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John Kieling, Bureau Chief
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2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Subject: Fiscal Year 2017 Fieldwork Completion Status Report for Middle Los Alamos Canyon Aggregate Area

Dear Mr. Kieling:

Enclosed please find two hard copies with electronic files of the Fiscal Year 2017 Fieldwork Completion Status Report for Middle Los Alamos Canyon Aggregate Area. This status report fulfills a 2016 Compliance Order on Consent deliverable requirement under the Historical Properties Completion Campaign as identified in Appendix B, Milestones and Targets, Milestone #14, "Historical Properties—Middle Los Alamos Canyon."

If you have any questions, please contact Todd Haagenstad at (505) 665-2936 (hth@lanl.gov) or Cheryl Rodriguez at (505) 665-5330 (cheryl.rodriguez@em.doe.gov).

Sincerely,

Bruce Robinson, Program Director
Environmental Remediation Program
Los Alamos National Laboratory

Sincerely,

David S. Rhodes, Director
Office of Quality and Regulatory Compliance
Los Alamos Environmental Management
Field Office

BR/DR/TH:sm

Enclosures: Two hard copies with electronic files – Fiscal Year 2017 Fieldwork Completion Status Report for Middle Los Alamos Canyon Aggregate Area (EP2017-0118)

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September 2017
EP2017-0118

Fiscal Year 2017 Fieldwork Completion Status Report for Middle Los Alamos Canyon Aggregate Area

Los Alamos
NATIONAL LABORATORY
EST. 1943

Prepared by the Associate Directorate for Environmental Management

EP2017-0118

Fiscal Year 2017 Fieldwork Completion Status Report for Middle Los Alamos Canyon Aggregate Area

September 2017

Responsible project manager:

Todd Haagenstad		Project Manager	Environmental Remediation Program	9/20/17
Printed Name	Signature	Title	Organization	Date

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Responsible DOE-EM-LA representative:

David S. Rhodes		Office Director	Quality and Regulatory Compliance	9-28-2017
Printed Name	Signature	Title	Organization	Date

EXECUTIVE SUMMARY

This status report fulfills a 2017 Compliance Order on Consent requirement under the Historical Properties Completion Campaign as identified in Appendix B, Milestones and Targets, Milestone #14, "Historical Properties—Middle Los Alamos Canyon." The specific milestone addressed in this report is described as a progress milestone for field cleanup of solid waste management units and areas of concern (AOCs) that were identified during the Phase I and II investigations and that require remediation to less than applicable soil screening levels, including cleanup of polychlorinated biphenyls at AOC 02-011(a).

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1.0 PURPOSE OF REPORT

The purpose of this status report is to fulfill a fiscal year 2017 (FY2017) Compliance Order on Consent (Consent Order) requirement under the Historical Properties Completion Campaign as identified in Appendix B, Milestones and Targets, Milestone #14, "Historical Properties—Middle Los Alamos Canyon." The specific milestone addressed in this report is described as a field progress milestone for cleanup of solid waste management units (SWMUs) and areas of concern (AOCs) that were identified during the Phase I and Phase II investigations and that require remediation to less than soil screening levels, including cleanup of polychlorinated biphenyls (PCBs) at AOC 02-011(a).

2.0 OVERVIEW

The U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office (EM-LA) and Los Alamos National Security, LLC (LANS) Associate Directorate for Environmental Management (ADEM) are in the process of completing corrective actions, including investigation and remediation, of the Middle Los Alamos Canyon Aggregate Area as required by the 2016 Consent Order and identified in the Phase II investigation report for the Middle Los Alamos Canyon Aggregate Area (LANL 2010, 110860; NMED 2011, 111674).

The SWMUs and AOCs addressed in this report are potentially contaminated with both hazardous and radioactive components. Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to the New Mexico Environment Department (NMED) in accordance with DOE policy.

2.1 Background

The Middle Los Alamos Canyon Aggregate Area was established under the 2005 Consent Order and includes SWMUs and AOCs located within Technical Area 02 (TA-02), TA-21, and former TA-26. As required by the 2005 Consent Order, an investigation work plan for the Middle Los Alamos Canyon Aggregate Area was submitted to NMED (LANL 2006, 092571.12) and approved in May 2006 (NMED 2006, 095416). The investigation activities described in the work plan were implemented and an investigation report was submitted to NMED (LANL 2008, 101669.12) and approved in May 2008 (NMED 2008, 101702). The investigation report recommended additional sampling to define extent of contamination at all of the investigated sites, as well as soil removal at several sites in TA-02 and TA-21. A Phase II investigation work plan was submitted to NMED (LANL 2009, 105090) and approved in March 2009 (NMED 2009, 105595). Following approval of the Phase II investigation work plan, the Phase II investigation was implemented and a Phase II investigation report submitted to NMED in March 2011 (LANL 2011, 201558). The report was revised to address NMED comments (NMED 2011, 203615) and Revision 1 to the Phase II investigation report was submitted to NMED in August 2011 (LANL 2011, 205220). Revision 1 of the Phase II investigation report concluded that the nature and extent of contamination were defined for all but two sites at TA-02, three sites at TA-21, and four sites at TA-26. Additional sampling to define extent was recommended at these sites, along with removal of PCB-contaminated soil at one of the TA-02 sites. Rather than approving the revised Phase II investigation report, NMED issued a direction to modify in September 2011 (NMED 2011, 207056), requiring further revision of the Phase II investigation report and submittal of a Phase III investigation work plan.

In January 2012, NMED and DOE entered into a framework agreement for realignment of environmental priorities. Under the framework agreement, environmental work was prioritized with DOE committing to remove all aboveground noncemented transuranic waste stored at TA-54 Area G by June 2014. As a result of this reprioritization, further investigation and remediation activities at Middle Los Alamos Canyon Aggregate Area were delayed.

Work at Middle Los Alamos Canyon Aggregate Area resumed following issuance of the June 2016 Consent Order, which superseded the 2005 Consent Order. The 2016 Consent Order organized work into 17 campaigns. Work in Middle Los Alamos Canyon Aggregate Area is part of the Historical Properties Completion Campaign. Work specifically identified in this campaign for Middle Los Alamos Canyon included PCB cleanup at AOC 02-011(a), ecological risk assessment, and Phase II investigations. The FY2017 milestones in Appendix B of the 2016 Consent Order included a progress milestone for field cleanup of SWMUs and AOCs that were identified during the Phase I and II investigations and require remediation to less than SSLs, including PCB cleanup at AOC 02-011(a). This report documents activities performed in FY2017.

3.0 SUMMARY OF FIELDWORK COMPLETED IN FY2017

As part of the 2012 framework agreement, NMED and DOE agreed to review characterization efforts undertaken to date pursuant to the Consent Order to identify those sites where the nature and extent of contamination have been adequately characterized. Pursuant to the framework agreement, the Laboratory reviewed its data evaluation process with respect to U.S. Environmental Protection Agency (EPA) guidance and the framework agreement principles and concluded that this process could be revised to more efficiently complete site characterization, while providing full protection of human health and the environment. Specifically, the process for evaluating data to define the extent of contamination was revised to provide a greater emphasis on risk reduction, consistent with EPA guidance. The results of the previous investigations for Middle Los Alamos Canyon Aggregate Area were reviewed consistent with this new process to better define the scope of work needed to complete the Phase II investigations. Figure 3.0-1 identifies the locations of legacy sites addressed during the FY2017 fieldwork activities. Specific activities identified for execution in FY2017 include the following:

- Soil sampling at AOC 02-011(d) to define the extent of contamination for inorganic chemicals, organic chemicals, and radionuclides.
- Soil sampling at SWMU 02-005 to define the extent of contamination for PCBs.
- Soil sampling at AOC 02-011(a)(ii) to define the extent of contamination for PCBs, including delineating areas requiring soil removal.
- Remediation of PCB-contaminated soil at AOC 02-011(a)(ii).

Results from previous investigations were also reviewed to identify chemicals of potential ecological concern (COPECs) that might result in unacceptable ecological risk for the Middle Los Alamos Canyon Aggregate Area. This evaluation identified the following COPECs and receptors:

- Metals
  - ❖ Mercury: earthworm and robin (TA-02)
  - ❖ Selenium: plant, earthworm, and middle-trophic-level wildlife (TA-02 and TA-26)

- Organic chemicals
    - ❖ PCBs: robin, with shrew and deer mouse to lesser extent (TA-02)
    - ❖ TCDD (2,3,7,8-tetrachlorodibenzodioxin): shrew and deer mouse (TA-02)

Based on this evaluation, ecotoxicology studies at TA-02 and TA-26 were performed to identify potential adverse effects from COPECs in soil. The ecotoxicology studies included

- collection and chemical analysis of soil samples,
- cavity-nesting bird monitoring and chemical analysis of eggs,
- small-mammal trapping and chemical analysis of whole organisms,
- earthworm bioaccumulation testing—measures of growth and survival and chemical analysis of whole organisms, and
- seedling germination testing.

The following sections provide site descriptions, summarize fieldwork completed through FY2017 and describe the current site status associated with the above activities.

3.1 AOC 02-011(d), Outfall from Building 02-44

3.1.1 Site Description

AOC 02-011(d) was a National Pollutant Discharge Elimination System– (NPDES-) permitted outfall that discharged effluent from the Omega West Reactor (OWR) equipment building [02-44, AOC 02-004(f)]. The line ran from the equipment building south-southwest, past the western side of the cooling tower (structure 02-49), to Los Alamos Creek. The outfall at AOC 02-011(d) became operational in 1949, discharging effluent to Los Alamos Creek. The discharge consisted primarily of regenerate water from the ion-exchange system. Discharge was rerouted through the OWR effluent storage tanks and disposed of through the liquid acid waste line to TA-50 beginning in 1963. The outfall was removed from the NPDES permit in 1995. Currently, AOC 02-011(d) is located in an open area above, directly north and adjacent to Los Alamos Creek (Figure A-1 in Appendix A).

3.1.2 Fieldwork Completed in FY2017

Based on the results of previous investigations, lateral and vertical extent of contamination for inorganic and organic chemicals and radionuclides were not defined at location 02-600574 (Figure 3.1-1). Samples were collected at location 02-600574 at two depths (3.0 ft to 4.0 ft and 5.0 ft to 6.0 ft below ground surface [bgs]) greater than previous investigations to define vertical extent. Samples were collected at one location to the north of location 02-600574 at depths of 0.0 ft to 1.0 ft, 2.0 ft to 3.0 ft, and 4.0 ft to 5.0 ft bgs to define lateral and vertical extent. Samples were analyzed for target analyte list (TAL) metals, hexavalent chromium, nitrate, perchlorate, cyanide, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), PCBs, americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, strontium-90, and tritium. Sampling locations are shown in Figure 3.1-1, and Table 3.1-1 presents samples collected and analyses requested at AOC 02-011(d).

Five soil samples were analyzed for TAL metals, hexavalent chromium, nitrate, perchlorate, and cyanide. Table 3.1-2 presents the results of the inorganic chemicals above BVs and the detected inorganic chemicals that have no background values (BVs).

Five soil samples were analyzed for VOCs, SVOCs, and PCBs. Table 3.1-3 presents the results of the detected organic chemicals.

Five soil samples were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, strontium-90, and tritium. Table 3.1-4 presents the radionuclides detected or detected above BVs/FVs.

3.1.3 Current Site Status and Remaining Work

The lateral and vertical extent of all COPCs at AOC 02-011(d) have been defined or no further sampling is warranted. The concentrations and/or activities of all COPCs in soil and tuff associated with this site are below residential SSLs and/or screening action levels (SALs); no further corrective actions are anticipated. Analytical results for all investigation and field quality control (QC) samples collected during FY2017 are provided in Appendix B (on CD included with this document). All decision-level data for AOC 02-011(d) will be assessed and included in the 2018 Phase II Middle Los Alamos Canyon Aggregate Area investigation report.

3.2 SWMU 02-005, Soil Contamination from Drift Loss and Cooling Tower Blowdown

3.2.1 Site Description

SWMU 02-005 consists of an area potentially affected by airborne drift of potassium dichromate that was used to inhibit corrosion in the OWR cooling tower (structure 02-49). The cooling tower was installed and became operational in 1957. It was constructed with aluminum heat exchangers that were prone to corrosion. Potassium dichromate was added to the make-up water to inhibit corrosion of the heat exchangers. Stainless-steel heat exchangers were installed to eliminate the use of potassium dichromate in 1975. The cooling tower operated until the OWR was shut down in 1993. In 1995, all liquid was drained from the system. In 2000, the cooling tower structure and equipment were removed and disposed of at TA-54. In 2003, the remaining buried pipes and drains were removed and disposed of at TA-54 or off-site.

3.2.2 Fieldwork Completed in FY2017

Based on the results of 2007 investigation, lateral and vertical extent of PCB contamination was not defined at sampling location 02-600561. Additional samples were collected around this location during the 2010 Phase II investigation but did not define lateral and vertical extent. Based on these results, samples were collected at six locations to the west, north, and east of previous locations to define lateral and vertical extent. The portion of SWMU 02-005 where the samples were collected is on a steep and extremely rocky area of the south-facing slope of Los Alamos Canyon (Figure A-2 in Appendix A). Target depths for sample collection were 0.0 ft to 1.0 ft, 2.0 ft to 3.0 ft, and 4.0 ft to 5.0 ft bgs, but not all depths could be sampled because the hand auger used for sampling would not advance (Figure A-3 in Appendix A). Sampling locations are shown in Figure 3.2-1, and Table 3.2-1 presents samples collected and analyses requested at SWMU 02-005.

3.2.3 Current Site Status and Remaining Work

The lateral and vertical extent of PCBs at SWMU 02-005 have not been defined. Additional sampling to define extent will be conducted in FY2018. All decision-level data for SWMU 02-005 will be assessed and included in the 2018 Phase II Middle Los Alamos Canyon Aggregate Area investigation report.

3.3 AOC 02-011(a), Storm Drains and Outfalls

3.3.1 Site Description

AOC 02-011(a) consists of 11 drain segments and associated outfalls across TA-02 designated as AOC 02-011(a)(i) through 02-011(xi). These individual segments drain either directly or indirectly to Los Alamos Creek. AOC 02-011(a)(ii) consists of a 24-in.-diameter, 8-ft-long underground corrugated metal pipe between catch basin 02-36 and catch basin 02-27, as shown on engineering drawing R-5102, sheet 2 of 2 (LANL 1990, 090086). There is no information that the drain handled anything but storm water. The drains in AOC 02-011(a) date from approximately the time of construction of the reactor building in 1944. Drains from operational areas of the facility may have received effluent until the 2003 decontamination and decommissioning (D&D) of the OWR facility, although the reactor was inactive from 1993 to 2003. Several of the drains were removed during either the 2000 or 2003 D&D activities, but five of the drains, or some portion of them, remain in place (WD-3 2003, 082646, pp. 26–31). Currently, AOC 02-011(a)(ii) is situated within a former D&D footprint north of Los Alamos Creek at the bottom of the south-facing slope of Los Alamos Canyon (Figure A-4 in Appendix A)

3.3.2 Fieldwork Completed in FY2017

Based on the results of previous investigations, lateral and vertical extent of contamination for PCBs were not defined at AOC 02-011(a)(ii). Sampling was conducted to define extent at specific locations and to define the areas and depths of soil potentially requiring remediation.

Vertical extent was not defined at location 02-613001, and previous results indicated cleanup may be necessary at this location. Samples were collected at depths of 2.0 ft to 3.0 ft, 8.0 ft to 9.0 ft, 10.0 ft to 11.0 ft, 13.0 ft to 14.0 ft, 16.0 ft to 17.0 ft, and 19.0 ft to 20.0 ft bgs and analyzed for PCBs to define vertical extent and identify the depth interval potentially requiring cleanup.

Vertical extent was not defined at location 02-613287, and previous results indicated cleanup may be necessary at this location. A sample was collected at a depth of 8.0 ft to 9.0 ft bgs and analyzed for PCBs to define vertical extent and identify the depth interval potentially requiring cleanup. Deeper samples were planned but could not be collected because the sampling equipment could not be advanced.

Vertical extent was not defined at location 02-613289. Samples were collected at depths of 2.0 ft to 3.0 ft, 6.0 ft to 7.0 ft, 9.0 ft, 12.0 ft to 13.0 ft, 15.0 ft to 16.0 ft, and 19.0 ft to 20.0 ft bgs and analyzed for PCBs to define vertical extent. The sample from 6.0 ft to 7.0 ft bgs was also analyzed for TAL metals, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and strontium-90 to supplement previous sampling results.

Vertical extent was not defined at location 02-613667, and previous results indicated cleanup may be necessary at this location. Samples were collected at depths of 10.0 ft to 11.0 ft, 13.0 ft to 14.0 ft, 16.0 ft to 17.0 ft, and 19.0 ft to 20.0 ft bgs and analyzed for PCBs to define vertical extent and identify the depth interval potentially requiring cleanup.

Vertical extent was not defined at location 02-613668, and previous results indicated cleanup may be necessary at this location. A sample was collected at a depth of 10.0 ft to 11.0 ft bgs and analyzed for PCBs to define vertical extent and identify the depth interval potentially requiring cleanup. Deeper samples were planned but could not be collected because the sampling equipment could not be advanced further.

Vertical extent was not defined at location 02-613762, and previous results indicated cleanup may be necessary at this location. Samples were collected at depths of 0.0 ft to 1.0 ft, 2.0 ft to 3.0 ft, 4.0 ft to 5.0 ft, 6.0 ft to 7.0 ft, 8.0 ft to 9.0 ft, 11.0 ft to 12.0 ft, 14.0 ft to 15.0 ft, and 19.0 ft to 20.0 ft bgs and analyzed for PCBs to define vertical extent and identify the depth interval potentially requiring cleanup. Samples from 0.0 ft to 1.0 ft, 2.0 ft to 3.0 ft, 4.0 ft to 5.0 ft, 6.0 ft to 7.0 ft were also analyzed for TAL metals, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and strontium-90 to supplement previous sampling results.

The previous sampling results were collected to define an area in the vicinity of former structure 02-51 potentially requiring remediation. Samples were collected at 23 locations surrounding this area to define the extent of contamination and refine the lateral and vertical extent of soil potentially requiring removal. Samples were collected at depth intervals ranging from the surface to 20 ft bgs, depending on the results from previous sampling at nearby locations and the depths sampling equipment could reach (Figure A-5 in Appendix A). All samples were analyzed for PCBs. Samples collected from the surface to a depth of 7.0 ft bgs were also analyzed for TAL metals, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and strontium-90 to supplement previous sampling results.

A total of 212 soil samples were analyzed for PCBs and 75 soil samples were analyzed for TAL metals, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and strontium-90. The sampling locations are shown on Figure 3.3-1, and Table 3.3-1 presents samples collected and analyses requested at AOC 02-011(d).

3.3.3 Current Site Status

Based on the results of the soil sampling described in section 3.3.2, the extent of PCB contamination, including the area potentially requiring remediation, was not defined. Additional sampling to define extent of PCB contamination was initiated late in FY2017. The results of that sampling will be used to define the areas of soil contamination requiring remediation.

The results of the sampling for metals and radionuclides were consistent with previous sampling results and indicated that nature and extent was defined for metals and radionuclides.

3.4 Remediation of PCB-contaminated soil at AOC 02-011(a)(ii)

3.4.1 Fieldwork Completed in FY2017

As described in section 3.3.3, the results of the sampling performed in FY2017 did not define the area of PCB-contaminated soil requiring remediation. As a result, the remediation activities planned for FY2017 were not implemented.

3.4.2 Current Site Status

Remediation of PCB-contaminated soil at AOC 02-011(a)(ii) will occur in FY2018 and the results will be reported in the Phase II investigation report for Middle Los Alamos Canyon Aggregate Area.

3.5 Ecotoxicology Studies at TA-02 and TA-26

3.5.1 Fieldwork Completed in FY2017

Soil sampling was performed to collect soil to be used for plant and earthworm toxicology tests. Within TA-02, soil samples were collected at 20 locations where previous sampling had indicated elevated levels of selenium and/or mercury. A soil sample was also collected at a control location outside TA-02. At each location, soil for ecological testing was collected from the depth interval 0.0 ft to 1.0 ft bgs, and a sample for laboratory analysis of selenium and mercury was also collected from this interval. At each location other than the control location, samples for analysis of TAL metals were also collected from the depth intervals 1.0 ft to 2.0 ft and 2.0 ft to 3.0 ft bgs, if possible, based on ability to advance the hand auger used for sampling.

Within TA-26, soil samples were collected at seven locations where previous sampling had indicated elevated levels of selenium (Figure A-6 in Appendix A). A soil sample was also collected at a control location outside TA-26. At each location, soil for ecological testing was collected from the depth interval 0.0 ft to 1.0 ft bgs, and a sample for laboratory analysis of selenium was also collected from this interval. At each location other than at the control location, samples were also collected for analysis of TAL metals from the depth intervals 1.0 ft to 2.0 ft and 2.0 ft to 3.0 ft bgs, if the hand auger used for sampling could be advanced. Sampling locations are shown in Figures 3.5-1 and 3.5-2 for TA-02 and TA-26, respectively. Table 3.5-1 presents samples collected and analyses requested for ecotoxicology soil testing.

Small-mammal populations were assessed by mark-recapture methods. One hundred Sherman-live traps were placed in a 5 × 20 fashion within each of the three study grids; the upper grid (located at the area of highest COPEC concentrations), middle grid (downstream of upper grid), and lower grid (downstream of upper and middle grid) (Figure A-7 in Appendix A). Trapping for the mark-recapture study continued for a duration of five consecutive nights (April 23 to April 28, 2017) in the upper, middle, and lower grids. All live-captured small mammals received an ear-tag and were then released. Deceased small mammals were collected throughout the duration of the population assessment study and on the last day of the population assessment study, additional small mammals were euthanized. A total of 33 small mammals were captured from the upper, middle, and lower grids during the 5 nights of trapping. Six of these individuals moved between trap grids at least once during the study period. Seven deceased or euthanized small mammals were composited and analyzed for metals, 8 for dioxins/furans, and 8 for PCB congeners. Figure 3.5-3 shows the locations of the trapping arrays and shrew traps, the locations where mammals were submitted for analysis, and the requested analyses.

Small mammals were also trapped and collected from at a control grid located in upper Los Alamos Canyon near the boundary with the Santa Fe National Forest for chemical analyses. Trapping at the control grid occurred for 1 night (May 1 to May 2, 2017) with 98 Sherman-live traps. Seven small mammals were captured in this array. Two deceased or euthanized small mammals were analyzed for TAL metals, 2 for dioxins/furans, and 2 for PCB congeners (Figure A-8 in Appendix A). Figure 3.5-4 shows the location of the trapping array, the locations where mammals were submitted for analysis, and the requested analyses.

During the same time as the small-mammal trapping, 90 shrew traps were placed adjacent to the stream channel along the length of TA-02 and checked daily. Shrew trap locations are included in Figure 3.5-3. No shrews were captured during the 5 nights of trapping (Figure A-9 in Appendix A).

Soil samples were also collected from within the areas where trapping occurred. Samples were collected from the upper, middle, lower, and control grids as described above. Each grid was divided equally into 6 subgrids, and 1 composite sample of 5 soil samples was collected within each subgrid. Each soil sample was collected with a 10-cm diameter soil ring; the 5 composite samples were homogenized in a ziplock bag, then aliquoted into the sample jars for chemical analyses. A total of 24 composite samples were collected and analyzed for PCB congeners, dioxins/furans, and metals.

Cavity-nesting bird monitoring was performed using the Laboratory's existing nest box network in Los Alamos Canyon, and additional nest boxes installed at TA-02 (Figure A-10 in Appendix A). From May to July 2017, 16 avian nest boxes were monitored for nest success and for nonviable eggs weekly in TA-02; the target species were the western bluebird (*Sialia mexicana*) (Figure A-11 in Appendix A) and ash-throated flycatcher (*Myiarchus cinerascens*).

Only four of the nest boxes were used, and all the nests had viable eggs that could be sampled. One nest contained an ash-throated flycatcher, which was successful. The other three nests were house wrens, which were not the target species and could not be monitored without destroying the nests. Nest box locations are shown in Figure 3.5-3, along with the locations of small-mammal traps.

3.5.2 Current Site Status

Earthworm bioaccumulation tests and seedling germination tests using the soil collected from TA-02 and TA-26 are ongoing. The results of the small-mammal trapping are being used to develop abundance and density estimates. The results of the nest box monitoring at TA-02 are being compared with results from other locations within Los Alamos Canyon. These results, along with results from chemical analyses, will be included in the revised Phase II investigation report for Middle Los Alamos Canyon Aggregate Area and incorporated into the ecological risk assessments to be performed as part of that report.

4.0 REFERENCES AND MAP DATA SOURCES

4.1 References

The following reference list includes documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and ERID or ESHID. This information is also included in text citations. ERIDs were assigned by ADEM's Records Processing Facility (IDs through 599999), and ESHIDs are assigned by the Environment, Safety, and Health Directorate (IDs 600000 and above). IDs are used to locate documents in the Laboratory's Electronic Document Management System and in the Master Reference Set. The NMED Hazardous Waste Bureau and ADEM maintain copies of the Master Reference Set. The set ensures that NMED has the references to review documents. The set is updated when new references are cited in documents.

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NMED (New Mexico Environment Department), May 23, 2008. "Notice of Approval, Investigation Report for Middle Los Alamos Canyon Aggregate Area," 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, 101702)

NMED (New Mexico Environment Department), March 25, 2009. "Approval, Middle Los Alamos Canyon Aggregate Area Phase II Work Plan, 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 2009, 105595)

NMED (New Mexico Environment Department), January 19, 2011. "Approval with Modifications, Phase II Investigation Work Plan for Upper Los Alamos Canyon Aggregate Area," New Mexico Environment Department letter to G.J. Rael (DOE-LASO) and M.J. Graham (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2011, 111674)

NMED (New Mexico Environment Department), May 24, 2011. "Notice of Disapproval [for the] Phase II Investigation Report for Middle Los Alamos Canyon Aggregate Area," New Mexico Environment Department letter to G.J. Rael (DOE-LASO) and M.J. Graham (LANL) from J.E. Kieling (NMED-HWB), Santa Fe, New Mexico. (NMED 2011, 203615)

NMED (New Mexico Environment Department), September 30, 2011. "Direction to Modify [for the] Phase II Investigation Report for Middle Los Alamos Canyon Aggregate Area, Revision 1," New Mexico Environment Department letter to G.J. Rael (DOE-LASO) and M.J. Graham (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2011, 207056)

NMED (New Mexico Environment Department), March 2017. "Risk Assessment Guidance for Site Investigations and Remediation, Volume 1, Soil Screening Guidance for Human Health Risk Assessments," Hazardous Waste Bureau and Ground Water Quality Bureau, Santa Fe, New Mexico. (NMED 2017, 602273)

WD-3 (Washington-Framatome ANP Decontamination and Decommissioning, LLC), August 2003. "Omega West Decommissioning, Final Project Report, Volume 1," report prepared for Los Alamos National Laboratory, Los Alamos, New Mexico. (WD-3 2003, 082646)

4.2 Map Data Sources

Paved Road Arcs; Los Alamos National Laboratory, FWO Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 29 November 2010.

Technical Area Boundaries; Los Alamos National Laboratory, Site Planning & Project Initiation Group, Infrastructure Planning Office; September 2007; as published 13 August 2010.

Structures; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 29 November 2010.

Former Structures of the Los Alamos Site, Line Feature Representation; Los Alamos National Laboratory, ESH&Q Waste & Environmental Services Division, EP2010-0A; 1:2,500 Scale Data; 09 August 2010.

SWMU or AOC boundary: Potential Release Sites; Los Alamos National Laboratory, ESH&Q Waste & Environmental Services Division, Environmental Data and Analysis Group.

Contours, All intervals; As generated from 2014 LiDAR elevation data; Los Alamos National Laboratory, ER-ES; As published, project 12-0086; 2017.

LANL Areas Used and Occupied ; Los Alamos National Laboratory, Site Planning & Project Initiation Group, Infrastructure Planning Office; 19 September 2007; as published 21 June 2017.

Excavation Areas; Los Alamos National Laboratory, ER-ES, As published, GIS projects folder; \\slip\gis\GIS\Projects\12-Projects\12-0086\gdb\gdb_12-0086.g; proposed_excavation; 2017

Sampling Locations; Los Alamos National Laboratory, Waste and Environmental Services

Division; Locus EIM database pull

Pressure treated fences and posts; Los Alamos National Laboratory, ER-ES, as published, GIS projects folder; \\slip\gis\GIS\Projects\12-Projects\12-0086\gdb\gdb_12-0086.gdb; fence 2017

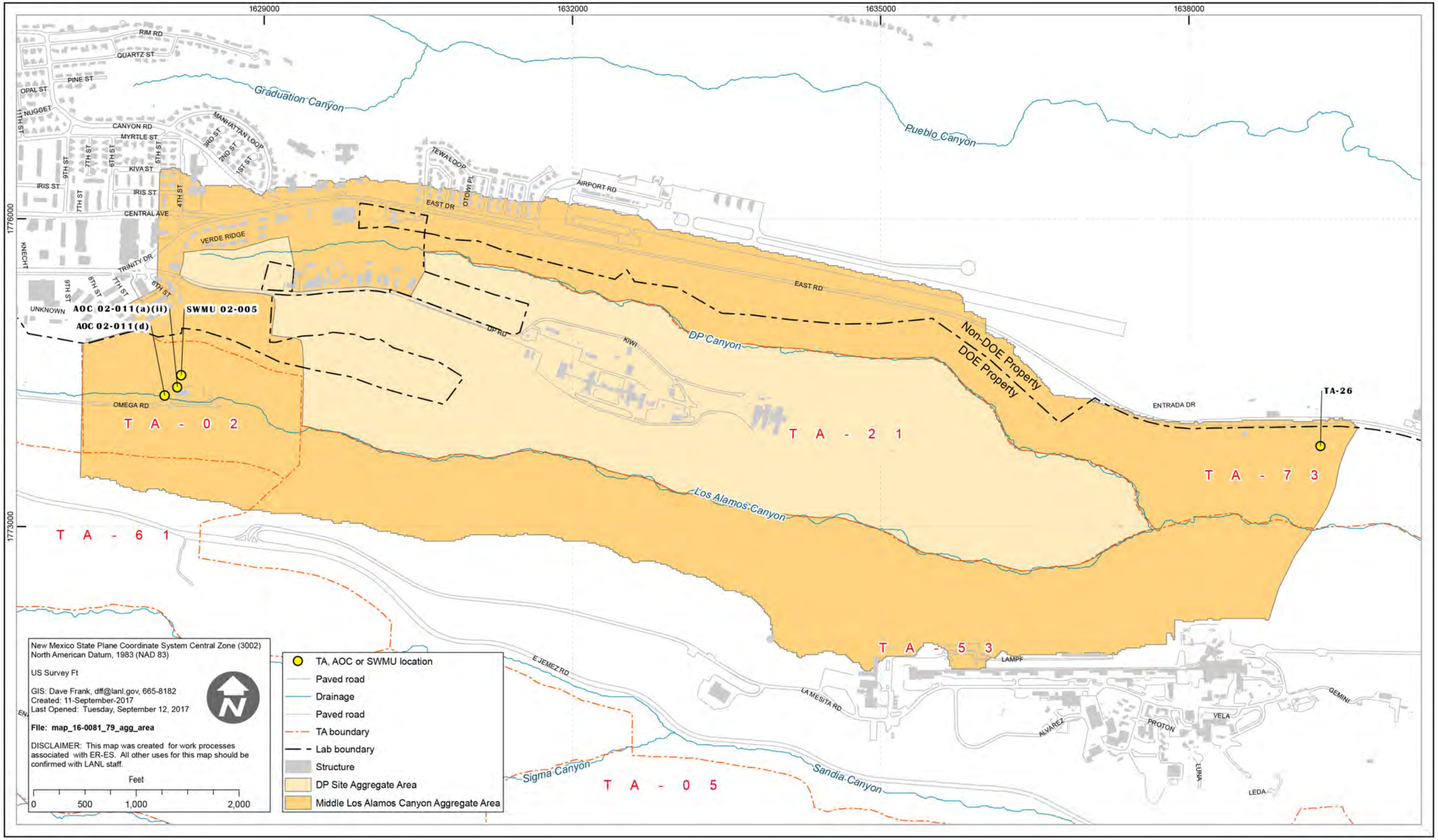

Figure 3.0-1 Middle Los Alamos Canyon Aggregate Area and legacy site locations

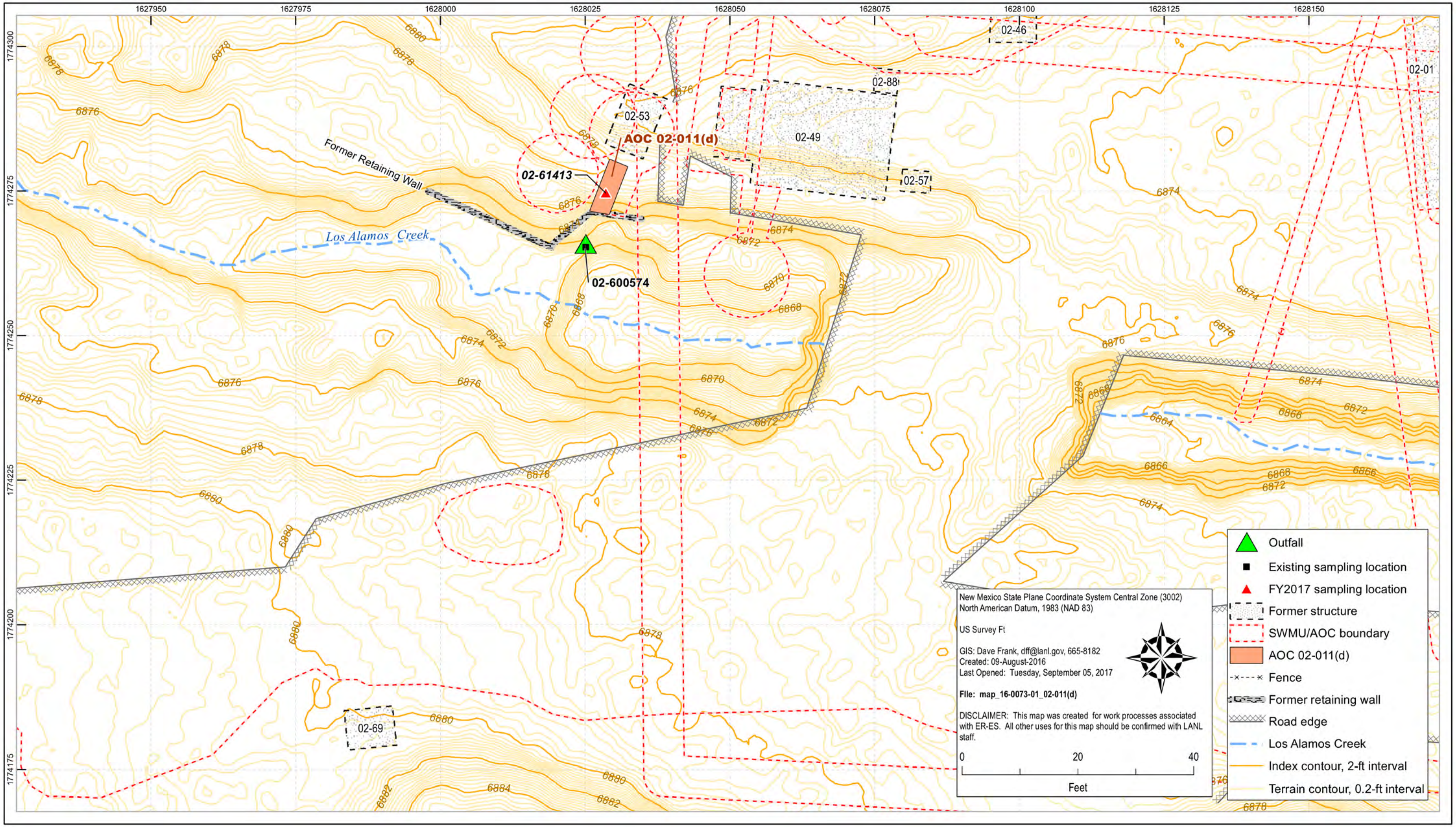

Figure 3.1-1 FY2017 sampling locations at AOC 02-011(d)

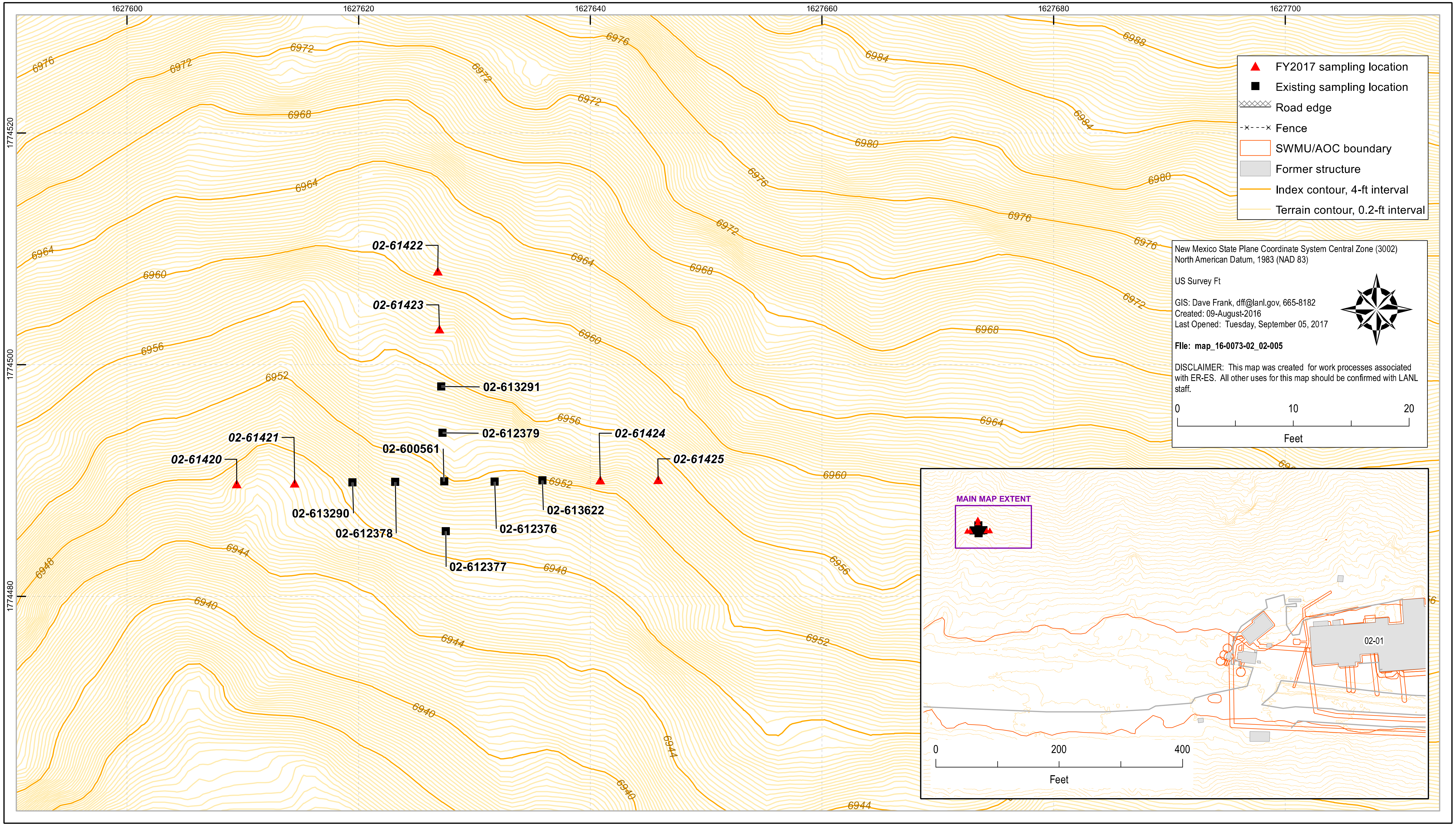

Figure 3.2-1 FY2017 sampling locations at SWMU 02-005

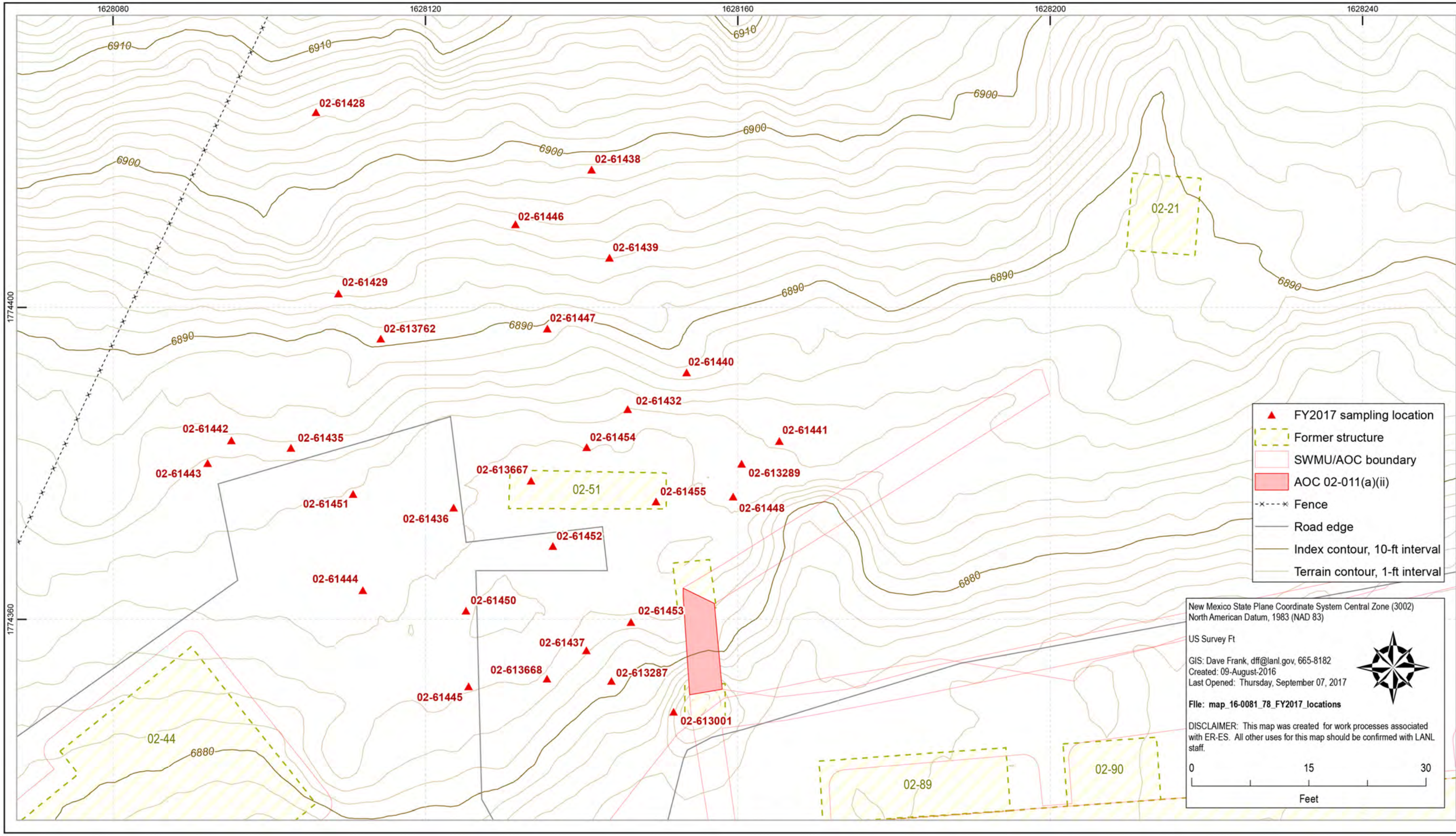

Figure 3.3-1 FY2017 sampling locations at AOC 02-011(a)(ii)

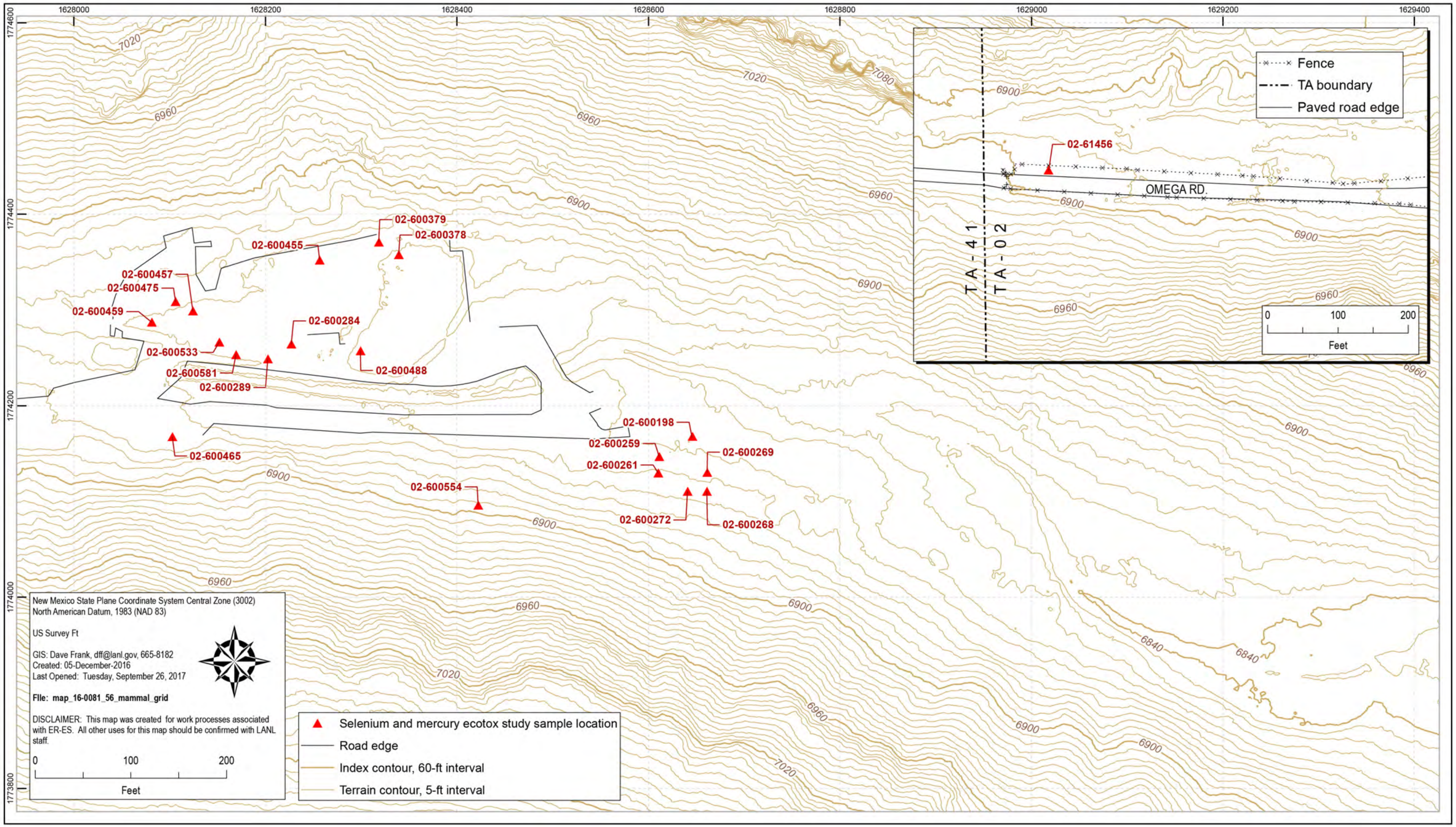

Figure 3.5-1 FY2017 ecotoxicology soil sampling locations at TA-02

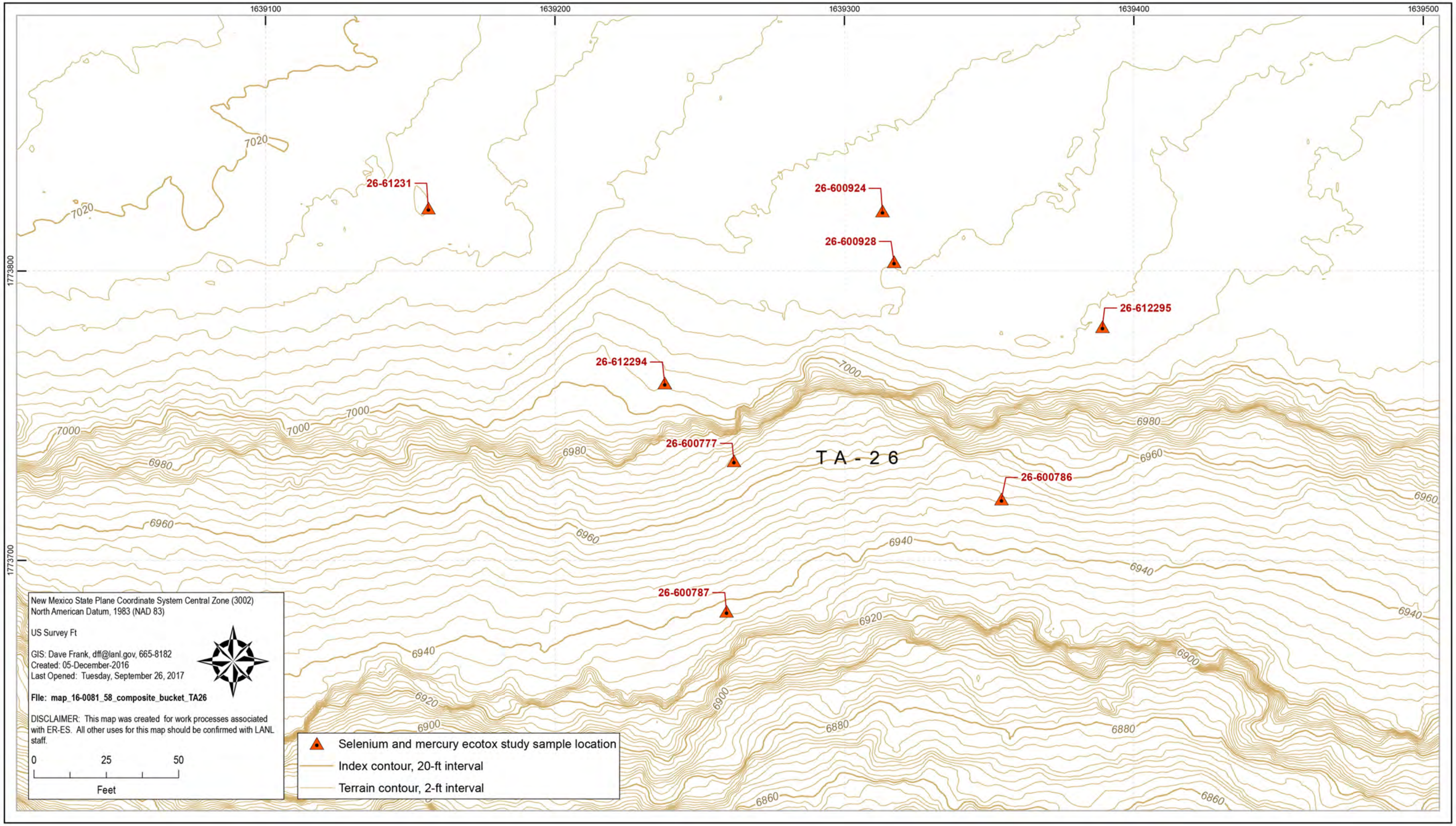

Figure 3.5-2 FY2017 ecotoxicology soil sampling locations at TA-26

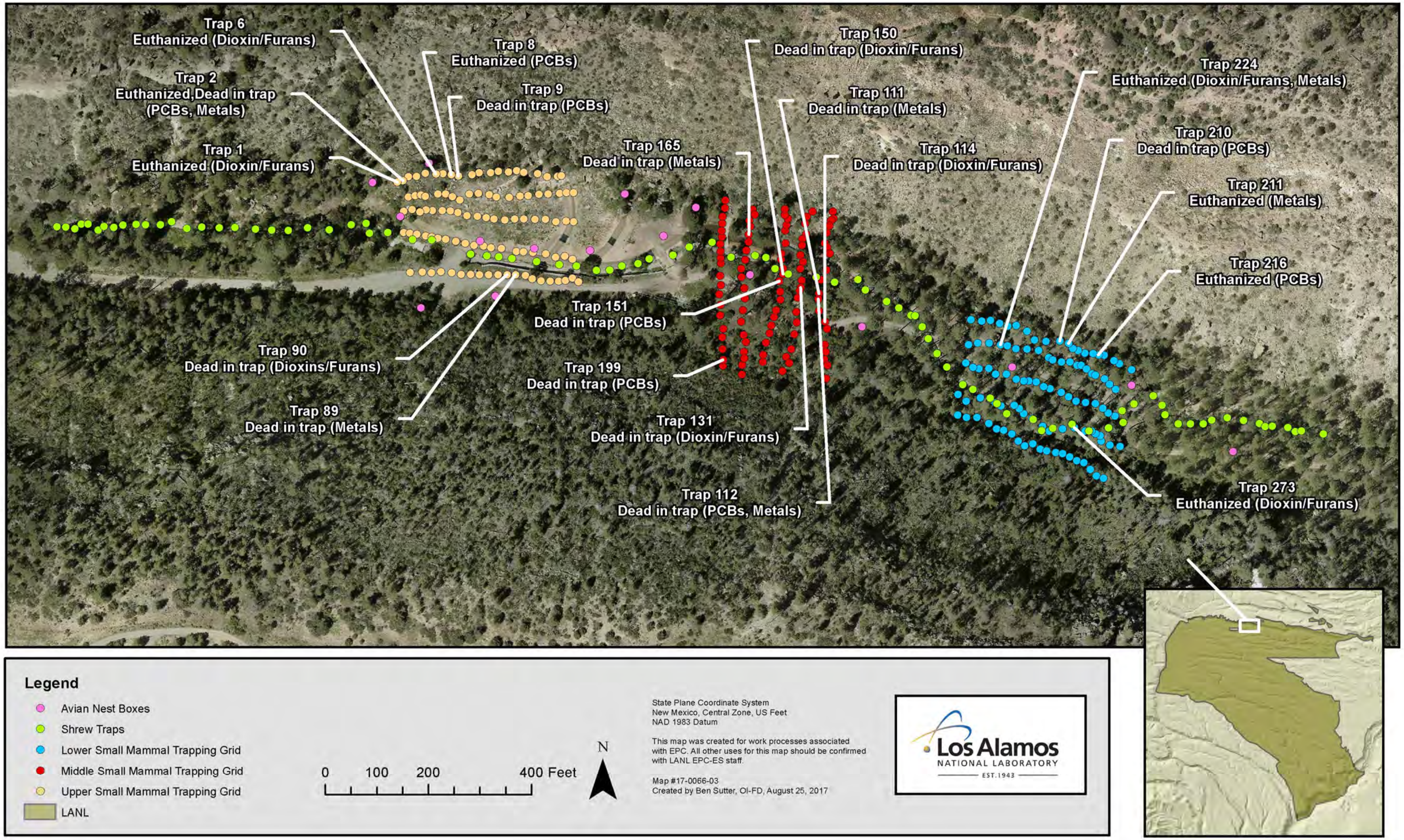

Figure 3.5-3 Small-mammal trapping array and nest box locations in TA-02

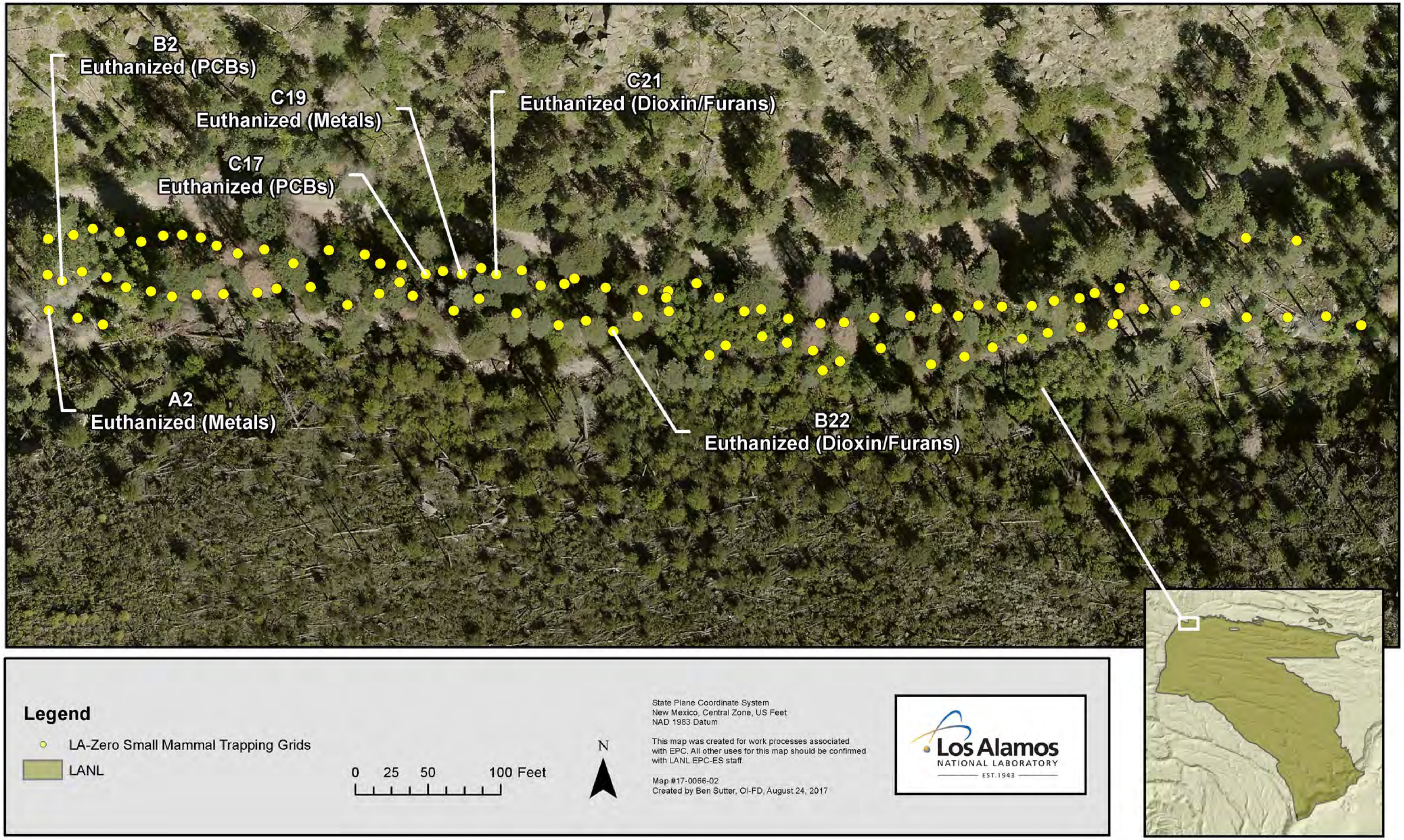

Figure 3.5-4 Small-mammal trapping array control locations in Los Alamos Canyon

Table 3.1-1
Samples Collected and Analyses Requested at AOC 02-011(d)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	Hexavalent Chromium	Cyanide (Total)	Nitrate	Perchlorate	PCBs	SVOCs	VOCs	Americium-241	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90	Tritium
RE02-17-132705	02-600574	3–4	Soil	2017-1913*	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913
RE02-17-132706	02-600574	5–6	Soil	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913
RE02-17-132684	02-61413	0–1	Soil	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913
RE02-17-132691	02-61413	2–3	Soil	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913
RE02-17-132698	02-61413	4–5	Soil	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913	2017-1913

* Chain-of-custody number.

Table 3.1-2
Inorganic Chemicals above BVs in FY2017 Sampling at AOC 02-011(d)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Calcium	Chromium hexavalent ion	Mercury	Nitrate	Perchlorate	Zinc
Soil BV[a]				**0.83**	**6120**	**na**[b]	**0.1**	**na**	**na**	**48.8**
Construction Worker SSL[c]				**142**	**na**	**66.9**	**77.1**	**566,000**	**248**	**106,000**
Industrial SSL[c]				**519**	**na**	**72.1**	**389**	**2,080,000**	**908**	**389,000**
Recreational SSL[c]				**248**	**na**	**40.2**	**186**	**991,000**	**434**	**186,000**
Residential SSL[c]				**31.3**	**na**	**3.05**	**23.5**	**125,000**	**54.8**	**23,500**
RE02-17-132705	02-600574	3–4	Soil	1.02 (U)[d]	19,400 (J-)[e]	0.285 (J)[f]	0.151 (J-)	2.55	0.00172 (J)	—[g]
RE02-17-132706	02-600574	5–6	Soil	—	—	—	—	2.10	0.00172 (J)	—
RE02-17-132684	02-61413	0–1	Soil	0.986 (U)	—	—	—	1.01 (J)	—	—
RE02-17-132691	02-61413	2–3	Soil	1.06 (U)	—	0.164 (J)	—	1.01 (J)	—	—
RE02-17-132698	02-61413	4–5	Soil	1.06 (U)	—	—	—	0.832 (J)	—	50.3

Notes: Results are in mg/kg.
[a] BVs are from LANL (1998, 059730).
[b] na = Not available.
[c] SSLs are from NMED (2017, 602273). If chemical has both carcinogenic and noncarcinogenic SSLs, the lower of the two is presented.
[d] U = The analyte was analyzed for but not detected.
[e] J- = The analyte was positively identified, and the result is likely to be biased low.
[f] J = The analyte was not positively identified in the sample, and the associated value is an estimate of the sample-specific detection or quantitation limit.
[g] — = Not detected or not detected above BV.

Table 3.1-3
Organic Chemicals Detected in FY2017 Sampling at AOC 02-011(d)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Butanone[2-]
Construction Worker SSL[a]				**15,100**	**241,000**	**75,300**	**4.91**	**85.3**	**240**	**106**	**240**	**7530**	**2310**	**91,200**
Industrial SSL[a]				**50,500**	**959,000**	**253,000**	**11**	**11.1**	**32.3**	**23.6**	**32.3**	**25,300**	**323**	**409,000**
Recreational SSL[a]				**17,300**	**551,000**	**86,300**	**5.53**	**10.3**	**12.2**	**1.22**	**12.2**	**8630**	**122**	**354,000**
Residential SSL[a]				**3480**	**66,300**	**17,400**	**1.14**	**2.43**	**1.53**	**1.12**	**1.53**	**1740**	**15.3**	**37,300**
RE02-17-132705	02-600574	3–4	Soil	—[b]	0.00917	—	0.0319	0.0503	0.0254 (J)[c]	0.0277 (J)	0.0328 (J)	0.026 (J)	—	0.0402
RE02-17-132705	02-600574	5–6	Soil	0.0393	—	0.0878	0.0151	0.0212	0.313	0.28	0.401	0.3	0.0485	0.627
RE02-17-132684	02-61413	0–1	Soil	—	—	—	—	0.182	0.0217 (J)	0.0257 (J)	0.0321 (J)	0.022 (J)	—	0.0287 (J)
RE02-17-132691	02-61413	2–3	Soil	0.0421	—	0.0512	0.0342	0.0784	0.112	0.141	0.18	0.124	—	0.218
RE02-17-132698	02-61413	4–5	Soil	0.0217 (J)	—	0.0369	0.00921	0.0115	0.102	0.104	0.139	0.102	—	0.208

Table 3.1-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Isophorone	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene
Construction Worker SSL[a]				**23,100**	**24**	**10,000**	**10,000**	**240**	**na[d]**	**1000**	**5020**	**7530**	**7530**
Industrial SSL[a]				**3230**	**3.23**	**33,700**	**33,700**	**32.3**	**na**	**3370**	**16,800**	**25,300**	**25,300**
Recreational SSL[a]				**1220**	**1.22**	**11,500**	**11,500**	**12.2**	**na**	**1150**	**2080**	**8630**	**8630**
Residential SSL[a]				**153**	**0.153**	**2320**	**2320**	**1.53**	**na**	**232**	**1160**	**1740**	**1740**
RE02-17-132705	02-600574	3–4	Soil	0.026 (J)	—	0.0402	—	—	—	—	—	0.0321 (J)	0.051
RE02-17-132705	02-600574	5–6	Soil	0.3	0.0485	0.627	0.0403	0.179	0.145 (J)	0.0112 (J)	0.0468	0.452	0.656
RE02-17-132684	02-61413	0–1	Soil	0.022 (J)	—	0.0287 (J)	—	0.018 (J)	—	—	—	0.0267 (J)	0.0421
RE02-17-132691	02-61413	2–3	Soil	0.124	—	0.218	0.0372	0.0842	—	0.0154 (J)	0.0551	0.316	0.311
RE02-17-132698	02-61413	4–5	Soil	0.102	—	0.208	0.0181 (J)	0.0635	—	—	0.0202 (J)	0.155	0.197

Notes: Results are in mg/kg.

[a] SSLs are from NMED (2017, 602273). If chemical has both carcinogenic and noncarcinogenic SSLs, the lower of the two is presented.

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

[c] J = The analyte was not positively identified in the sample, and the associated value is an estimate of the sample-specific detection or quantitation limit.

[d] na = Not available.

Table 3.1-4
Radionuclides Detected or Detected above BVs/FVs in FY2017 Sampling at AOC 02-011(d)

Sample ID	Location ID	Depth (ft)	Media	Cesium-137	Cobalt-60	Plutonium-239/240
Soil FV[a]				**1.65**	**na[b]**	**0.054**
Construction Worker SAL[c]				**22**	**4.8**	**120**
Industrial SAL[c]				**25**	**5.4**	**710**
Recreational SAL[c]				**220**	**48**	**770**
Residential SAL[c]				**7.2**	**1.6**	**48**
RE02-17-132705	02-600574	3–4	Soil	0.411	0.19 (J)[d]	0.0659
RE02-17-132706	02-600574	5–6	Soil	0.225	—[e]	0.069
RE02-17-132691	02-61413	2–3	Soil	0.34	—	0.0661
RE02-17-132698	02-61413	4–5	Soil	0.258	0.119	0.0703

Note: Results are in pCi/g.

[a] FVs are from LANL (1998, 059730).

[b] na = Not available.

[c] SALs are from LANL (2015, 600929).

[d] J = The analyte was not positively identified in the sample, and the associated value is an estimate of the sample-specific detection or quantitation limit.

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

Table 3.2-1
Samples Collected and Analyses Requested at SWMU 02-005 in FY2017

Sample ID	Location ID	Depth (ft)	Media	PCBs
RE02-17-132721	02-61420	0–1	Soil	2017-1916*
RE02-17-132727	02-61420	2–3	Soil	2017-2089
RE02-17-132722	02-61421	0–1	Soil	2017-1916
RE02-17-132723	02-61422	0–1	Soil	2017-1920
RE02-17-132735	02-61422	2–3	Soil	2017-2089
RE02-17-132724	02-61423	0–1	Soil	2017-1916
RE02-17-132725	02-61424	0–1	Soil	2017-1916
RE02-17-132726	02-61425	0–1	Soil	2017-1916
RE02-17-132732	02-61425	2–3	Soil	2017-1916
RE02-17-132738	02-61425	4–5	Soil	2017-1916

* Chain-of-custody number.

Table 3.3-1
Samples Collected and Analyses Requested at AOC 02-011(a)(ii) in FY2017

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-141630	02-613001	8–9	ALLH	—[a]	2017-2020[b]	—	—	—	—
RE02-17-141631	02-613001	10–11	ALLH	—	2017-2020	—	—	—	—
RE02-17-141632	02-613001	13–14	ALLH	—	2017-2020	—	—	—	—
RE02-17-141633	02-613001	16–17	ALLH	—	2017-2020	—	—	—	—
RE02-17-141634	02-613001	19–20	ALLH	—	2017-2020	—	—	—	—
RE02-17-136051	02-613287	8–9	ALLH	—	2017-2087	—	—	—	—
RE02-17-136056	02-613289	6–7	ALLH	—	2017-1983	—	—	—	—
RE02-17-141635	02-613289	6–7	ALLH	2017-1985	—	2017-1985	2017-1985	2017-1985	2017-1985
RE02-17-136057	02-613289	9–10	ALLH	—	2017-1983	—	—	—	—
RE02-17-136058	02-613289	12–13	ALLH	—	2017-1983	—	—	—	—
RE02-17-136059	02-613289	15–16	ALLH	—	2017-1983	—	—	—	—
RE02-17-136060	02-613289	19–20	ALLH	—	2017-1983	—	—	—	—
RE02-17-136038	02-613667	10–11	ALLH	—	2017-1917	—	—	—	—
RE02-17-136039	02-613667	13–14	ALLH	—	2017-1917	—	—	—	—
RE02-17-136040	02-613667	16–17	ALLH	—	2017-1917	—	—	—	—
RE02-17-136041	02-613667	19–20	ALLH	—	2017-1917	—	—	—	—
RE02-17-136042	02-613668	10–11	ALLH	—	2017-2038	—	—	—	—
RE02-17-136024	02-613762	0–1	ALLH	—	2017-2038	—	—	—	—
RE02-17-141641	02-613762	0–1	ALLH	2017-2035	—	2017-2035	2017-2035	2017-2035	2017-2035

Table 3.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-136025	02-613762	2–3	ALLH	—	2017-2038	—	—	—	—
RE02-17-141642	02-613762	2–3	ALLH	2017-2035	—	2017-2035	2017-2035	2017-2035	2017-2035
RE02-17-136026	02-613762	4–5	ALLH	—	2017-2038	—	—	—	—
RE02-17-141643	02-613762	4–5	ALLH	2017-2035	—	2017-2035	2017-2035	2017-2035	2017-2035
RE02-17-136027	02-613762	6–7	ALLH	—	2017-2038	—	—	—	—
RE02-17-141644	02-613762	6–7	ALLH	2017-2035	—	2017-2035	2017-2035	2017-2035	2017-2035
RE02-17-136028	02-613762	8–9	ALLH	—	2017-2038	—	—	—	—
RE02-17-136029	02-613762	11–12	ALLH	—	2017-2038	—	—	—	—
RE02-17-136030	02-613762	14–15	ALLH	—	2017-2038	—	—	—	—
RE02-17-136032	02-613762	19–20	ALLH	—	2017-2086	—	—	—	—
RE02-17-141612	02-61428	0–1	ALLH	2017-1981	—	2017-1981	2017-1981	2017-1981	2017-1981
RE02-17-135776	02-61428	0–1	ALLH	—	2017-1984	—	—	—	—
RE02-17-135777	02-61428	2–3	ALLH	—	2017-1984	—	—	—	—
RE02-17-141658	02-61428	2–3	ALLH	2017-1981	—	2017-1981	2017-1981	2017-1981	2017-1981
RE02-17-141645	02-61428	4–5	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-135778	02-61428	4–5	ALLH	—	2017-1997	—	—	—	—
RE02-17-135779	02-61428	5–6	ALLH	—	2017-1997	—	—	—	—
RE02-17-141621	02-61428	5–6	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-141659	02-61429	0–1	ALLH	2017-1985	—	2017-1985	2017-1985	2017-1985	2017-1985
RE02-17-135780	02-61429	0–1	ALLH	—	2017-1983	—	—	—	—

Table 3.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-135781	02-61429	2–3	ALLH	—	2017-1983	—	—	—	—
RE02-17-141646	02-61429	2–3	ALLH	2017-1985	—	2017-1985	2017-1985	2017-1985	2017-1985
RE02-17-141622	02-61429	4–5	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-135782	02-61429	4–5	ALLH	—	2017-1997	—	—	—	—
RE02-17-135783	02-61429	5–6	ALLH	—	2017-1997	—	—	—	—
RE02-17-141613	02-61429	5–6	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-141660	02-61432	0–1	ALLH	2017-1981	—	2017-1981	2017-1981	2017-1981	2017-1981
RE02-17-135848	02-61432	0–1	ALLH	—	2017-1984	—	—	—	—
RE02-17-135849	02-61432	2–3	ALLH	—	2017-1984	—	—	—	—
RE02-17-141623	02-61432	2–3	ALLH	2017-1981	—	2017-1981	2017-1981	2017-1981	2017-1981
RE02-17-141647	02-61432	4–5	ALLH	2017-1981	—	2017-1981	2017-1981	2017-1981	2017-1981
RE02-17-135850	02-61432	4–5	ALLH	—	2017-1984	—	—	—	—
RE02-17-135851	02-61432	6–7	ALLH	—	2017-1984	—	—	—	—
RE02-17-141614	02-61432	6–7	ALLH	2017-1981	—	2017-1981	2017-1981	2017-1981	2017-1981
RE02-17-135852	02-61432	8–9	ALLH	—	2017-1984	—	—	—	—
RE02-17-135853	02-61432	11–12	ALLH	—	2017-1984	—	—	—	—
RE02-17-135854	02-61432	14–15	ALLH	—	2017-1984	—	—	—	—
RE02-17-135855	02-61432	16–17	ALLH	—	2017-1984	—	—	—	—
RE02-17-135856	02-61432	19–20	ALLH	—	2017-1984	—	—	—	—
RE02-17-135888	02-61435	0–1	ALLH	—	2017-1997	—	—	—	—

Table 3.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-141615	02-61435	0–1	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-135889	02-61435	2–3	ALLH	—	2017-1997	—	—	—	—
RE02-17-141624	02-61435	2–3	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-141625	02-61435	4–5	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-135890	02-61435	4–5	ALLH	—	2017-1997	—	—	—	—
RE02-17-135891	02-61435	6–7	ALLH	—	2017-1997	—	—	—	—
RE02-17-141648	02-61435	6–7	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-135892	02-61435	8–9	ALLH	—	2017-1997	—	—	—	—
RE02-17-135893	02-61435	11–12	ALLH	—	2017-1997	—	—	—	—
RE02-17-135894	02-61435	14–15	ALLH	—	2017-1997	—	—	—	—
RE02-17-135895	02-61435	16–17	ALLH	—	2017-1997	—	—	—	—
RE02-17-135896	02-61435	19–20	ALLH	—	2017-1997	—	—	—	—
RE02-17-135897	02-61436	0–1	ALLH	—	2017-1931	—	—	—	—
RE02-17-141661	02-61436	0–1	ALLH	2017-1932	—	2017-1932	2017-1932	2017-1932	2017-1932
RE02-17-135898	02-61436	2–3	ALLH	—	2017-1931	—	—	—	—
RE02-17-141626	02-61436	2–3	ALLH	2017-1932	—	2017-1932	2017-1932	2017-1932	2017-1932
RE02-17-141616	02-61436	4–5	ALLH	2017-1932	—	2017-1932	2017-1932	2017-1932	2017-1932
RE02-17-135899	02-61436	4–5	ALLH	—	2017-1931	—	—	—	—
RE02-17-135900	02-61436	6–7	ALLH	—	2017-1931	—	—	—	—
RE02-17-141617	02-61436	6–7	ALLH	2017-1932	—	2017-1932	2017-1932	2017-1932	2017-1932

Table 3.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-135901	02-61436	8–9	ALLH	—	2017-1931	—	—	—	—
RE02-17-135902	02-61436	11–12	ALLH	—	2017-1931	—	—	—	—
RE02-17-135903	02-61436	14–15	ALLH	—	2017-1931	—	—	—	—
RE02-17-135904	02-61436	16–17	ALLH	—	2017-1931	—	—	—	—
RE02-17-135905	02-61436	19–20	ALLH	—	2017-1931	—	—	—	—
RE02-17-135906	02-61437	0–1	ALLH	—	2017-2038	—	—	—	—
RE02-17-141618	02-61437	0–1	ALLH	2017-2035	—	2017-2035	2017-2035	2017-2035	2017-2035
RE02-17-135907	02-61437	2–3	ALLH	—	2017-2038	—	—	—	—
RE02-17-141627	02-61437	2–3	ALLH	2017-2035	—	2017-2035	2017-2035	2017-2035	2017-2035
RE02-17-135908	02-61437	4–5	ALLH	—	2017-2038	—	—	—	—
RE02-17-141649	02-61437	4–5	ALLH	2017-2035	—	2017-2035	2017-2035	2017-2035	2017-2035
RE02-17-135909	02-61437	6–7	ALLH	—	2017-2086	—	—	—	—
RE02-17-135910	02-61437	8–9	ALLH	—	2017-2086	—	—	—	—
RE02-17-135911	02-61437	11–12	ALLH	—	2017-2086	—	—	—	—
RE02-17-135916	02-61438	0–1	ALLH	—	2017-1997	—	—	—	—
RE02-17-141663	02-61438	0–1	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-135917	02-61438	2–3	ALLH	—	2017-1997	—	—	—	—
RE02-17-141650	02-61438	2–3	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-141628	02-61438	4–5	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-135918	02-61438	4–5	ALLH	—	2017-1997	—	—	—	—

Table 3.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-135919	02-61438	6–7	ALLH	—	2017-1997	—	—	—	—
RE02-17-141619	02-61438	6–7	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-135920	02-61438	8–9	ALLH	—	2017-1998	—	—	—	—
RE02-17-135921	02-61438	11–12	ALLH	—	2017-1998	—	—	—	—
RE02-17-135922	02-61438	14–15	ALLH	—	2017-2020	—	—	—	—
RE02-17-135923	02-61438	16–17	ALLH	—	2017-2020	—	—	—	—
RE02-17-135924	02-61438	19–20	ALLH	—	2017-2020	—	—	—	—
RE02-17-135925	02-61439	0–1	ALLH	—	2017-2020	—	—	—	—
RE02-17-141664	02-61439	0–1	ALLH	2017-2021	—	2017-2021	2017-2021	2017-2021	2017-2021
RE02-17-135926	02-61439	2–3	ALLH	—	2017-2020	—	—	—	—
RE02-17-141651	02-61439	2–3	ALLH	2017-2021	—	2017-2021	2017-2021	2017-2021	2017-2021
RE02-17-135933	02-61439	4–5	ALLH	—	2017-2020	—	—	—	—
RE02-17-141629	02-61439	4–5	ALLH	2017-2021	—	2017-2021	2017-2021	2017-2021	2017-2021
RE02-17-135928	02-61439	6–7	ALLH	—	2017-2020	—	—	—	—
RE02-17-141620	02-61439	6–7	ALLH	2017-2021	—	2017-2021	2017-2021	2017-2021	2017-2021
RE02-17-135929	02-61439	8–9	ALLH	—	2017-2020	—	—	—	—
RE02-17-135930	02-61439	11–12	ALLH	—	2017-2020	—	—	—	—
RE02-17-135931	02-61439	14–15	ALLH	—	2017-2020	—	—	—	—
RE02-17-135932	02-61439	16–17	ALLH	—	2017-2020	—	—	—	—
RE02-17-135927	02-61439	19–20	ALLH	—	2017-2020	—	—	—	—

Table 3.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-135934	02-61440	0–1	ALLH	—	2017-2086	—	—	—	—
RE02-17-135935	02-61440	2–3	ALLH	—	2017-2086	—	—	—	—
RE02-17-135936	02-61440	4–5	ALLH	—	2017-2086	—	—	—	—
RE02-17-135937	02-61440	6–7	ALLH	—	2017-2086	—	—	—	—
RE02-17-135938	02-61440	8–9	ALLH	—	2017-2086	—	—	—	—
RE02-17-135939	02-61440	11–12	ALLH	—	2017-2086	—	—	—	—
RE02-17-135940	02-61440	14–15	ALLH	—	2017-2086	—	—	—	—
RE02-17-135941	02-61440	16–17	ALLH	—	2017-2086	—	—	—	—
RE02-17-135942	02-61440	19–20	ALLH	—	2017-2086	—	—	—	—
RE02-17-135943	02-61441	0–1	ALLH	—	2017-1983	—	—	—	—
RE02-17-141668	02-61441	0–1	ALLH	2017-1985	—	2017-1985	2017-1985	2017-1985	2017-1985
RE02-17-135944	02-61441	2–3	ALLH	—	2017-1983	—	—	—	—
RE02-17-141667	02-61441	2–3	ALLH	2017-1985	—	2017-1985	2017-1985	2017-1985	2017-1985
RE02-17-141654	02-61441	4–5	ALLH	2017-1985	—	2017-1985	2017-1985	2017-1985	2017-1985
RE02-17-135945	02-61441	4–5	ALLH	—	2017-1983	—	—	—	—
RE02-17-135946	02-61441	6–7	ALLH	—	2017-1983	—	—	—	—
RE02-17-141655	02-61441	6–7	ALLH	2017-1985	—	2017-1985	2017-1985	2017-1985	2017-1985
RE02-17-135947	02-61441	8–9	ALLH	—	2017-1983	—	—	—	—
RE02-17-135948	02-61441	11–12	ALLH	—	2017-1983	—	—	—	—
RE02-17-135949	02-61441	14–15	ALLH	—	2017-1983	—	—	—	—

Table 3.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-135950	02-61441	16–17	ALLH	—	2017-1983	—	—	—	—
RE02-17-135951	02-61441	19–20	ALLH	—	2017-1983	—	—	—	—
RE02-17-135952	02-61442	0–1	ALLH	—	2017-1998	—	—	—	—
RE02-17-141670	02-61442	0–1	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-135953	02-61442	2–3	ALLH	—	2017-1998	—	—	—	—
RE02-17-141669	02-61442	2–3	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-141656	02-61442	4–5	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-135954	02-61442	4–5	ALLH	—	2017-1998	—	—	—	—
RE02-17-135955	02-61442	6–7	ALLH	—	2017-1998	—	—	—	—
RE02-17-141657	02-61442	6–7	ALLH	2017-1999	—	2017-1999	2017-1999	2017-1999	2017-1999
RE02-17-135956	02-61442	8–9	ALLH	—	2017-1998	—	—	—	—
RE02-17-135957	02-61442	11–12	ALLH	—	2017-1998	—	—	—	—
RE02-17-135958	02-61442	14–15	ALLH	—	2017-1998	—	—	—	—
RE02-17-135959	02-61442	16–17	ALLH	—	2017-1998	—	—	—	—
RE02-17-135960	02-61442	19–20	ALLH	—	2017-1998	—	—	—	—
RE02-17-135961	02-61443	0–1	ALLH	—	2017-1984	—	—	—	—
RE02-17-135962	02-61443	2–3	ALLH	—	2017-1984	—	—	—	—
RE02-17-141678	02-61443	2–3	ALLH	2017-1981	—	2017-1981	2017-1981	2017-1981	2017-1981
RE02-17-141685	02-61443	4–5	ALLH	2017-1981	—	2017-1981	2017-1981	2017-1981	2017-1981
RE02-17-135963	02-61443	4–5	ALLH	—	2017-1984	—	—	—	—

Table 3.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-135964	02-61443	6–7	ALLH	—	2017-1984	—	—	—	—
RE02-17-135965	02-61443	8–9	ALLH	—	2017-1984	—	—	—	—
RE02-17-135966	02-61443	11–12	ALLH	—	2017-1984	—	—	—	—
RE02-17-135967	02-61443	14–15	ALLH	—	2017-1984	—	—	—	—
RE02-17-135968	02-61443	16–17	ALLH	—	2017-1998	—	—	—	—
RE02-17-135969	02-61443	19–20	ALLH	—	2017-1998	—	—	—	—
RE02-17-135998	02-61444	0–1	ALLH	—	2017-1931	—	—	—	—
RE02-17-141693	02-61444	0–1	ALLH	2017-1932	—	2017-1932	2017-1932	2017-1932	2017-1932
RE02-17-135999	02-61444	2–3	ALLH	—	2017-1931	—	—	—	—
RE02-17-141686	02-61444	2–3	ALLH	2017-1932	—	2017-1932	2017-1932	2017-1932	2017-1932
RE02-17-141672	02-61444	6–7	ALLH	2017-1932	—	2017-1932	2017-1932	2017-1932	2017-1932
RE02-17-136001	02-61444	6–7	ALLH	—	2017-1931	—	—	—	—
RE02-17-136002	02-61444	8–9	ALLH	—	2017-1931	—	—	—	—
RE02-17-136003	02-61444	11–12	ALLH	—	2017-1944	—	—	—	—
RE02-17-136004	02-61444	14–15	ALLH	—	2017-1944	—	—	—	—
RE02-17-136005	02-61444	16–17	ALLH	—	2017-1944	—	—	—	—
RE02-17-136006	02-61444	19–20	ALLH	—	2017-1944	—	—	—	—
RE02-17-136007	02-61445	0–1	ALLH	—	2017-1944	—	—	—	—
RE02-17-141673	02-61445	0–1	ALLH	2017-1945	—	2017-1945	2017-1945	2017-1945	2017-1945
RE02-17-136010	02-61445	6–7	ALLH	—	2017-1944	—	—	—	—

Table 3.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-141694	02-61445	6–7	ALLH	2017-1945	—	2017-1945	2017-1945	2017-1945	2017-1945
RE02-17-136011	02-61445	8–9	ALLH	—	2017-1944	—	—	—	—
RE02-17-136012	02-61445	11–12	ALLH	—	2017-1944	—	—	—	—
RE02-17-136015	02-61445	19–20	ALLH	—	2017-1970	—	—	—	—
RE02-17-141695	02-61446	0–1	ALLH	2017-1985	—	2017-1985	2017-1985	2017-1985	2017-1985
RE02-17-139388	02-61446	0–1	ALLH	—	2017-1982	—	—	—	—
RE02-17-139389	02-61446	2–3	ALLH	—	2017-1982	—	—	—	—
RE02-17-141688	02-61446	2–3	ALLH	2017-1985	—	2017-1985	2017-1985	2017-1985	2017-1985
RE02-17-141681	02-61446	4–5	ALLH	2017-1985	—	2017-1985	2017-1985	2017-1985	2017-1985
RE02-17-139390	02-61446	4–5	ALLH	—	2017-1982	—	—	—	—
RE02-17-139391	02-61446	6–7	ALLH	—	2017-1984	—	—	—	—
RE02-17-141674	02-61446	6–7	ALLH	2017-1981	—	2017-1981	2017-1981	2017-1981	2017-1981
RE02-17-139392	02-61446	8–9	ALLH	—	2017-1984	—	—	—	—
RE02-17-139393	02-61446	11–12	ALLH	—	2017-1984	—	—	—	—
RE02-17-139394	02-61446	14–15	ALLH	—	2017-1984	—	—	—	—
RE02-17-139395	02-61446	16–17	ALLH	—	2017-1984	—	—	—	—
RE02-17-139396	02-61446	19–20	ALLH	—	2017-1984	—	—	—	—
RE02-17-139397	02-61447	0–1	ALLH	—	2017-2020	—	—	—	—
RE02-17-141696	02-61447	0-1	ALLH	2017-2021	—	2017-2021	2017-2021	2017-2021	2017-2021
RE02-17-139398	02-61447	2–3	ALLH	—	2017-2020	—	—	—	—

Table 3.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-141689	02-61447	2–3	ALLH	2017-2021	—	2017-2021	2017-2021	2017-2021	2017-2021
RE02-17-139399	02-61447	4–5	ALLH	—	2017-2020	—	—	—	—
RE02-17-141682	02-61447	4-5	ALLH	2017-2021	—	2017-2021	2017-2021	2017-2021	2017-2021
RE02-17-139400	02-61447	6–7	ALLH	—	2017-2020	—	—	—	—
RE02-17-141675	02-61447	6-7	ALLH	2017-2021	—	2017-2021	2017-2021	2017-2021	2017-2021
RE02-17-139401	02-61447	8–9	ALLH	—	2017-2020	—	—	—	—
RE02-17-139402	02-61447	11–12	ALLH	—	2017-2037	—	—	—	—
RE02-17-139403	02-61447	14–15	ALLH	—	2017-2037	—	—	—	—
RE02-17-139404	02-61447	16–17	ALLH	—	2017-2037	—	—	—	—
RE02-17-139405	02-61447	19–20	ALLH	—	2017-2037	—	—	—	—
RE02-17-139406	02-61448	0–1	ALLH	—	2017-1982	—	—	—	—
RE02-17-141697	02-61448	0–1	ALLH	2017-1985	—	2017-1985	2017-1985	2017-1985	2017-1985
RE02-17-139408	02-61448	4–5	ALLH	—	2017-1982	—	—	—	—
RE02-17-141683	02-61448	4–5	ALLH	2017-1985	—	2017-1985	2017-1985	2017-1985	2017-1985
RE02-17-141676	02-61448	6–7	ALLH	2017-1985	—	2017-1985	2017-1985	2017-1985	2017-1985
RE02-17-139409	02-61448	6–7	ALLH	—	2017-1982	—	—	—	—
RE02-17-139410	02-61448	8–9	ALLH	—	2017-1982	—	—	—	—
RE02-17-139411	02-61448	11–12	ALLH	—	2017-1982	—	—	—	—
RE02-17-139412	02-61448	14–15	ALLH	—	2017-1982	—	—	—	—
RE02-17-139413	02-61448	16–17	ALLH	—	2017-1982	—	—	—	—

Table 3.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-139414	02-61448	19–20	ALLH	—	2017-1982	—	—	—	—
RE02-17-141558	02-61450	0–1	--	—	2017-2087	—	—	—	—
RE02-17-141559	02-61450	2–3	--	—	2017-2087	—	—	—	—
RE02-17-141560	02-61450	4–5	ALLH	—	2017-2087	—	—	—	—
RE02-17-141561	02-61450	6–7	ALLH	—	2017-2087	—	—	—	—
RE02-17-141562	02-61450	8–9	ALLH	—	2017-2087	—	—	—	—
RE02-17-141563	02-61450	11–12	ALLH	—	2017-2087	—	—	—	—
RE02-17-141564	02-61450	14–15	ALLH	—	2017-2087	—	—	—	—
RE02-17-141565	02-61450	16–17	ALLH	—	2017-2087	—	—	—	—
RE02-17-141566	02-61450	19–20	ALLH	—	2017-2087	—	—	—	—
RE02-17-141567	02-61451	0–1	ALLH	—	2017-2083	—	—	—	—
RE02-17-141568	02-61451	2–3	ALLH	—	2017-2083	—	—	—	—
RE02-17-141569	02-61451	4–5	ALLH	—	2017-2083	—	—	—	—
RE02-17-141570	02-61451	6–7	ALLH	—	2017-2083	—	—	—	—
RE02-17-141571	02-61451	8–9	ALLH	—	2017-2081	—	—	—	—
RE02-17-141572	02-61451	11–12	ALLH	—	2017-2081	—	—	—	—
RE02-17-141573	02-61451	14–15	ALLH	—	2017-2081	—	—	—	—
RE02-17-141574	02-61451	16–17	ALLH	—	2017-2087	—	—	—	—
RE02-17-141575	02-61451	19–20	ALLH	—	2017-2087	—	—	—	—
RE02-17-141576	02-61452	0–1	ALLH	2017-2035	2017-2037	2017-2035	2017-2035	2017-2035	2017-2035

Table 3.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-141577	02-61452	2–3	ALLH	—	2017-2081	—	—	—	—
RE02-17-141578	02-61452	4–5	ALLH	—	2017-2081	—	—	—	—
RE02-17-141579	02-61452	6–7	ALLH	—	2017-2081	—	—	—	—
RE02-17-141580	02-61452	8–9	ALLH	—	2017-2081	—	—	—	—
RE02-17-141581	02-61452	11–12	ALLH	—	2017-2081	—	—	—	—
RE02-17-141582	02-61452	14–15	ALLH	—	2017-2081	—	—	—	—
RE02-17-141583	02-61452	16–17	ALLH	—	2017-2081	—	—	—	—
RE02-17-141584	02-61452	19–20	ALLH	—	2017-2081	—	—	—	—
RE02-17-141585	02-61453	0–1	ALLH	—	2017-2020	—	—	—	—
RE02-17-141586	02-61453	2–3	ALLH	2017-2021	2017-2020	2017-2021	2017-2021	2017-2021	2017-2021
RE02-17-141587	02-61453	4–5	ALLH	2017-2021	2017-2020	2017-2021	2017-2021	2017-2021	2017-2021
RE02-17-141588	02-61453	6–7	ALLH	2017-2021	2017-2020	2017-2021	2017-2021	2017-2021	2017-2021
RE02-17-141692	02-61453	6-7	ALLH	2017-2021	—	2017-2021	2017-2021	2017-2021	2017-2021
RE02-17-141589	02-61453	8–9	ALLH	—	2017-2020	—	—	—	—
RE02-17-141593	02-61453	10–20	ALLH	—	2017-2020	—	—	—	—
RE02-17-141590	02-61453	11–12	ALLH	—	2017-2020	—	—	—	—
RE02-17-141592	02-61453	16–17	ALLH	—	2017-2020	—	—	—	—
RE02-17-141594	02-61454	0–1	ALLH	2017-2035	2017-2037	2017-2035	2017-2035	2017-2035	2017-2035
RE02-17-141595	02-61454	2–3	ALLH	2017-2035	2017-2037	2017-2035	2017-2035	2017-2035	2017-2035
RE02-17-141596	02-61454	4–5	ALLH	2017-2035	2017-2037	2017-2035	2017-2035	2017-2035	2017-2035

Table 3.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	PCBs	Gamma-Emitting Radionuclides	Isotopic Plutonium	Isotopic Uranium	Strontium-90
RE02-17-141597	02-61454	6–7	ALLH	2017-2035	2017-2037	2017-2035	2017-2035	2017-2035	2017-2035
RE02-17-141598	02-61454	8–9	ALLH	—	2017-2037	—	—	—	—
RE02-17-141599	02-61454	11–12	ALLH	—	2017-2037	—	—	—	—
RE02-17-141600	02-61454	14–15	ALLH	—	2017-2037	—	—	—	—
RE02-17-141601	02-61454	16–17	ALLH	—	2017-2081	—	—	—	—
RE02-17-136031	02-61454	16–17	ALLH	—	2017-2038	—	—	—	—
RE02-17-141602	02-61454	19–20	ALLH	—	2017-2037	—	—	—	—
RE02-17-141603	02-61455	0–1	ALLH	2017-2035	2017-2037	2017-2035	2017-2035	2017-2035	2017-2035
RE02-17-141604	02-61455	2–3	ALLH	2017-2035	2017-2037	2017-2035	2017-2035	2017-2035	2017-2035
RE02-17-141605	02-61455	4–5	ALLH	2017-2035	2017-2037	2017-2035	2017-2035	2017-2035	2017-2035
RE02-17-141606	02-61455	6–7	ALLH	2017-2035	2017-2037	2017-2035	2017-2035	2017-2035	2017-2035
RE02-17-141607	02-61455	8–9	ALLH	—	2017-2036	—	—	—	—
RE02-17-141608	02-61455	11–12	ALLH	—	2017-2036	—	—	—	—
RE02-17-141609	02-61455	14–15	ALLH	—	2017-2036	—	—	—	—
RE02-17-141610	02-61455	16–15	ALLH	—	2017-2036	—	—	—	—
RE02-17-141611	02-61455	19–20	ALLH	—	2017-2036	—	—	—	—

[a] — = Analysis not requested.

[b] Chain-of-custody number.

Table 3.5-1
Soil Samples Collected and Analyses Requested for FY2017 Ecotoxicology Testing

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	Mercury	Selenium
RE02-17-132742	02-600198	0–1	Soil	—[a]	2017-2190[b]	2017-2190
RE02-17-132762	02-600198	1–2	Soil	2017-2210	—	—
RE02-17-132782	02-600198	2–3	Soil	2017-2210	—	—
RE02-17-132743	02-600259	0–1	Soil	—	2017-2190	2017-2190
RE02-17-132763	02-600259	1–2	Soil	2017-2210	—	—
RE02-17-132783	02-600259	2–3	Soil	2017-2210	—	—
RE02-17-132744	02-600261	0–1	Soil	—	2017-2190	2017-2190
RE02-17-132764	02-600261	1–2	Soil	2017-2210	—	—
RE02-17-132784	02-600261	2–3	Soil	2017-2210	—	—
RE02-17-132745	02-600268	0–1	Soil	—	2017-2190	2017-2190
RE02-17-132765	02-600268	1–2	Soil	2017-2210	—	—
RE02-17-132785	02-600268	2–3	Soil	2017-2210	—	—
RE02-17-132746	02-600269	0–1	Soil	—	2017-2190	2017-2190
RE02-17-132766	02-600269	1–2	Soil	2017-2210	—	—
RE02-17-132786	02-600269	2–3	Soil	2017-2210	—	—
RE02-17-132747	02-600272	0–1	Soil	—	2017-2190	2017-2190
RE02-17-132767	02-600272	1–2	Soil	2017-2210	—	—
RE02-17-132787	02-600272	2–3	Soil	2017-2210	—	—
RE02-17-132748	02-600284	0–1	Soil	—	2017-2190	2017-2190
RE02-17-132768	02-600284	1–2	Soil	2017-2210	—	—
RE02-17-132788	02-600284	2–3	Soil	2017-2210	—	—
RE02-17-132749	02-600289	0–1	Soil	—	2017-2190	2017-2190
RE02-17-132769	02-600289	1–2	Soil	2017-2210	—	—
RE02-17-132789	02-600289	2–3	Soil	2017-2210	—	—
RE02-17-132750	02-600378	0–1	Soil	—	2017-2190	2017-2190
RE02-17-132770	02-600378	1–2	Soil	2017-2210	—	—
RE02-17-132790	02-600378	2–3	Soil	2017-2210	—	—
RE02-17-132751	02-600379	0–1	Soil	—	2017-2190	2017-2190
RE02-17-132771	02-600379	1–2	Soil	2017-2210	—	—
RE02-17-132791	02-600379	2–3	Soil	2017-2210	—	—

Table 3.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	Mercury	Selenium
RE02-17-132752	02-600455	0–1	Soil	—	2017-2190	2017-2190
RE02-17-132772	02-600455	1–2	Soil	2017-2210	—	—
RE02-17-132792	02-600455	2–3	Soil	2017-2210	—	—
RE02-17-132753	02-600457	0–1	Soil	—	2017-1918	2017-1918
RE02-17-132773	02-600457	1–2	Soil	2017-1918	—	—
RE02-17-132793	02-600457	2–3	Soil	2017-1918	—	—
RE02-17-132754	02-600459	0–1	Soil	—	2017-1918	2017-1918
RE02-17-132774	02-600459	1–2	Soil	2017-1918	—	—
RE02-17-132794	02-600459	2–3	Soil	2017-1918	—	—
RE02-17-132755	02-600465	0–1	Soil	—	2017-1933	2017-1933
RE02-17-132775	02-600465	1–2	Soil	2017-1933	—	—
RE02-17-132795	02-600465	2–3	Soil	2017-1933	—	—
RE02-17-132756	02-600475	0–1	Soil	—	2017-1918	2017-1918
RE02-17-132776	02-600475	1–2	Soil	2017-1918	—	—
RE02-17-132796	02-600475	2–3	Soil	2017-1918	—	—
RE02-17-132757	02-600488	0–1	Soil	—	2017-2190	2017-2190
RE02-17-132777	02-600488	1–2	Soil	2017-2210	—	—
RE02-17-132758	02-600533	0–1	Soil	—	2017-1918	2017-1918
RE02-17-132778	02-600533	1–2	Soil	2017-1918	—	—
RE02-17-132798	02-600533	2–3	Soil	2017-1918	—	—
RE02-17-132760	02-600554	0–1	Soil	—	2017-2190	2017-2190
RE02-17-132780	02-600554	1–2	Soil	2017-2210	—	—
RE02-17-132800	02-600554	2–3	Soil	2017-2210	—	—
RE02-17-132761	02-600581	0–1	Soil	—	2017-2190	2017-2190
RE02-17-132781	02-600581	1–2	Soil	2017-2210	—	—
RE02-17-132801	02-600581	2–3	Soil	2017-2210	—	—
RE02-17-136878	02-61456	0–1	Soil	—	2017-1933	2017-1933
RE02-17-132803	26-600777	0–1	Soil	—	—	2017-2079
RE02-17-132814	26-600777	1–2	Soil	2017-2079	—	—
RE02-17-132825	26-600777	2–3	Soil	2017-2079	—	—
RE02-17-132805	26-600786	0–1	Soil	—	—	2017-2079
RE02-17-132816	26-600786	1–2	Soil	2017-2079	—	—

Table 3.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	TAL Metals	Mercury	Selenium
RE02-17-132806	26-600787	0–1	Soil	—	—	2017-2079
RE02-17-132817	26-600787	1–2	Soil	2017-2079	—	—
RE02-17-132808	26-600924	0–1	Soil	—	—	2017-2079
RE02-17-132819	26-600924	1–2	Soil	2017-1933	—	—
RE02-17-132830	26-600924	2–3	Soil	2017-1933	—	—
RE02-17-132810	26-600928	0–1	Soil	—	—	2017-1933
RE02-17-132821	26-600928	1–2	Soil	2017-1933	—	—
RE02-17-132811	26-612294	0–1	Soil	—	—	2017-1933
RE02-17-132822	26-612294	1–2	Soil	2017-2348	—	—
RE02-17-132812	26-612295	0–1	Soil	—	—	2017-1933
RE02-17-132823	26-612295	1–2	Soil	2017-1933	—	—
RE02-17-136879	26-61231	0–1	Soil	—	—	2017-2348

[a] — = Analysis not requested.

[b] Chain-of-custody number.

Appendix A

Site Photographs of Fiscal Year 2017 Fieldwork Completed at Middle Los Alamos Canyon Aggregate Area

Figure A-1 Site conditions at Area of Concern (AOC) 02-011(d) sampling area

Figure A-2 Site conditions at Solid Waste Management Unit (SWMU) 02-005 sampling area

Figure A-3 Collecting surface samples with a hand auger at SWMU 02-005

Figure A-4 Site conditions at AOC 02-011(a)(ii) sampling are

Figure A-5 Collecting deep subsurface samples with a drill rig at AOC 02-011(a)(ii)

Figure A-6 **Ecotoxicology study soil sampling locations at Technical Area 26 (TA-26)**

Figure A-7 Sherman-live trap used for small-mammal trapping at TA-02

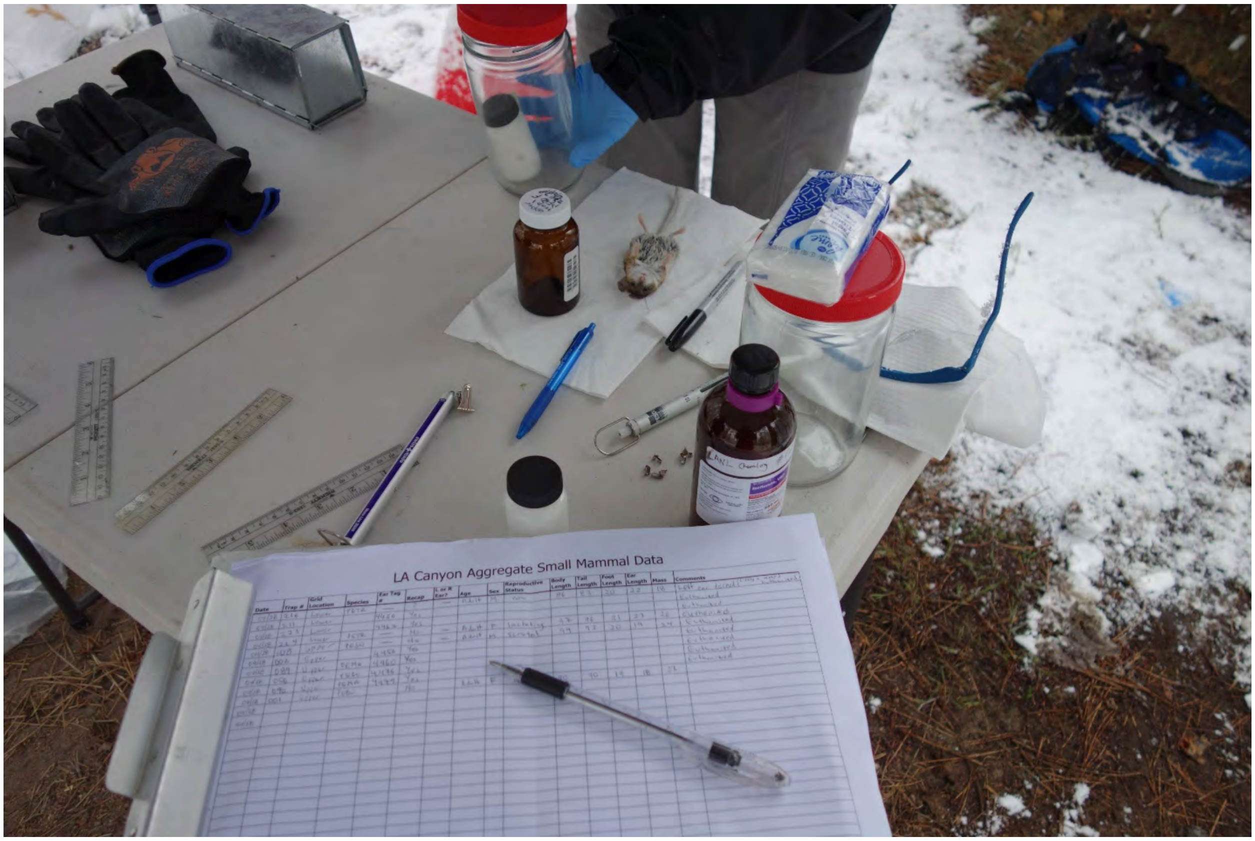

Figure A-8 Processing small-mammal specimen for ecotoxicology study at TA-02

Figure A-9 Shrew trap along Los Alamos Creek stream channel at TA-02

Figure A-10 Cavity-nesting bird nest box at TA-02

Figure A-11 Western bluebird (*Sialia Mexicana*)

Appendix B

All Analyses Tables for Area of Concern 02-011(d)
(on CD included with this document)