019 (J)
Phenanthrene 0.0419
Pyrene 0.0647
RE33-21-217997 4-5 ft FILL
Aroclor-1254 0.0029 (J)
Aroclor-1260 0.00224 (J)
RE33-21-222528 4-5 ft FILL
Anthracene 0.00229 (J)
Benzo(a)anthracene 0.00549
Benzo(a)pyrene 0.00764
Benzo(b)fluoranthene 0.0084
Benzo(g,h,i)perylene 0.00573
Benzo(k)fluoranthene 0.00344 (J)
Chrysene 0.00687
Fluoranthene 0.0118
Indeno(1,2,3-cd)pyrene 0.00611
Phenanthrene 0.00993
Pyrene 0.0134

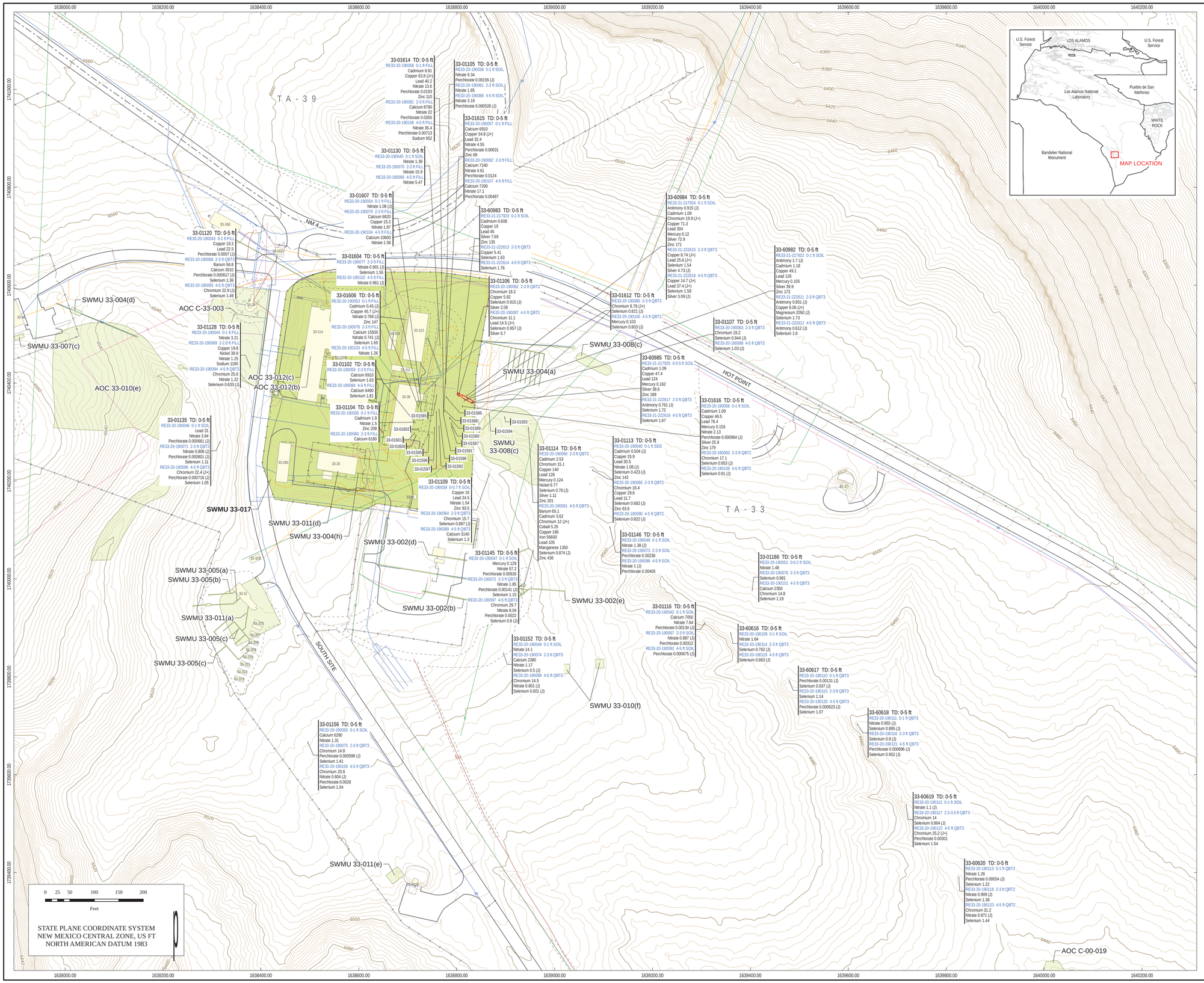
33-60995 TD: 0-5 ft
RE33-21-217998 0-1 ft FILL
Aroclor-1254 0.0169
Aroclor-1260 0.0154 (J)
RE33-21-217999 2-3 ft FILL
Aroclor-1254 0.0228
Aroclor-1260 0.0104

33-60996 TD: 0-5 ft
RE33-21-218001 0-1 ft FILL
Acenaphthene 0.0549 (J)
Anthracene 1.052 (J)
Benzo(a)anthracene 1.01 (J)
Benzo(a)pyrene 1.02 (J)
Benzo(b)fluoranthene 1.72 (J)
Benzo(g,h,i)perylene 0.57 (J)
Benzo(k)fluoranthene 0.529 (J)
Chrysene 1.24 (J)
Dibenz(a,h)anthracene 0.158 (J)
Fluoranthene 3.14 (J)
Indeno(1,2,3-cd)pyrene 0.604 (J)
Phenanthrene 1.4 (J)
Pyrene 2.79 (J)
RE33-21-222530 2-3 ft FILL
Aroclor-1260 0.00174 (J)
RE33-21-218002 2-3 ft FILL
Acenaphthene 0.0303 (J)
Anthracene 0.0488 (J)
Benzo(a)anthracene 0.0809 (J)
Benzo(a)pyrene 0.0916 (J)
Benzo(b)fluoranthene 0.0947 (J)
Benzo(g,h,i)perylene 0.0541 (J)
Benzo(k)fluoranthene 0.0368 (J)
Chrysene 0.0813 (J)
Dibenz(a,h)anthracene 0.0165 (J)
Fluoranthene 0.155 (J)
Fluorene 0.0253 (J)
Indeno(1,2,3-cd)pyrene 0.0579 (J)
Methylnaphthalene[1-] 0.00825
Methylnaphthalene[2-] 0.00997
Naphthalene 0.0196 (J)
Phenanthrene 0.17 (J)
Pyrene 0.17 (J)
RE33-21-222531 4-5 ft FILL
Aroclor-1260 0.0106

33-60990 TD: 0-5 ft
RE33-21-222535 0-1 ft FILL
Acenaphthene 0.562 (J)
Anthracene 3.15 (J)
Benzo(a)anthracene 11.5 (J)
Benzo(a)pyrene 10.4 (J)
Benzo(b)fluoranthene 14.8 (J)
Benzo(g,h,i)perylene 6.11 (J)
Benzo(k)fluoranthene 5.06 (J)
Chrysene 11.7 (J)
Dibenz(a,h)anthracene 1.72 (J)
Fluoranthene 30.4 (J)
Fluorene 0.337 (J)
Indeno(1,2,3-cd)pyrene 7.38 (J)
Phenanthrene 15.1 (J)
Pyrene 29.5 (J)
RE33-21-222536 2-3 ft FILL
Anthracene 0.00415
Benzo(a)anthracene 0.0288
Benzo(a)pyrene 0.0279
Benzo(b)fluoranthene 0.0415
Benzo(g,h,i)perylene 0.0185
Benzo(k)fluoranthene 0.0136
Chrysene 0.0302
Dibenz(a,h)anthracene 0.0049
Fluoranthene 0.0736
Indeno(1,2,3-cd)pyrene 0.0215
Phenanthrene 0.0279
Pyrene 0.0645
RE33-21-222537 4-5 ft FILL
Acenaphthene 0.00472 (J)
Anthracene 0.0145 (J)
Benzo(a)anthracene 0.066 (J)
Benzo(a)pyrene 0.0704 (J)
Benzo(b)fluoranthene 0.0995 (J)
Benzo(g,h,i)perylene 0.0562 (J)
Benzo(k)fluoranthene 0.0322 (J)
Chrysene 0.0739 (J)
Dibenz(a,h)anthracene 0.0142 (J)
Fluoranthene 0.175 (J)
Fluorene 0.00393 (J)
Indeno(1,2,3-cd)pyrene 0.0629 (J)
Phenanthrene 0.0743 (J)
Pyrene 0.151 (J)

33-60987 TD: 0-5 ft
RE33-21-222538 0-1 ft FILL
Acenaphthene 0.214
Anthracene 1.02
Benzo(a)anthracene 5.49
Benzo(a)pyrene 5.5
Benzo(b)fluoranthene 7.89
Benzo(g,h,i)perylene 3.65
Benzo(k)fluoranthene 2.74
Chrysene 6.07
Dibenz(a,h)anthracene 0.998
Fluoranthene 14.4
Fluorene 0.107 (J)
Indeno(1,2,3-cd)pyrene 4.33
Phenanthrene 5.79
Pyrene 14.6
RE33-21-222539 2-3 ft FILL
Acenaphthene 1.44 (J)
Acenaphthylene 0.0642 (J)
Anthracene 2.08 (J)
Benzo(a)anthracene 3.46 (J)
Benzo(a)pyrene 3.66 (J)
Benzo(b)fluoranthene 3.88 (J)
Benzo(g,h,i)perylene 2.11 (J)
Benzo(k)fluoranthene 1.3 (J)
Chrysene 3.13 (J)
Dibenz(a,h)anthracene 0.663 (J)
Fluoranthene 8.47 (J)
Fluorene 1.87 (J)
Indeno(1,2,3-cd)pyrene 2.42 (J)
Methylnaphthalene[1-] 0.765 (J)
Methylnaphthalene[2-] 1.17 (J)
Naphthalene 3.44 (J)
Phenanthrene 10.6 (J)
Pyrene 8.72 (J)
RE33-21-222540 4-5 ft FILL
Acenaphthene 0.00274 (J)
Anthracene 0.00626
Benzo(a)anthracene 0.0266
Benzo(a)pyrene 0.0289
Benzo(b)fluoranthene 0.0383
Benzo(g,h,i)perylene 0.0207
Benzo(k)fluoranthene 0.0137
Chrysene 0.0293
Dibenz(a,h)anthracene 0.00508
Fluoranthene 0.061
Fluorene 0.00391
Indeno(1,2,3-cd)pyrene 0.0235
Naphthalene 0.00235 (J)
Phenanthrene 0.0325
Pyrene 0.0598

33-60986 TD: 0-5 ft
RE33-21-222535 0-1 ft FILL
Acenaphthene 0.562 (J)
Anthracene 3.15



Sampling location
TA boundary
Water line
Gas line
Electric line
Sewer line
Secondary utility
Communication line
Fence
Unpaved road
Paved road
TA boundary
Structure
Paved parking lot
SWMU or AOC
SWMU 33-017
Excavation boundary
Index contour, 20-ft interval
Terrain contour, 2-ft interval

PLATE 13

Inorganic chemicals detected or detected above BVs at SWMU 33-017

Map: map_21-0006-58_33-017_inorg 8/4/2021 DFRANK
edit: JSAMMONS

Disclaimer: This map was created for work processes associated with the LLCC. All other uses for this map should be confirmed with N3B staff.

Note: All units are in mg/kg