



DEPARTMENT OF ENERGY
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Los Alamos, New Mexico 87544

EMLA-2022-BF143-02-001

September 19, 2022

Mr. Rick Shean
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New Mexico Environment Department
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Subject: Submittal of Phase II Threemile Canyon Aggregate Area Progress Report

Dear Mr. Shean:

Enclosed please find two hard copies with electronic files of the "Phase II Threemile Canyon Aggregate Area Progress Report." This report fulfills fiscal year 2022 Milestone #16 in Appendix B of the 2016 Compliance Order on Consent under the Pajarito Watershed Campaign.

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,

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Enclosure(s):

1. Two hard copies with electronic files:
Phase II Threemile Canyon Aggregate Area Progress Report (EM2022-0578)

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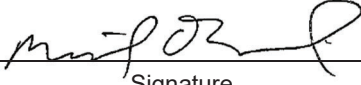
Phase II Threemile Canyon Aggregate Area Progress Report

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.


Phase II Threemile Canyon Aggregate Area Progress Report

September 2022


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1.0 PURPOSE OF REPORT

This progress report fulfills fiscal year (FY) 2022 Milestone #16 of the 2016 Compliance Order on Consent (Consent Order), Appendix B, under the Pajarito Watershed campaign. Milestone #16 is a progress report summarizing the fieldwork implementation and status of site investigations conducted under the approved "Phase II Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 3" (IWP) (N3B 2021, 701729; NMED 2021, 701775). The Threemile Canyon Aggregate Area is one of four aggregate areas in the Pajarito Watershed campaign. Solid waste management units (SWMUs) and areas of concern (AOCs) within the Threemile Canyon Aggregate Area are located at Technical Areas (TAs-) 14, 15, and 36, and former TA-12. The SWMUs and AOC included in the Phase II IWP for Threemile Canyon Aggregate Area are listed below:

- SWMU 15-007(c) – Shaft
- SWMU 15-008(b) – Surface Disposal Site
- AOC 15-008(g) – Surface Disposal Site
- SWMU 15-009(b) – Septic System
- SWMU 15-010(b) – Septic System

2.0 OVERVIEW

This progress report summarizes the field investigations conducted by the U.S. Department of Energy Environmental Management Los Alamos Field Office and Newport News Nuclear BWXT-Los Alamos, LLC (N3B) in accordance with the approved "Phase II Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 3" (N3B 2021, 701729; NMED 2021, 701775). This progress report presents the status of the Phase II fieldwork implementation and site investigations completed to date for the Threemile Canyon Aggregate Area.

Sampling was initiated in 2022 at AOC 15-008(g) and SWMU 15-009(b) (Figure 2.0-1). The results from the investigation of AOC 15-008(g) and SWMU 15-009(b) will be included in the Phase II Investigation Report for Threemile Canyon Aggregate Area.

In 2019, investigation and remediation occurred at SWMU 15-007(c) and SWMU 15-008(b) as part of the Aggregate Area Known Cleanup Sites Campaign, and the status was reported to the New Mexico Environment Department (NMED) in a letter report (N3B 2019, 700665). The results from the investigation and remediation of SWMUs 15-007(c) and 15-008(b) will be included in the Phase II Investigation Report for Threemile Canyon Aggregate Area.

2.1 Mobilization and Investigations

Site mobilization and sampling activities at AOC 15-008(g) and SWMU 15-009(b) were implemented by N3B on February 23, 2022.

3.0 SUMMARY OF FIELDWORK COMPLETED IN FISCAL YEAR 2022

The following sections summarize the status of fieldwork initiated at AOC 15-008(g) and SWMU 15-009(b).

3.1 AOC 15-008(g) – Surface Disposal Site

3.1.1 Site Description and Operational History

AOC 15-008(g) is the location of a former pile of broken sandbags located in TA-15 at inactive Firing Site R-45 [SWMU 15-006(d)]. The sandbags were used as shielding for the explosives tests carried out at the firing site (LANL 1996, 054977, p. 5-103). Firing Site R-45 was constructed in 1951 and was used until 1992 for experiments involving small amounts of explosives. The sandbags had been removed from the site at an unknown date before 2008.

3.1.2 Previous Investigations

Previous investigations at AOC 15-008(g) were conducted in 2009–2010 in accordance with the approved “Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 1” (LANL 2008, 105673; NMED 2008, 104256). A total of eight samples were collected from four locations at AOC 15-008(g) and analyzed for target analyte list (TAL) metals, total cyanide, total uranium, perchlorate, explosive compounds, polychlorinated biphenyls (PCBs), americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium.

The approved “Supplemental Investigation Report for Threemile Canyon Aggregate Area, Revision 1” (SIR) (N3B 2018, 700033; NMED 2018, 700058) concluded nature and extent of contamination have been defined or no further sampling for extent is warranted at AOC 15-008(g), except for the lateral extent of lead at location 15-610568. In addition, barium and 4-nitrotoluene data from sampling locations 15-610565, 15-610566, 15-610567, and 15-610568 at AOC 15-008(g) were rejected during the data validation process.

3.1.3 Investigation Objective

The objective of the investigation is to define the nature and extent of contamination associated with AOC 15-008(g) and ensure that no potential unacceptable human health or ecological risk exists at this site. Investigation plans for AOC 15-008(g) included collecting and analyzing a total of 12 samples.

The IWP proposed that samples be collected from two locations east and west of existing location 15-610568 and from two depth intervals, 0.0–0.5 ft and 2.0–2.5 ft below ground surface (bgs), to define the lateral extent of lead.

The IWP proposed that sampling locations 15-610565, 15-610566, 15-610567, and 15-610568 be resampled to replace rejected barium and 4-nitrotoluene data. The IWP proposed that samples be collected at depth intervals of 0.0–0.5 ft and 2.0–2.5 ft bgs and analyzed for barium and 4-nitrotoluene.

3.1.4 Fieldwork Completed

N3B mobilized and completed sampling at AOC 15-008(g) on February 23, 2022. A total of 12 investigation samples were collected from 6 locations. Of the 12 samples, 4 samples were analyzed for lead and 8 samples were analyzed for barium and 4-nitrotoluene. The sample locations are shown in Figure 2.0-1.

3.2 SWMU 15-009(b) – Septic System

3.2.1 Site Description and Operational History

SWMU 15-009(b) is a septic system located at inactive Firing Site R-45 at TA-15. The septic system consists of a former septic tank (structure 15-61), a seepage pit, associated drainlines, and a former outfall. The septic tank was constructed in 1951 of reinforced concrete with a 540-gal. capacity. This septic system served restroom facilities in the firing site control building 15-45. The septic tank originally discharged to an outfall located approximately 20 ft southeast of the septic tank. In the 1970s, a seepage pit measuring approximately 4 ft in diameter × 50 ft deep was constructed to receive discharges from the septic tank. A 2003 engineering drawing shows the outfall pipe has been plugged (LANL 2003, 102118).

The septic tank (structure 15-61) was removed in 2010 during the 2009–2010 investigation, but the drainlines and seepage pit remain in place.

3.2.2 Previous Investigations

A total of 20 samples were collected in 2009–2010 from nine locations at SWMU 15-009(b) and analyzed for TAL metals, total cyanide, nitrate, total uranium, perchlorate, explosive compounds, semivolatile organic compounds, volatile organic compounds, PCBs, americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium.

The approved SIR (N3B 2018, 700033; NMED 2018, 700058) concluded nature and extent of contamination have been defined or no further sampling for extent is warranted at SWMU 15-009(b), except for the lateral extent of uranium, uranium-234, uranium-235/236, and uranium-238 at location 15-610831.

3.2.3 Investigation Objective

The objective of the investigation is to define the nature and extent of contamination associated with SWMU 15-009(b) and ensure that no potential unacceptable human health or ecological risk exists at this site. The approved Phase II IWP (N3B 2021, 701729; NMED 2021, 701775) proposed sampling two new locations downgradient of previously sampled location 15-610831, from depth intervals of 0–1 ft and 1–2 ft, and analyzing the samples for isotopic uranium.

3.2.4 Fieldwork Completed

N3B mobilized and completed sampling at SWMU 15-009(b) on February 23, 2022. A total of four investigation samples were collected from two locations. Samples were analyzed for isotopic uranium. The sample locations are shown in Figure 2.0-1.

4.0 FY 2022 MILESTONE

The requirement of a progress report summarizing the FY 2022 Phase II fieldwork implementation and status of site investigations in the Threemile Canyon Aggregate Area has been met by completion and submittal of this progress report. Sections 3.1.4 and 3.2.4 describe the fieldwork completed in FY 2022.

5.0 PLANNED WORK IN FY 2023

Phase II fieldwork at Threemile Canyon Aggregate Area will continue in FY 2023 to complete the sampling planned at SWMU 15-010(b) specified in the approved Phase II IWP (N3B 2021, 701729; NMED 2021, 701775) (Figure 2.0-1).

6.0 REFERENCES

The following reference list includes documents cited in this report. 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).

LANL (Los Alamos National Laboratory), May 1996. "RFI Report for Potential Release Sites at TA-15, 15-001, 15-002, 15-004(g,h), 15-005(b,c), 15-006(c,d), 15-007(a), 15-008(c,g), 15-009(a,f,i,k), 15-010(a-c), 15-011(a-c), 15-012(a), 15-014(a,b,d,e,g-l), C-15-001, C-15-005, C-15-007, C-15-010, and C-15-011 (located in former Operable Unit 1086)," Los Alamos National Laboratory document LA-UR-95-1685, Los Alamos, New Mexico. (LANL 1996, 054977)

LANL (Los Alamos National Laboratory), May 14, 2003. "Utility Record Drawings, Sanitary Sewer System, TA-15," Engineering Drawing AB1021, sheet number 9 of 13, Los Alamos, New Mexico. (LANL 2003, 102118)

LANL (Los Alamos National Laboratory), October 2008. "Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-08-6727, Los Alamos, New Mexico. (LANL 2008, 105673)

N3B (Newport News Nuclear BWXT-Los Alamos, LLC), July 2018. "Supplemental Investigation Report for Threemile Canyon Aggregate Area, Revision 1," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2018-0011, Los Alamos, New Mexico. (N3B 2018, 700033)

N3B (Newport News Nuclear BWXT-Los Alamos, LLC), November 2019. "Field Completion Letter Report for Aggregate Area Known Cleanup Sites Campaign: SWMU 39-002(a), SWMU 46-004(q), SWMU 15-008(b), and SWMU 15-007(c)," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2019-0360, Los Alamos, New Mexico. (N3B 2019, 700665)

N3B (Newport News Nuclear BWXT-Los Alamos, LLC), October 2021. "Phase II Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 3," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2021-0579, Los Alamos, New Mexico. (N3B 2021, 701729)

NMED (New Mexico Environment Department), November 20, 2008. "Approval with Modifications for Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 1," New Mexico Environment Department letter to D. Gregory (DOE-LASO) and D. McInroy (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2008, 104256)

NMED (New Mexico Environment Department), August 28, 2018. "Approval, Supplemental Investigation Report for Threemile Canyon Aggregate Area, Revision 1," New Mexico Environment Department letter to D. Hintze (DOE-EM-LA) and N. Lombardo (N3B) from J.E. Kieling (NMED-HWB), Santa Fe, New Mexico. (NMED 2018, 700058)

NMED (New Mexico Environment Department), November 29, 2021. "Approval, Phase II Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 3," New Mexico Environment Department letter to A. Duran (EM-LA) from R. Shean (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701775)

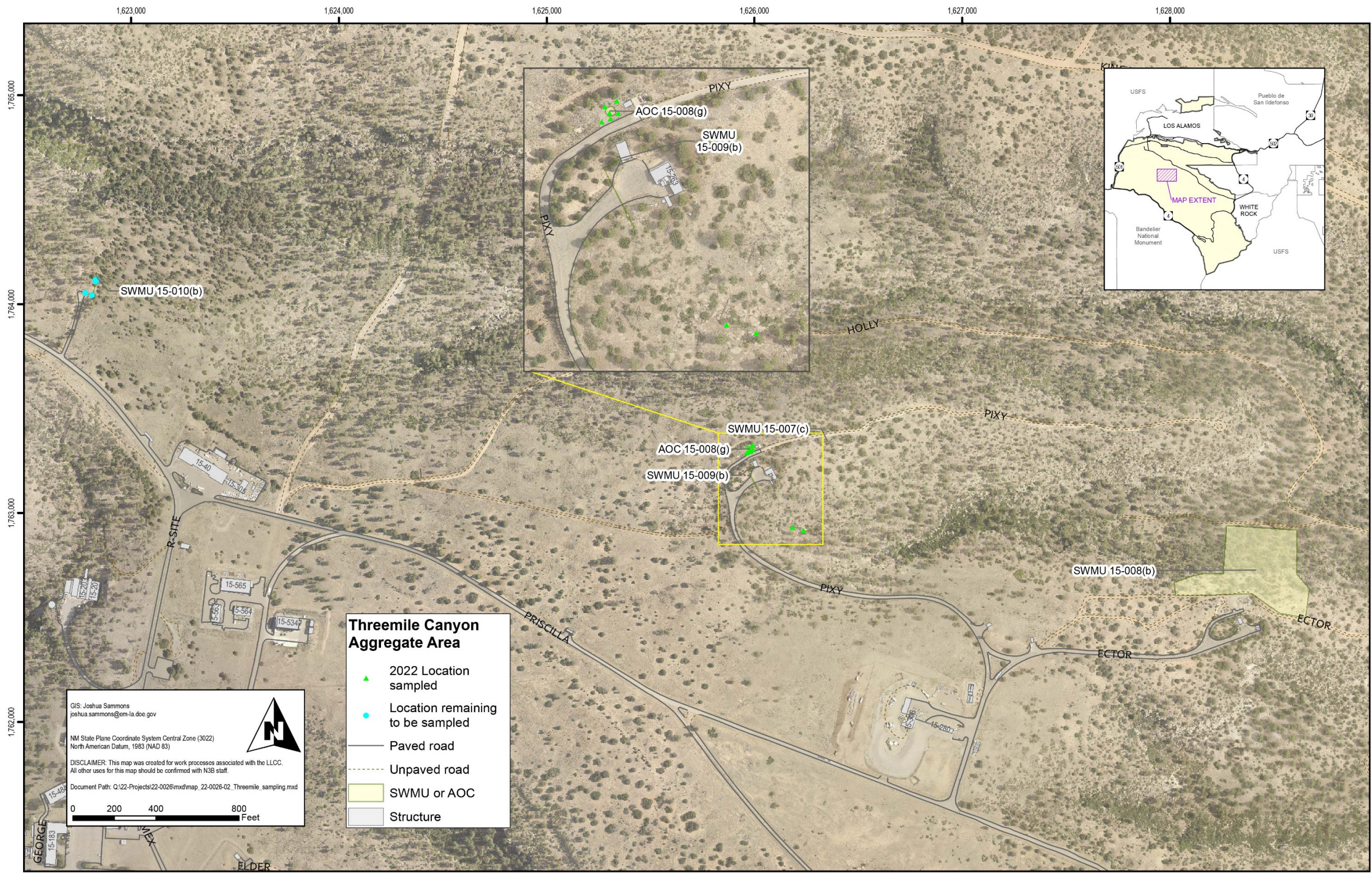


Figure 2.0-1 Threemile Canyon Aggregate Area Phase II sites

