



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

EMLA-2020-1603-02-001

September 30, 2020

Mr. Kevin Pierard
Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313

Subject: Submittal of the South Ancho Canyon Aggregate Area Progress Report

Dear Mr. Pierard:

Enclosed please find two hard copies with electronic files of the "South Ancho Canyon Aggregate Area Progress Report." This progress report fulfills fiscal year (FY) 2020 Milestone #16 in Appendix B of the 2016 Compliance Order on Consent (Consent Order) under the Southern External Boundary Campaign. The specific milestone addressed by this deliverable is described as a progress report summarizing the fieldwork implementation and status of site investigations in the South Ancho Canyon Aggregate Area. Field investigations for the South Ancho Canyon Aggregate Area were impacted and postponed by the COVID-19 pandemic. Therefore, this progress report summarizes the field investigations that were completed before and during the pandemic.

On March 31, 2020, the U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office (EM-LA) provided written notification to the New Mexico Environment Department (NMED) of a force majeure event caused by the COVID-19 pandemic. The written notification was provided pursuant to the requirement in Section XXXII, Force Majeure, of the Consent Order, which states "A Force Majeure shall mean any event arising from causes beyond the control of DOE or its respective agents, contractors, or employees that causes a delay in or prevents the performance of any obligation of DOE under this Consent Order."

As a prudent measure in response to the COVID-19 pandemic in New Mexico, EM-LA transitioned to Essential Mission Critical Activities (EMCA) status on March 24, 2020. Activities supporting the cleanup mission were limited to those necessary to ensure the safety of the public, the workers, and the environment. As indicated in the written notification, investigation work under the Southern External Boundary Campaign, which includes Chaquehui Canyon Aggregate Area, South Ancho Canyon Aggregate Area, and Lower Water/Indio Canyons Aggregate Area, was not considered EMCA, and work ceased on March 24, 2020.

Approximately 21% (129) of the initially planned samples under the South Ancho Canyon Aggregate Area investigation work plan (IWP) were completed before the COVID-19 shutdown on March 24, 2020. In addition, approximately 125 cubic yards of soil and debris were excavated before the shutdown. Following completion of required COVID-19 training and restart checklist completion and approvals, sampling resumed on July 8, 2020. An additional 162 samples were collected from July 8 through

August 7, resulting in 47% of samples (291 out of 618) being collected under the South Ancho Canyon Aggregate Area IWP. The COVID-19 pandemic significantly reduced available field days left in FY 2020; therefore, the remaining sampling activities for South Ancho were postponed so that resources could be focused on completing the site investigation planned under the Lower Water/Indio Canyons Aggregate Area IWP in August.

Fieldwork at South Ancho Canyon will resume by October 1, 2020. The impacts from the COVID-19 pandemic to the South Ancho Canyon Aggregate Area field investigations have delayed completion of fieldwork planned for FY 2020 under this single-phase investigation and delays are reflected in the progress report. Carrying fieldwork into FY 2021 has impacted the proposed date for submittal of the FY 2021 investigation report to NMED, moving that date to September 30, 2021. This new date is currently reflected in the proposed FY 2021 Appendix B Consent Order milestones.

If you have any questions, please contact Dwight Hollon at (505) 551-2939 (dwight.hollon@em-la.doe.gov) or Cheryl Rodriguez at (505) 414-0450 (cheryl.rodriguez@em.doe.gov).

Sincerely,

**Arturo
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Arturo Q. Duran
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Enclosures:

1. Two hard copies with electronic files – South Ancho Canyon Aggregate Area Progress Report (EM2020-0424)

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Subject: [EXT] Submittal to NMED on 9/30/2020 of South Ancho Canyon Agg Area Progress Rpt

Mr. Pierard,

Attached for submittal is a pdf file of the following:

- Submittal of the South Ancho Canyon Aggregate Area Progress Report (EMLA-2020-1603-02-001, letter and enclosure)

Please acknowledge receipt of this submittal by responding to this email.

Let me know if you have any questions.

Thank you.

Pamela T. Maestas

Regulatory Documentation Manager

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1200 Trinity Drive, Suite 150
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September 2020
EM2020-0424

South Ancho Canyon Aggregate Area Progress Report

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.


South Ancho Canyon Aggregate Area Progress Report

September 2020

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Printed Name	Signature	Title	Organization	Date

Responsible N3B representative:

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Responsible DOE EM-LA representative:

Arturo Q. Duran	Arturo Duran Digitally signed by Arturo Duran Date: 2020.09.30 10:06:07 -06'00'	Compliance and Permitting Manager	Office of Quality and Regulatory Compliance	
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CONTENTS

1.0	PURPOSE OF REPORT	1
2.0	OVERVIEW	1
2.1	COVID-19 Impacts.....	2
3.0	SUMMARY OF FIELDWORK COMPLETED IN FISCAL YEAR 2020	3
3.1	SWMU 33-004(c) – Septic System.....	3
3.1.1	Site Description and Operational History	3
3.1.2	Previous Investigations	3
3.1.3	Investigation Objectives	3
3.1.4	Fieldwork Completed.....	4
3.2	SWMU 33-004(k) – Drainline and Outfall	4
3.2.1	Site Description and Operational History	4
3.2.2	Previous Investigations	4
3.2.3	Investigation Objectives	4
3.2.4	Fieldwork Completed.....	5
3.3	SWMU 33-006(b), Firing Site	5
3.3.1	Site Description and Operational History	5
3.3.2	Previous Investigations	5
3.3.3	Investigation Objectives	6
3.3.4	Fieldwork Completed.....	6
3.4	SWMU 33-007(a), Firing Site	6
3.4.1	Site Description and Operational History	6
3.4.2	Previous Investigations	6
3.4.3	Investigation Objectives	7
3.4.4	Fieldwork Completed.....	7
3.5	SWMU 33-010(d), Surface Disposal Site	8
3.5.1	Site Description and Operational History	8
3.5.2	Previous Investigations	8
3.5.3	Investigation Objectives	8
3.5.4	Fieldwork Completed.....	8
3.6	AOC C-33-002, Former Transformer.....	8
3.6.1	Site Description and Operational History	8
3.6.2	Previous Investigations	9
3.6.3	Investigation Objectives	9
3.6.4	Fieldwork Completed.....	9
4.0	FY 2020 MILESTONE	9
5.0	PLANNED WORK IN FY 2021	9
6.0	REFERENCES	10

Figure

Figure 2.0-1	South Ancho Canyon Aggregate Area site and sampling locations	13
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1.0 PURPOSE OF REPORT

This progress report fulfills fiscal year (FY) 2020 Milestone #16 of the 2016 Compliance Order on Consent (Consent Order), Appendix B, under the Southern External Boundary campaign. Milestone #16 is a progress report summarizing the fieldwork implementation and status of site investigations conducted under the 2015 Investigation Work Plan (IWP) for South Ancho Canyon Aggregate Area (LANL 2015, 600531). The South Ancho Canyon Aggregate Area is one of five aggregate areas in the Southern External Boundary campaign. All solid waste management units (SWMUs) and areas of concern (AOCs) within the South Ancho Canyon Aggregate Area are located at East Site at Technical Area 33 (TA-33). East Site is one of five geographical sites (Area 6, East Site, Main Site, National Radio Astronomy Observatory [NRAO] Site, and South Site) located at TA-33 and is located in the eastern portion of TA-33. The SWMUs and AOC included in the IWP for South Ancho Canyon Aggregate Area are listed below:

- SWMU 33-004(c) – Septic System
- SWMU 33-004(k) – Drainline and Outfall Associated with Structure 33-87
- SWMU 33-006(b) – Firing Site
- SWMU 33-007(a) – Firing Site
- SWMU 33-010(d) – Surface Disposal Site
- AOC C-33-002 – Former Transformer
- SWMU 33-003(a) – Soil Contamination from Former Underground Chamber and Shaft (MDA D)
- SWMU 33-003(b) – Soil Contamination from Former Underground Chamber and Shaft (MDA D)
- SWMU 33-008(b) – Landfill
- SWMU 33-010(a) – Surface Disposal Site
- SWMU 33-010(b) – Surface Disposal Site

2.0 OVERVIEW

This progress report summarizes the field investigations conducted by the U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office (EM-LA) and Newport News Nuclear BWXT-Los Alamos, LLC (N3B) under the IWP for the South Ancho Canyon Aggregate Area. The 2020 COVID-19 pandemic prompted a sitewide shutdown that caused all fieldwork operations to cease on March 24, 2020. Because of the shutdown, not all of the sampling initially planned under the IWP for the South Ancho Canyon Aggregate Area could be completed by September 30, 2020. The fieldwork schedule for this site was delayed by approximately 4 months and did not resume until the New Mexico Department of Health provided guidance for the restart of operations throughout the state and EM-LA and N3B developed a phased approach to resumption of field operations. Following completion of restart requirements, COVID-19 training, and health and safety protocols, sampling resumed on July 8, 2020. This progress report presents the status of fieldwork implementation and site investigations for the South Ancho Canyon Aggregate Area, as well as the impacts of the COVID-19 pandemic on the field effort.

Sampling has been initiated at SWMUs 33-004(c), 33-004(k), 33-006(b), 33-007(a) and 33-010(d) and AOC C-33-002 (Figure 2.0-1). Additional sampling and any required remediation will occur once analytical data have been received and evaluated.

2.1 COVID-19 Impacts

A worldwide pandemic caused by the spread of the COVID-19 virus adversely affected field operations. As a prudent measure in response to the COVID-19 pandemic in New Mexico, EM-LA transitioned to Essential Mission Critical Activities (EMCA) status on March 24, 2020. Activities supporting the cleanup mission were limited to those necessary to ensure the safety of the public, the workers, and the environment. As indicated in the written notification (DOE 2020, 700826), investigation work under the Southern External Boundary Campaign, which includes the South Ancho Canyon Aggregate Area, was not considered EMCA, and work ceased on March 24, 2020. Subsequently, DOE has provided biweekly updates in accordance with the March 31, 2020, notification. Because of impacts from the COVID-19 pandemic, the remaining sampling activities at South Ancho Canyon Aggregate Area have been postponed so that resources could be focused on completing the 211 samples initially planned under the IWP for the Lower Water/Indio Canyons Aggregate Area in August. Sampling at South Ancho Canyon Aggregate Area is currently on schedule to resume on October 1, 2020.

Fieldwork at South Ancho Canyon Aggregate Area was halted for approximately 4 months (74 field days) from March 24, 2020, to July 6, 2020, by the COVID-19 pandemic impacts. Site remobilization occurred July 6 and 7, and sampling resumed on July 8, 2020. Safety protocols mandated by the Governor of New Mexico, such as social distancing and masks, have reduced field efficiency by reconfiguring field teams, limiting vehicle transport to two people per vehicle, and providing more frequent and necessary breaks to mitigate potential heat stress from wearing masks. In addition, COVID-19 health and safety protocols have impacted field team member availability, as personnel are required to self-isolate if others they come in contact with exhibit COVID-19 symptoms and until test results are received or 14 days have passed. This has reduced available field personnel and continues to reduce field efficiency. Before the COVID-19 pandemic, sample collection averaged 14–16 samples per day, whereas it has averaged 8–10 samples per day during fieldwork resumption. This equates to a 40% loss in field efficiency because of COVID-19 health and safety restrictions. As a result, 291 of the 618 samples initially planned under the IWP for the South Ancho Canyon Aggregate Area were completed by September 30, 2020.

Collection of the 618 samples specified in the South Ancho Canyon Aggregate Area IWP began in March and was scheduled to take approximately 4.5 months. Before the shutdown, fieldwork was scheduled to be completed by mid-July 2020. Of this planned 4.5-month duration, 12 days of work were completed before work ceased on March 24, 2020. Approximately 21% of the initial samples (129 out of 618) were collected, and 125 cubic yards of soil and debris was excavated. Sample collection resumed on July 8, 2020. An additional 162 samples were collected from July 8 through August 7, resulting in 47% of samples (291 out of 618) being collected. The COVID-19 pandemic significantly reduced available field days left in FY 2020; therefore, the remaining sampling activities for South Ancho Canyon Aggregate Area were postponed so that resources could be focused on completing the site investigation planned under the Lower Water/Indio Canyons Aggregate Area IWP in August. The impacts of the COVID-19 pandemic on the South Ancho Canyon Aggregate Area field schedule have resulted in a loss of 4 months (74 fieldwork days) plus a 40% loss in remaining fieldwork efficiency. Based on the planned work schedule, approximately 3 months (60 field days) of work are remaining, plus an additional 24 fieldwork days for loss in fieldwork efficiency. This moves the completion date for the initial fieldwork identified in the South Ancho Canyon Aggregate Area IWP to February 2021. This does not include additional sampling or remediation work that may be required after analytical data have been received and evaluated.

3.0 SUMMARY OF FIELDWORK COMPLETED IN FISCAL YEAR 2020

The following sections summarize the status of fieldwork initiated at SWMUs 33-004(c), 33-004(k), 33-006(b), 33-007(a), and 33-010(d) and AOC C-33-002.

3.1 SWMU 33-004(c) – Septic System

3.1.1 Site Description and Operational History

SWMU 33-004(c) consists of a former septic tank (structure 33-96) and associated drainline and drain field located at TA-33. This septic tank received wastewater from building 33-87, which was constructed in June 1955 to serve as the control bunker for the firing site. The septic tank had a capacity of 768 gal. and was located approximately 100 ft northeast of building 33-87. Wastewater was conveyed to the tank through a 4-in.-diameter vitrified clay pipe, and effluent from the tank flowed through a similar pipe to a small drain field approximately 30 ft east of the septic tank. No outfall has been associated with this septic tank. Building 33-87 was used as a control bunker for experiments conducted by Los Alamos National Laboratory's (LANL's or the Laboratory's) Group W-3 until 1972. It has since been used for storage and for occasional short-term experiments. There is no documented use of hazardous or radioactive materials within building 33-87. Septic tank 33-96 was operated under NMED Permit Number LA 34. However, no discharges to the septic system have occurred since the late 1980s. The septic tank was removed in March 2020, and all inlet and outlet lines were plugged and abandoned in place.

3.1.2 Previous Investigations

During the 1994 Phase I Resource Conservation and Recovery Act facility investigation (RFI) conducted at SWMU 33-004(c), the septic tank was opened and inspected. No sludge was present in the tank, and two liquid samples were collected. In addition, one surface sample and two subsurface samples were collected from each of four boreholes advanced to depths of 4–6 ft below ground surface (bgs). One borehole was located 5 ft from the septic tank, and the other three were located in the drain field. Before the boreholes were drilled, a trench was excavated in the drain field to locate the drainage tiles and any drainlines. No drainlines were discovered (LANL 1995, 051903, pp. 43-44).

A total of 12 samples were submitted to on-site and off-site contract analytical laboratories for analysis of cyanide, gamma-emitting radionuclides, target analyte list (TAL) metals, and semivolatile organic compounds (SVOCs). One of the 12 samples was also analyzed for isotopic uranium, and 8 of the 12 samples were also analyzed for volatile organic compounds (VOCs).

3.1.3 Investigation Objectives

The objective of the investigation is to define the nature and extent of contamination associated with SWMU 33-004(c) and ensure that no unacceptable human health or ecological risk exists at this site. A total of 38 samples are planned to be collected from SWMU 33-004(c). The samples are planned to be collected from locations below the septic tank, inlet and outlet drainlines, and leach field. Following tank removal, samples are planned to be collected at three depth intervals below the tank (0–1 ft, 2–3 ft, and 5–6 ft) and one location below the base of the tank. In addition, four samples are planned to be collected below the septic tank inlet and outlet lines at two depth intervals (0–1 ft and 4–5 ft) below the base of the inlet and outlet lines. A total of 20 samples are planned to be collected from five locations beneath the leach field at three depth intervals (0–1 ft, 2–3 ft, and 5–6 ft) below the base of the leach field. Nine samples are planned to be collected from three locations around the leach field boundary at three depth intervals (0–1 ft, 2–3 ft, and 5–6 ft bgs). One location is planned to be sampled beneath the inlet line

approximately midway between building 33-87 and the septic tank at three depth intervals (0–1 ft, 2–3 ft, and 5–6 ft) below the inlet line.

3.1.4 Fieldwork Completed

Fieldwork at SWMU 33-004(c) took place March 13–18, 2020, and August 3–7, 2020. Fieldwork consisted of septic tank removal, excavation of 70 yd³ of environmental media in contact with the septic tank and 30 yd³ of other environmental media associated with the tank removal, sample collection and analysis, and confirmation sampling. A total of 32 investigation samples were collected from SWMU 33-004(c), and 7 confirmation samples were collected from excavation areas. A total of 15 samples at 2 locations remain to be collected. Samples are being analyzed for TAL metals, cyanide, nitrate, perchlorate, pH, VOCs, SVOCs, explosive compounds, gamma-emitting radionuclides, and isotopic uranium. The sample locations are shown in Figure 2.0-1.

3.2 SWMU 33-004(k) – Drainline and Outfall

3.2.1 Site Description and Operational History

SWMU 33-004(k) is described in the 1990 SWMU report (LANL 1990, 007513) as two parallel drainlines for building 33-87 that merged and discharged to a single outfall located near gun mount 33-116. The outfall reportedly received discharge from a toilet, sink, floor drains, and an electrical water cooler within the building. The engineering drawing for building 33-87 depicts a cast-iron drainpipe exiting the south wall of the building and extending approximately 125 ft southeast of the building. Building 33-87 was constructed in 1955 to support firing-site experiments that were conducted until the early 1970s. Attempts to locate the drainline and outfall in 1994 and 1995 using geophysics and test trenches were unsuccessful. An inspection of the building performed in 1996 revealed that no floor drains existed in the building. The sink and toilet in the building discharge to septic tank 33-96 [SWMU 33-004(c)], located north of the building. Therefore, it is possible that the drainline and outfall never existed.

3.2.2 Previous Investigations

A radiation survey was conducted December 3–17, 1993, on a fixed grid, and readings were taken on contact with the ground surface every 20 ft. A 50-ft grid was established over the SWMU 33-004(k) outfall area. No elevated readings were detected (LANL 2015, 600531).

During the 1994 Phase I RFI conducted at SWMU 33-004(k), electromagnetic (EM) surveys were performed east of the bunker where the drainline was shown on the engineering drawing. The EM surveys did not indicate the presence of a drainline at the surveyed locations. In 1995, a ground-penetrating radar survey was conducted, and two anomalies at the southeast corner of the building were noted. Eleven trenches were dug to the top of bedrock both parallel and perpendicular to the anomalies, but no drainline was encountered. Based on the results of the Phase I RFI activities for SWMU 33-004(k), the RFI report recommended no further action (NFA) because the SWMU could not be located or may have never existed (LANL 1997, 071478, pp. 81–82). The NFA recommendation was never approved by the U.S. Environmental Protection Agency or NMED.

3.2.3 Investigation Objectives

The overall objective of the investigation is to define the nature and extent of contamination associated with SWMU 33-004(k), and ensure that no unacceptable human health or ecological risk exists at this site. Two trenches are planned to be excavated on both sides of the access road to verify if the drainline

exists. If the drainline is not located, no samples will be collected at this site, and the conclusion will be that the drainline was never installed. If the drainline is located, sampling locations will be targeted at the locations of the drainline and outfall to define the nature and extent of contamination. A total of 19 samples are planned to be collected from 7 locations. A total of 4 samples are planned to be collected at 2 locations below the drainline at depth intervals of 0–1 ft and 2–3 ft. A total of 3 samples are planned to be collected from 1 location at the outfall, and 12 samples are planned to be collected from 4 locations downgradient of the outfall at depth intervals of 0–1 ft, 2–3 ft, and 5–6 ft bgs (LANL 2015, 600531).

3.2.4 Fieldwork Completed

Fieldwork at SWMU 33-004(k), began March 16, 2020. Two trenches were excavated along the purported location of the drainline. Trench 1 was excavated and evidence of the drainline was found. On March 18, 2020, buried lines were unexpectedly encountered and a stop-work order was initiated. The lines are thought to be fiber-optic communication cables that may have been used during former firing-site activities at SWMU 33-007(a). The stop-work order is still in effect. Once the stop-work order has been lifted, work will resume to complete activities at SWMU 33-004(k). There were no samples collected during the trenching activities. Figure 2.0-1 shows the trenching locations at SWMU 33-004(k).

3.3 SWMU 33-006(b), Firing Site

3.3.1 Site Description and Operational History

SWMU 33-006(b) is a former gun-firing site that consists of two inactive concrete firing pads and associated berms. The firing pads were used to conduct tests of gun-type initiators and consisted of 20-ft × 30-ft concrete pads (former structures 33-97 and 33-98). The firing pads are located in the centers of two adjacent, crescent-shaped south-facing berms constructed of soil and crushed tuff. The double berm is located on the northern edge of the mesa near the rim of Ancho Canyon (LANL 2015, 600531).

Guns formerly mounted on the pads were used to fire uranium projectiles containing beryllium and polonium-210 into the berms. Cobalt-60 was used as a tracer in some of the projectiles. Projectiles were not detonated but were fired intact into the berms for recovery and investigation. Some neutron detectors used at the firing site for monitoring may have contained liquid organic scintillation fluids. Operations at East Site began in June 1955. The operating dates of SWMU 33-006(b) were not reported, but firing tests at East Site were conducted until 1972. A general cleanup of the site was conducted in 1984 (Buhl 1988, 009726).

3.3.2 Previous Investigations

A radiation survey was conducted December 3–17, 1993, on a fixed grid, and readings were taken on contact with the ground surface every 20 ft. No elevated readings were detected (LANL 1995, 048840, pp. 7–8).

During the 1994 Phase I RFI conducted at SWMU 33-006(b), a geophysical survey was conducted over the berms in an attempt to locate buried metallic objects. Numerous anomalies were detected. Subsequent trenching indicated that the anomalies were associated with large pieces of buried tuff. The only metallic object identified was a piece of an artillery gun breech. A surface soil sample was collected at each of two locations near both firing pads (four samples total). Soil samples were also collected from a 5-ft-deep trench cut into each berm at a location directly in front of each gun mount. Three samples were collected from the east trench, and six samples were collected from the west trench. Three of the

samples from the west trench were collected from the areas around metal projectiles found in the berm (LANL 1995, 048840, p. 24; LANL 1995, 051903, pp. 77–84).

A total of 13 samples were collected from 6 locations at depths of 0–8 ft bgs. The samples were submitted to on-site and off-site contract analytical laboratories for analysis of gamma-emitting radionuclides, TAL metals, SVOCs, and explosive compounds. Of the 13 samples, 4 were also analyzed for uranium, and another 4 are being analyzed for isotopic uranium (LANL 2015, 600531).

3.3.3 Investigation Objectives

The objective of the investigation is to define the nature and extent of contamination associated with SWMU 33-006(b) and ensure that no unacceptable human health or ecological risk exists at this site. A total of 83 samples are planned to be collected from 25 locations next to the former firing pads, in front of, on top of, and at the base of the berm. A total of 8 samples are planned to be collected from 4 sampling locations adjacent to the 2 firing pads (structures 33-97 and 33-98) at 2 depth intervals (0–1 ft and 2–3 ft bgs). A total of 24 samples are planned to be collected from 6 sampling locations on the slope of the berm next to the 2 firing pads at 4 depth intervals (0–1 ft, 2–3 ft, 4–5 ft, and 9–10 ft bgs). A total of 35 samples are planned to be collected from 7 sampling locations on top of the berm at 5 depth intervals (0–1 ft, 2–3 ft, 4–5 ft, 9–10 ft, and 14–15 ft bgs). A total of 16 samples are planned to be collected from 8 locations along the base of the berm at 2 depth intervals (0–1 ft and 2–3 ft bgs) (LANL 2015, 600531).

3.3.4 Fieldwork Completed

Fieldwork at SWMU 33-006(b) took place March 16–23, 2020, and August 31, 2020. A total of 52 investigation samples were collected at 4 depth intervals (0–1 ft, 2–3 ft, 4–5 ft, and 9–10 ft bgs). Samples were analyzed for TAL metals, cyanide, nitrate, perchlorate, pH, VOCs, SVOCs, explosive compounds, gamma-emitting radionuclides, and isotopic uranium. Figure 2.0-1 shows the sample locations at SWMU 33-006(b). Six locations remain to be sampled.

3.4 SWMU 33-007(a), Firing Site

3.4.1 Site Description and Operational History

SWMU 33-007(a) is a gun-firing site that consists of three gun mounts (structures 33-116 and 33-135 and former structure 33-117), two former catcher boxes (structures 33-118 and 33-136), and a recoil box. Concrete gun mounts 33-116 and 33-135 were located at the west end of the site, and the catcher boxes were located at the east end. A sandbag barricade was located east of the catcher boxes. The recoil box was located immediately west of gun mount 33-116. Firing-site activities began in the mid-1950s and included firing projectiles from large cannons into the catcher boxes, which were filled with vermiculite and sand. Other activities included experiments using scintillation fluids and x-rays. Cobalt-60 was used in some of the firing-site activities. Firing-site activities ceased in 1972. In 1984, the catcher boxes and their contents were removed and disposed of in a landfill [SWMU 33-008(b)] located at East Site (Buhl 1988, 009726; LANL 2015, 600531).

3.4.2 Previous Investigations

A radiation survey was conducted at the site December 3–17, 1993, on a fixed grid, and readings were taken on contact with the ground surface every 20 ft. No elevated readings were detected.

During the 1994 Phase I RFI, geophysical surveys were performed to determine the presence of subsurface metal objects. Trenches were excavated over two anomalies, but no debris or projectiles were found (LANL 1995, 048840, pp. 7-8).

As part of the Phase I RFI, sampling was conducted at SWMU 33-007(a) in 1994. Surface sampling at SWMU 33-007(a) consisted of randomized grid sampling designed to determine the distribution of potential surface contamination resulting from firing activities. In addition, biased samples were collected from a trench in the berm at the west end of the firing area and from north and south of the culvert draining the central part of the area. A total of 31 samples were collected from 28 locations at depths of 0–8 ft bgs. The samples were submitted for analysis of high explosives and metals at on-site and off-site contract analytical laboratories. Four of the 31 samples were also analyzed for herbicides, 12 other samples were also analyzed for SVOCs, and 28 of the 31 samples were also analyzed for uranium and gamma-emitting radionuclides. Arsenic, calcium, chromium, copper, lead, mercury, and uranium were detected above background values. In addition, 21 organic chemicals and cobalt-60 were detected. Cesium-137 was detected above the fallout value (LANL 1995, 051903).

3.4.3 Investigation Objectives

The overall objective of the investigation is to define the nature and extent of contamination associated with SWMU 33-007(a) and ensure that no unacceptable human health or ecological risk exists at this site. A total of 114 samples are planned to be collected from the various components of 33-007(a). Samples are planned to be collected from one location at two depth intervals (0–1 ft and 2–3 ft bgs) along the base of the berm below the former barricade. A total of 28 samples are planned to be collected from 7 sampling locations at 4 depth intervals (0–1 ft, 2–3 ft, 4–5 ft, and 9–10 ft bgs) on the slope of the berm below the former barricade. A total of 15 samples are planned to be collected from 3 sampling locations at 5 depth intervals (0–1 ft, 2–3 ft, 4–5 ft, 9–10 ft, and 14–15 ft bgs) on top of the berm where the former barricade was located. A total of 32 samples are planned to be collected from 16 sampling locations at 2 depth intervals (0–1 ft and 2–3 ft bgs) adjacent to the recovery catcher boxes (structures 33-118 and 33-136). A total of 22 samples are planned to be collected from 11 sampling locations at 2 depth intervals (0–1 ft and 2–3 ft bgs) around the gun mounts (structures 33-116, former 33-117, and 33-135). A total of 6 samples are planned to be collected from 3 sampling locations at 2 depth intervals (0–1 ft and 2–3 ft bgs) in and around the recoil box. A total of 4 samples are planned to be collected from 1 sampling location at 4 depth intervals (0–1 ft, 2–3 ft, 4–5 ft, and 9–10 ft bgs) on the slope of the berm next to the recoil box. A total of 5 samples are planned to be collected from 1 location at 5 depth intervals (0–1 ft, 2–3 ft, 4–5 ft, 9–10 ft, and 14–15 ft bgs) on top of the berm adjacent to the recoil box (LANL 2015, 600531).

3.4.4 Fieldwork Completed

Fieldwork at SWMU 33-007(a) took place March 12, 2020, and July 8–30, 2020. A total of 114 samples were collected from 43 locations at 5 depth intervals (0–1 ft, 2–3 ft, 4–5 ft, 9–10 ft, and 14–15 ft bgs). Samples are being analyzed for TAL metals, nitrate, perchlorate, pH, SVOCs, explosive compounds, gamma-emitting radionuclides, and isotopic uranium. The initial fieldwork for SWMU 33-007(a) is complete. Figure 2.0-1 shows the sample locations at SWMU 33-007(a).

3.5 SWMU 33-010(d), Surface Disposal Site

3.5.1 Site Description and Operational History

SWMU 33-010(d) is a former canyonside disposal area situated in the northeastern portion of East Site at TA-33. This site is located on a steep slope directly north of the former gun-firing site berms [SWMU 33-006(b)]. Debris scattered along the canyon rim and in a small drainage leading to Ancho Canyon consisted of concrete blocks, empty glass specimen vials, metal cans, and pieces of foam and cable. The date this debris was deposited at the site is not known, but operations at East Site occurred between 1948 and 1972 (LANL 1995, 243475, p. 10). During the 1995 voluntary corrective action (VCA) implemented at the site, 2 yd³ of nonhazardous/nonradioactive debris and 0.1 yd³ of radioactive debris were removed from the site (LANL 1996, 054755, p. 15).

3.5.2 Previous Investigations

During the 1994 Phase I RFI at SWMU 33-010(d), surface-soil samples were collected from four locations on the canyon edge and two locations in the drainage (LANL 1995, 048840, Exhibit 1, p. 7). All samples were submitted for laboratory analysis of TAL metals, uranium, and gamma-emitting radionuclides.

During a 1995 VCA, debris was removed from the ground surface and the drainage (LANL 1996, 054755). All debris was field-screened for radioactivity and inorganic chemicals. Natural materials and debris smaller than 3 in. in diameter were not removed unless field-screening results indicated that radioactivity was above background. A total of 2 yd³ of nonhazardous/nonradioactive debris and 0.1 ft³ of radioactive debris was removed (LANL 1996, 054755, p. 15).

3.5.3 Investigation Objectives

The overall objective of the investigation is to define the nature and extent of contamination associated with SWMU 33-010(d), and ensure that no unacceptable human health or ecological risk exists at this site. A total of 66 samples are planned to be collected from 33 locations. Of these, 42 samples are planned to be collected from 21 locations in and around the disposal area, and 24 samples are planned to be collected downgradient of the disposal area. Samples are planned to be collected at depth intervals of 0–1 ft and 2–3 ft bgs (or 1 ft into tuff) (LANL 2015, 600531).

3.5.4 Fieldwork Completed

Fieldwork at SWMU 33-010(d) took place March 17–23, 2020. A total of 66 samples were collected from 33 locations at 2 depth intervals (0–1 ft and 2–3 ft bgs) or 1 ft into tuff. Samples were analyzed for TAL metals, cyanide, nitrate, perchlorate, pH, VOCs, SVOCs, explosive compounds, polychlorinated biphenyls (PCBs), dioxins/furans, gamma-emitting radionuclides, and isotopic uranium. The initial fieldwork for SWMU 33-010(d) is complete. Figure 2.0-1 shows the sample locations at SWMU 33-010(d).

3.6 AOC C-33-002, Former Transformer

3.6.1 Site Description and Operational History

AOC C-33-002 is the site of a former electrical transformer (former structure 33-95) that was located next to building 33-87, a former firing-site bunker. The transformer was located within a concrete-walled vault covered by a soil berm. The berm was constructed to provide protection from nearby gun-firing sites [SWMUs 33-006(b) and 33-007(a)] (LANL 2015, 600531).

Because this transformer was placed into service in the 1950s, the oil in the transformer may have contained PCBs. Oil stains were visible on the concrete floor of the vault. However, active leaks from the transformer were not observed during inspections conducted in September 1985 and March 1992 (LANL 1992, 007671, p. 3-71). In 1992, under the Toxic Substances Control Act, the transformer was replaced with a non-PCB transformer. Sampling performed during transformer replacement was limited to the areas where the transformer had been placed temporarily during removal (Morales 1992, 009745).

3.6.2 Previous Investigations

The 1992 RFI work plan stated that the transformer pad would be cleaned and sampled during transformer replacement and proposed no additional sampling (LANL 1992, 007671, p. 3-71). During 1993 Phase I RFI activities, it was determined that the sampling conducted during transformer replacement did not meet RFI objectives. The 1995 RFI report therefore, recommended additional sampling to determine whether historic releases of PCBs had occurred. Sampling was conducted at AOC C-33-002 in 1996 (ICF Kaiser Engineers 1997, 600529, p. 20). Four surface samples were collected from four locations in the drainage downgradient of the transformer vault and analyzed for PCBs.

3.6.3 Investigation Objectives

The overall objective of the investigation is to define the nature and extent of contamination associated with AOC C-33-002 and ensure that no unacceptable human health or ecological risk exists at this site. A total of 20 samples are planned to be collected from 10 locations at 2 depth intervals (0–1 ft and 2–3 ft bgs) along the concrete pad in front of building 33-95 and from the drainage area downgradient of the transformer vault (LANL 2015, 600531).

3.6.4 Fieldwork Completed

Fieldwork at AOC C-33-002 took place July 31, 2020. A total of 20 samples were collected from 10 locations. A total of 4 samples were collected from 2 locations along the concrete pad in front of building 33-95. A total of 16 samples were collected from 8 locations in the drainage area downgradient of the transformer vault. Samples were collected at 2 depth intervals (0–1 ft and 2–3 ft bgs). Samples are being analyzed for PCBs and pH. The initial fieldwork for AOC C-33-002 is complete. Figure 2.0-1 shows the sample locations at AOC C-33-002.

4.0 FY 2020 MILESTONE

The requirement of a progress report summarizing the fieldwork implementation and status of site investigations in the South Ancho Canyon Aggregate Area has been met by completion and submittal of this progress report. Because of the COVID-19 pandemic sitewide shutdown, not all of the sampling initially planned under the IWP for the South Ancho Canyon Aggregate Area could be completed by September 30, 2020. Section 2.1 describes the fieldwork completed and provides the justifications for sample collection delays as a result of the COVID-19 pandemic. Sampling at South Ancho Canyon Aggregate Area is currently on schedule to resume October 1.

5.0 PLANNED WORK IN FY 2021

Fieldwork will resume at South Ancho Canyon Aggregate Area by October 1, 2020, to complete the sampling initially planned under the IWP. The impacts from the COVID-19 pandemic on the

South Ancho Canyon Aggregate Area field investigations have delayed completion of fieldwork planned for FY 2020 under this single-phase investigation. Carrying fieldwork into FY 2021 has impacted the proposed date for submittal of the FY 2021 investigation report to NMED, moving that date to September 30, 2021. This new date is currently reflected in the proposed FY 2021 Appendix B Consent Order milestones.

6.0 REFERENCES

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