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Historical Investigation Report for Upper Water Canyon Aggregate Area



Prepared by the Environmental Programs Directorate

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EXECUTIVE SUMMARY

The Upper Water Canyon Aggregate Area includes Technical Area 11 (TA-11), TA-16, and TA-37 of Los Alamos National Laboratory and consists of 166 solid waste management units (SWMUs) and areas of concern (AOCs). Of these sites, 37 have been previously investigated and/or remediated and have been approved for no further action. For the remaining 129 sites, this historical investigation report provides site descriptions, summarizes previous investigations, and presents analytical results, if available. Of the 129 SWMUs and AOCs in the Upper Water Canyon Aggregate Area that require some additional characterization, 3 sites are located within TA-11 and 126 sites are located within TA-16. The sites include:

- a firing site;
- a dry well, a grease trap, septic tanks, sumps, drainlines, and outfalls;
- magazines;
- building footprints;
- landfill and surface disposal areas;
- underground storage tanks and aboveground tanks;
- transformers;
- oil switches;
- incinerators; and
- cooling towers.

The background information and previous investigations discussed within this report form the basis for the proposed sampling design to complete site investigations as presented in the Investigation Work Plan for Upper Water Canyon Aggregate Area.

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Appendixes

Appendix A	Acronyms and Abbreviations, Metric Conversion Table, and Data Qualifier Definitions
Appendix B	Analytical Suites and Results (on CD included with this document)

Plates

- Plate 1 SWMUs and AOCs under Investigation within Upper Water Canyon Aggregate Area
- Plate 2 Site features of SWMU 16-005(a)
- Plate 3
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1.0 INTRODUCTION

Los Alamos National Laboratory (LANL or the Laboratory) is a multidisciplinary research facility owned by the U.S. Department of Energy (DOE) and managed by Los Alamos National Security, LLC. The Laboratory is located in north-central New Mexico approximately 60 mi northeast of Albuquerque and 20 mi northwest of Santa Fe. The Laboratory site covers 40 mi² of the Pajarito Plateau, which consists of a series of finger-like mesas separated by deep canyons containing perennial and intermittent streams running from west to east. Mesa tops range in elevation from approximately 6200-7800 ft above mean sea level (amsl). The Upper Water Canyon Aggregate Area is shown in Figure 1.0-1.

The Laboratory's Environmental Programs (EP) Directorate, formerly the Environmental Restoration Project, is participating in a national effort by DOE to clean up sites and facilities formerly involved in weapons research and development. The goal of the EP Directorate is to ensure that past operations do not threaten human or environmental health and safety in and around Los Alamos County, New Mexico. To achieve this goal, the EP Directorate is currently investigating sites potentially contaminated by past Laboratory operations. The purpose of this historical investigation report (HIR) is to provide supporting information for the activities necessary to complete site investigations. The sites under investigation are designated as solid waste management units (SWMUs) and areas of concern (AOCs).

The SWMUs and AOCs (sites) addressed in this HIR are potentially contaminated with both hazardous and radioactive components. The New Mexico Environment Department (NMED), pursuant to the New Mexico Hazardous Waste Act, regulates cleanup of hazardous wastes and hazardous constituents. DOE regulates cleanup of radioactive contamination, pursuant to DOE Order 5400.5, Radiation Protection of the Public and the Environment, and DOE Order 435.1, Radioactive Waste Management. Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to NMED in accordance with DOE policy.

Corrective actions at the Laboratory are subject to the Compliance Order on Consent (the Consent Order). This HIR provides supporting information for the work plan activities that will be executed and completed in accordance with the Consent Order.

1.1 Report Overview

The Upper Water Canyon Aggregate Area consists of 166 SWMUs and AOCs located in Technical Area 11 (TA-11), TA-16, and TA-37. TA-28 and former TA-29 are located within the boundary of TA-16. The TA-28 and former TA-29 sites have been redesignated to TA-16. TA-37 contains one SWMU, which has been approved for no further action (NFA) and will not be investigated as part of this work plan.

For the 166 sites in the Upper Water Canyon Aggregate area, 37 have been previously investigated and/or remediated and have been approved for NFA; and 129 are addressed in the main text of this HIR. Of these 129 sites, 3 are located within TA-11 and 126 are located within TA-16.

Table 1.1-1 provides a summary of the 166 sites within the Upper Water Canyon Aggregate Area. For the 37 sites not addressed in the main text of this HIR, brief descriptions and summaries of their status are presented in Table 1.1-1. Plate 1 shows only the sites under investigation in the Upper Water Canyon Aggregate Area, monitoring wells, surface water and stormwater runoff monitoring stations, and canyon reaches.

Sections 2, 3, and 4 of this HIR provide site descriptions, summarize previous investigations, and present analytical results of the 129 sites addressed in this HIR.

1.2 Data Overview

Data evaluated in this HIR include historical data collected in 1995 through 1999, 2003, 2005, and 2007 as part of Resource Conservation and Recovery Act (RCRA) facility investigations (RFIs) and other investigations or corrective actions. All data presented in tables and on figures in this HIR are decision-level data. All decision-level data are included in Appendix B.

Decision-level data for inorganic chemicals and radionuclides from previous investigations are compared with background values (BVs) and fallout values (FVs) as applicable (LANL 1998, 059730). The data tables for inorganic chemicals include only decision-level data where sample concentrations are above the BVs or detected if no BVs are available. No radionuclides were detected or detected above BVs/FVs where analyses were conducted for radionuclides in the Upper Water Canyon Aggregate Area. Data tables for organic chemicals include all detected concentrations of organic chemicals.

2.0 SITES ASSOCIATED WITH TA-11

TA-11, known as K-Site, is the location of the Laboratory's material testing facilities. This TA is a remote site and can only be accessed through the high explosives (HE) area at TA-16. The facilities at TA-11 are arranged so that testing may be controlled and observed remotely. Components and assemblies undergo testing in various extreme physical environments, including vibration, shock, and thermal testing.

The Upper Water Canyon Aggregate Area contains three sites associated with TA-11 that are addressed in this HIR. These sites are no longer physically located within the current boundaries of TA-11. In 1989, when the Laboratory redefined its technical area boundaries, portions of TA-11 were absorbed into TA-16. As a result of this boundary change, these three TA-11 sites are now located inside the current boundaries of TA-16.

2.1 SWMU 11-001(c)—Firing Pit

SWMU 11-001(c) is a former firing pit located at TA-16, northwest of former building 16-370 near the edge of Water Canyon (Figure 2.1-1). According to the 1990 SWMU Report (LANL 1990, 007512), the firing pit was similar in construction to firing pit 11-0014, which was a 37 ft semicircular wall that was 12.5-ft high and 4.5-ft thick. The SWMU 11-001(c) firing pit was first used in 1944 (LANL 1993, 020948, pp. 5 271–5 282; LANL 1996, 055016, p. 1).

2.1.1 Previous Investigations for SWMU 11-001(c)

An RFI was conducted at SWMU 11-001(c) in September 1995. Asbestos, debris, wire, and at least one detonator were visually identified at the site during RFI field activities. Eight surface and subsurface samples were collected from four locations. The samples were field-screened for HE, organic vapors, and radioactivity. No explosives compounds or radioactivity were detected above instrument background. The samples were submitted for laboratory analysis of metals, total cyanide, HE, and semi-volatile organic compounds (SVOCs); however, not all samples were analyzed for all suites (LANL 1996, 055016, pp. 2–77). Sample results are presented in section 2.1.2.

A voluntary corrective action (VCA) was conducted at SWMU 11-001(c) in September 1996 to remove asbestos, firing site debris, and soil where elevated arsenic concentrations were found during the 1995 RFI. Six confirmation samples were collected from six locations. Confirmation samples were submitted for laboratory analyses of metals and total cyanide (LANL 1996, 062677, pp. 9–10). Sample results are presented in section 2.1.2.

The engineering drawing R-126 from the 1952 Structure Location Map (LASL 1952, 095136.28) was used to determine that the SWMU 11-001(c) designation is pointing to the wrong feature in the RFI work plan. The 1952 Structure Location Map shows the firing site nearly adjacent to the K-Site Road. Therefore, the 1995 RFI and the 1996 VCA were conducted at the wrong location and do not address the nature and extent of contamination for SWMU 11-001(c).

2.1.2 Analytical Results for SWMU 11-001(c)

Samples collected, analyses requested, and decision-level analytical data from the 1995 RFI and the 1996 VCA are presented in Tables 2.1-1–2.1-3. The samples were collected from depth intervals ranging from 0–3.5 ft below ground surface (bgs). The results of the analyses of samples collected during the 1995 RFI (LANL 1996, 055016, pp. 2–7) and the 1996 VCA are as follows (LANL 1996, 062677, pp. 9–10).

- Antimony, arsenic, barium, cadmium, cobalt, copper, lead, thallium, and uranium were detected above BVs (Figure 2.1-2).
- Benzoic acid and di-n-butylphthalate were detected (Figure 2.1-3).

2.2 AOC 11-012(a)—Potential Soil Contamination Associated with Former Magazine 11-7

AOC 11-012(a) is an area of potential soil contamination associated with a former HE storage magazine (structure 11-7) at TA-16 (Figure 2.2-1). The magazine was an 11-ft-long \times 9-ft-wide wood structure with earthen berms on three sides. The magazine was built in 1944 and destroyed by intentional burning in 1960 (LANL 1993, 020948, pp. 5 271–5 282).

2.2.1 Previous Investigations for AOC 11-012(a)

An RFI was conducted at AOC 11-012(a) in 1995. Four screening samples were collected from four locations and field screened for HE, organic vapors, and radioactivity. The sample with the highest reading for organic vapor was submitted for laboratory analyses of metals, total cyanide, HE, and SVOCs (LANL 1997, 062539, pp. 33–39).

2.2.2 Analytical Results for AOC 11-012(a)

The sample collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 2.2-1 and 2.2-2. One sample was collected from a depth interval of 1–1.5 ft bgs. The results of the analyses of the sample collected during the 1995 RFI are as follows (LANL 1997, 062539, pp. 33–39).

- No inorganic chemicals were detected or detected above BVs.
- No explosives compounds or SVOCs were detected.

2.3 AOC 11-012(b)—Potential Soil Contamination Associated with Former Magazine 11-8

AOC 11-012(b) is an area of potential soil contamination associated with a former HE storage magazine (structure 11-8) at TA-16 (Figure 2.2-1). The magazine was an 11-ft-long \times 9-ft-wide wood structure with earthen berms on three sides. The magazine was built in 1944 and destroyed by intentional burning in 1960 (LANL 1993, 020948, pp. 5-271–5-282).

2.3.1 Previous Investigations for AOC 11-012(b)

An RFI was conducted at AOC 11-012(b) in 1995. Samples were field screened for HE, organic vapors, and radioactivity. The sample with the highest reading for organic vapors was submitted for laboratory analyses of metals, total cyanide, HE, and SVOCs (LANL 1997, 062539, pp. 38–39). Sample results are presented in section 2.3.2.

2.3.2 Analytical Results for AOC 11-012(b)

Samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 2.3-1–2.3-3. The sample was collected from a depth interval of 0.5–1 ft bgs. The results of the analyses of the sample collected during the 1995 RFI are as follows (LANL 1997, 062539, pp. 38–39).

- No inorganic chemicals were detected or detected above BVs.
- SVOCs, benzoic acid, and di-n-butylphthalate were detected (Figure 2.3-1).
- Explosives compounds were not detected.

3.0 SITES ASSOCIATED WITH TA-16

TA-16, also known as S-Site, contains many of the Laboratory's HE facilities, the Laboratory's state-ofthe-art tritium facility, and several administrative support buildings. Activities involve fabricating and testing HE, plastics, and adhesives; conducting research in process development for manufacturing HE, plastics, adhesives, and other materials; repackaging tritium to user-specified pressures; chemical purification of tritium by removing contaminants; reclaiming tritium; mixing tritium with other gases; analyzing gas mixtures; and conducting applied research and development for boost systems. Recently, TA-16's main steam plant was closed and has been replaced by smaller local plants.

The Upper Water Canyon Aggregate Area contains 162 sites that are located in TA-16. Of these, 36 have been previously investigated and/or remediated and have been approved for NFA (Table 1.1-1). The remaining 126 sites are described below.

3.1 SWMU 16-001(d)—Dry Well

SWMU 16-001(d) is a dry well that served the former drum storage building 16-208 at TA-16 (Figure 3.1-1). The dry well is located east of the building, and is 3 ft in diameter × 5 ft deep (LASL 1959, 024177). The dry well was connected by a 4-in.-diameter drainpipe to two sumps located within the southeast end of the drum storage building. Concrete troughs in the floor drained to the two sumps and the sumps drained to the dry well. The outlet to the dry well was plugged prior to 1993 (LANL 1993, 020948, p. 5-5). Building 16-208 was removed in 2003 (LANL 2003, 073838, pp. 1–2), but the dry well and corresponding drainline were never found.

3.1.1 Previous Investigations for SWMU 16-001(d)

Four samples were collected from four locations within the footprint of former building 16-208. All four samples were collected from four locations and submitted for laboratory analyses of metals, SVOCs, total petroleum hydrocarbons-diesel-range organics (TPH-DRO), TPH-gasoline range organics (TPH-GRO), and volatile organic compounds (VOCs).

3.1.2 Analytical Results for SWMU 16-001(d)

The samples collected, analyses requested, and decision-level analytical data from the 2003 building demolition are presented in Tables 3.1-1–3.1-3. The samples were collected from depth intervals ranging from 0.5–1.5 ft bgs. The results of the analyses of samples collected during the 2003 building demolition are as follows.

- Aluminum and calcium were detected above BVs (Figure 3.1-2).
- Polycyclic aromatic hydrocarbons (PAHs), TPH-DRO, and dibenzofuran were detected (Figure 3.1-3).
- TPH-GRO and VOCs were not detected.

3.2 SWMU 16-003(a)—Sump and Outfall

SWMU 16-003(a) is an HE sump and outfall that served assembly building 16-410 at TA-16 (Figure 3.2-1). The concrete sump is located on the exterior southeast wall of the building and is 12-ft long x 4-ft wide x 5-ft high. The sump served floor, roof, and equipment drains and removed suspended HE solids from process water before it was discharged to the outfall, which is located approximately 320 ft southeast of the building. The sump was installed in the early 1950s and modified in 1966 to improve its effectiveness and to reduce HE handling (LANL 1993, 020948, pp. 1–2). The outfall was National Pollutant Discharge Elimination System- (NPDES) permitted (05A053) and was removed from the NPDES permit effective January 14, 1998 (EPA 1998, 109568).

3.2.1 Previous Investigations for SWMU 16-003(a)

An RFI was conducted at SWMU 16-003(a) in 1995. Ten samples were collected from seven locations in the outfall drainage and submitted for laboratory analyses of metals, total cyanide, HE, SVOCs, and VOCs; however not all samples were analyzed for all suites.

Best management practices (BMPs) were installed at SWMU 16-003(a) in July 2000. The site was seeded and mulched and straw wattles were installed to minimize potential contaminant migration from the site (LANL 2001, 070305, p. 8).

3.2.2 Analytical Results for SWMU 16-003(a)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.2-1–3.2-3. The samples were collected from depth intervals ranging from 0–6.5 ft bgs. The results of the analyses of samples collected during the 1995 RFI are as follows.

- Aluminum, arsenic, barium, cadmium, chromium, copper, lead, magnesium, uranium, and zinc were detected above BVs (Figure 3.2-2).
- PAHs, other SVOCs, and VOCs were detected (Figure 3.2-3).
- Explosives compounds were not detected.

3.3 SWMU 16-003(b)—Sump and Outfall

SWMU 16-003(b) is an HE sump and outfall associated with truck-washing building 16-400 at TA-16 (Figure 3.3-1). The concrete sump is located on the exterior southwest wall of the building and is

12-ft long x 4-ft wide x 5-ft high. The sump received water from washing trucks and equipment. The sump removed suspended HE solids from the wash water before it was discharged to the outfall, which is located approximately 120 ft southeast of the building. The sump was installed in the early 1950s and modified in 1966 to improve its effectiveness and to reduce HE handling. Effluent from the HE sump and a steam-pit drain flowed to a common drainline that discharged to the outfall (LANL 1993, 020948, pp. 5-20 to 5-21). The outfall was NPDES-permitted (05A063) and was removed from the LANL NPDES permit effective December 5, 1995. The sump is currently plugged (EPA 1995, 109543).

3.3.1 Previous Investigations for SWMU 16-003(b)

An RFI was conducted at SWMU 16-003(b) in 1995. Eleven samples were collected from seven locations and submitted for laboratory analyses of metals, total cyanide, HE, SVOCs, and VOCs; however, not all samples were analyzed for all suites.

BMPs were installed at SWMU 16-003(b) in July 2000. The site was seeded and mulched and then straw wattles were installed to minimize potential contaminant migration from the site (LANL 2001, 070305, p. 8).

3.3.2 Analytical Results for SWMU 16-003(b)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.3-1-3.3-3. The samples were collected from depth intervals ranging from 0-6.5 ft bgs. The results of the analyses of samples collected during the 1995 RFI are as follows.

- Aluminum, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, silver, uranium, vanadium, and zinc were detected above BVs (Figure 3.3-2).
- Explosives compounds, PAHs, other SVOCs, and VOCs were detected (Figure 3.3-3).

3.4 Consolidated Unit 16-003(c)-99

Consolidated Unit 16-003(c)-99 consists of an HE sump [SWMU 16-003(c)] and an outfall [SWMU 16-026(v)] that served a decommissioned analytical chemistry laboratory (building 16-460) (Figure 3.4-1). Building 16-460 was constructed in 1952 and is currently inactive.

3.4.1 SWMU 16-003(c)—Sump

SWMU 16-003(c) is an HE sump that served decommissioned analytical chemistry laboratory building 16-460 at TA-16 (Figure 3.4-1). The concrete sump is located at the exterior northwest corner of the building and is 7.5-ft long x 3.5-ft wide x 2.5-ft high. The sump handled fine grains of HE from analytical chemistry experiments. Historically, small quantities of solvents and other chemicals were discharged to the sump in addition to HE (LANL 1993, 020948, p. 5-32).

3.4.1.1 Previous Investigations for SWMU 16-003(c)

No previous investigation has been conducted at SWMU 16-003(c).

3.4.1.2 Analytical Results for SWMU 16-003(c)

No decision-level data are available at this site.

3.4.2 SWMU 16-026(v)—Outfall

SWMU 16-026(v) is an outfall that served decommissioned analytical chemistry laboratory building 16-460 at TA-16 (Figure 3.4-1). The outfall is located approximately 60 ft southeast of the building. The outfall was NPDES permitted (05A072) and received effluent from a sump [SWMU 16-003(c)], building floor drains, steam-cup drains, sink drains, and a drinking fountain. The outfall has been plugged and no longer receives effluent (LANL 1993, 020948, p. 5-32). It was removed from the NPDES permit effective September 19, 1997 (EPA 1997, 109528).

3.4.2.1 Previous Investigations for SWMU 16-026(v)

An RFI was conducted at SWMU 16-026(v) in 1995. Two locations were sampled near the outfall: one at the outfall and one at the next downstream sediment trap. In addition, 14 other downstream locations were sampled. All samples were field-screened for HE, organic vapors, and radioactivity. Ten samples from seven locations were submitted for laboratory analyses of metals, total cyanide, HE, SVOCs, and VOCs; however, not all samples were analyzed for all suites (LANL 1997, 062539, pp. 94–105).

BMPs were installed at SWMU 16-026(v) in July 2000. A straw-bale barrier was installed to minimize erosion at the site (LANL 2001, 070305, p. 8).

3.4.2.2 Analytical Results for SWMU 16-026(v)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.4-1–3.4-3. The samples were collected from depth intervals ranging from 0–4 ft bgs. The results of the analyses of samples collected during the 1995 RFI are as follows (LANL 1997, 062539, pp. 94–105).

- Aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, mercury, nickel, silver, uranium, vanadium, and zinc were detected above BVs (Figure 3.4-2).
- Explosives compounds, PAHs, other SVOCs, and VOCs were detected (Figure 3.4-3).

3.5 Consolidated Unit 16-003(I)-99

Consolidated Unit 16-003(I)-99 consists of SWMU 16-003(I), which is three HE sumps and associated outfalls, and SWMU 16-030(h), which is four building drain outfalls from the south side of HE pressing building 16-430 where plastic-bonded explosives and mock HE powders were pressed to shape (Figure 3.5-1).

3.5.1 SWMU 16-003(I)—Sumps and Outfalls

SWMU 16-003(I) consists of three HE sumps and three outfalls located on the exterior south side of the HE pressing building 16-430 at TA-16 (Figure 3.5-1). The three concrete sumps received effluent from five HE pressing bays that are each 9.5-ft long x 3.5-ft wide. Each sump discharged to its own outfall through a 6-in.-diameter steel drainpipe. All three sump outfalls are located approximately 60 ft south of the building (LANL 1993, 020948, p. 5-31). Discharge from each sump outfall converged to a common drainage, and the combined discharge was permitted under NPDES at outfall 05A071, which emptied into

Water Canyon. The outfall was removed from the NPDES permit effective March 10, 1998 (EPA 1998, 109792).

3.5.1.1 Previous Investigations for SWMU 16-003(I)

No previous investigation has been conducted at SWMU 16-003(I).

3.5.1.2 Analytical Results for SWMU 16-003(I)

No decision-level data are available at this site.

3.5.2 SWMU 16-030(h)—Outfalls

SWMU 16-030(h) consists of four outfalls that served the south side of HE pressing building 16-430 at TA-16 (Figure 3.5-1). Two of the four drainlines received effluent from the HE pressing and hallway/storage areas of the building. The two drainlines exit at the middle of the building's south side and discharged into the same drainage that received discharge from three sumps and their associated outfalls [SWMU 16-003(I)] (Santa Fe Engineering Ltd. 1992, 109806). This drainage discharged to a formerly NPDES-permitted outfall (05A071). Of the remaining two drainlines, one received hydraulic oil releases from the press and the other received steam condensate. These two drainlines exit the east end of the building's south side and daylight at the edge of Water Canyon. All four drainlines were plugged by 1995 (LANL 1998, 101808, p. 54).

The 1990 SWMU Report describes SWMU 16-030(h) as 10 outfalls originating from building drains located on the south side of the building (LANL 1990, 007512). The SWMU report miscounted the number of outfalls on the south side of the building. In actuality, there are eight outfalls at the south of the building. Three are the sump outfalls designated as part of SWMU 16-003(l) and one is the hydraulic press outfall designated as AOC 16-021(b). The hydraulic press outfall also received the one-time spill of hydraulic fluid (AOC C-16-071).

The RFI Work Plan identified SWMU 16-030(h) as three outfalls associated with three sumps [SWMU 16-003(l)] (LANL 1993, 020948, p. 5-31).

3.5.2.1 Previous Investigations for SWMU 16-030(h)

An RFI was conducted at SWMU 16-030(h) in 1995. Twenty-three samples were collected from 11 locations and submitted for laboratory analyses of metals, total cyanide, HE, SVOCs, and VOCs; however, not all samples were analyzed for all suites.

BMPs were installed at SWMU 16-030(h) in 2000 as part of the post-Cerro Grande fire recovery. The site was seeded and mulched and straw wattles were installed to minimize erosion (LANL 2000, 067370, pp. 28–30).

3.5.2.2 Analytical Results for SWMU 16-030(h)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.5-1–3.5-3. The samples were collected from depth intervals ranging from

0-10.5 ft bgs. The results of the analyses of samples collected during the 1995 RFI are as follows.

- Aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, total cyanide, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, vanadium, and zinc were detected above BVs (Figure 3.5-3).
- Explosive compounds, PAHs, other SVOCs, and VOCs were detected (Figure 3.5-4).

3.6 Consolidated Unit 16-003(m)-99

Consolidated Unit 16-003(m)-99 consists of an HE sump [SWMU 16-003(m)], a septic system [SWMU 16-006(d)], and an outfall [AOC 16-030(g)] that served building 16-380 (Figure 3.6-1). Building 16-380 was formerly used as an inspection site for raw HE powder brought to TA-16 and currently is used to store ammunition for LANL security forces.

3.6.1 SWMU 16-003(m)—Sump

SWMU 16-003(m) is a sump located near the southeast corner of the HE inspection building 16-380 at TA-16 (Figure 3.6-1). The concrete sump received wash-down water from cleaning activities (LANL 1993, 020948, pp. 5-32–5-40). The sump discharge line has have been plugged (LANL 1997, 062539, pp. 5-32–5-40).

3.6.1.1 Previous Investigations for SWMU 16-003(m)

No previous investigation has been conducted at SWMU 16-003(m).

3.6.1.2 Analytical Results for SWMU 16-003(m)

No decision-level data are available at this site.

3.6.2 SWMU 16-006(d)—Septic System

SWMU 16-006(d) is a septic system at TA-16 that serves building 16-380 (Figure 3.6-1). The septic system is located south of the building and consists of a 540-gal. concrete septic tank, drainlines, a distribution box, and a tile drain field. The septic system was constructed in 1952 and is active. Five floor drains, two bathrooms, and one sink discharge to the septic tank (LANL 1993, 020948, pp. 5-100–5-102).

3.6.2.1 Previous Investigations for SWMU 16-006(d)

An RFI was conducted at SWMU 16-006(d) in 1995. Six samples were collected from three locations and were field screened for metals, HE, organic vapors, and radioactivity. Samples were then submitted for laboratory analyses of metals, total cyanide, HE, SVOCs, VOCs, and gamma-emitting radionuclides (LANL 1997, 062539, pp. 54–61).

3.6.2.2 Analytical Results for SWMU 16-006(d)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.6-1–3.6-3. The samples were collected from depth intervals ranging from 2–7 ft bgs. The results of the analyses of samples collected during the 1995 RFI are as follows (LANL 1997, 062539, pp. 54–61).

- Chromium was detected above BVs (Figure 3.6-2).
- PAHs and diethylphthalate were detected (Figure 3.6-3).
- No radionuclides were detected or detected above BVs/FVs.

3.6.3 AOC 16-030(g)—Outfall

AOC 16-030(g) is an outfall located south of building 16-380 at TA-16 (Figure 3.6-1). The outfall received effluent from a sump [SWMU 16-003(m)], two roof drains, a steam-heating system, and a drop inlet from a parking lot (LANL 1993, 020948, p. 5 32). The outfall was NPDES-permitted (05A052) and discharged to Water Canyon. It was removed from the NPDES permit in 1993 (LANL 1993, 109580). The sump and the steam-heating system discharge lines have been plugged, and the outfall currently receives only roof-drain and parking lot runoff (LANL 1997, 062539, p. 118).

3.6.3.1 Previous Investigations for AOC 16-030(g)

RFIs were conducted at AOC 16-030(g) in 1995 and 1997. Two locations were sampled: one at the outfall and one at the next downstream sediment trap. Additional samples were collected and field screened for HE at 10-ft intervals downgradient of the outfall. At the first negative HE screening location, samples were collected at 20-ft intervals. A total of seven locations were sampled. All 12 samples were field screened for HE, organic vapors, and radioactivity, and submitted for laboratory analyses of metals, total cyanide, HE, SVOCs, and VOCs; however, not all samples were analyzed for all suites (LANL 1997, 062539, pp. 117–127).

BMPs were installed at AOC 16-030(g) in October 1998. A straw-bale barrier and silt fencing were installed as erosion controls (LANL 1999, 063172, p. 3).

3.6.3.2 Analytical Results for AOC 16-030(g)

The samples collected, analyses requested, and decision-level analytical data from the 1995 and 1997 RFI are presented in Tables 3.6-4–3.6-6. The samples were collected from depth intervals ranging from 0–12.5 ft bgs. The results of the analyses of samples collected during the 1995 and 1997 RFI are as follows (LANL 1997, 062539, pp. 117–127).

- Barium, chromium, copper, lead, vanadium, and zinc were detected above BVs (Figure 3.6-2).
- Explosive compounds, PAHs, other SVOCs, and VOCs were detected (Figure 3.6-3).

3.7 AOC 16-003(q)—Sump

AOC 16-003(q) is a duplicate of SWMU 16-029(g) (see section3.53.3), a sump located at TA-16 that served the materials testing building 16-450 (see Figure 3.53-1). In the 1990 SWMU report, two numbers were assigned to the single HE sump that served building 16-450 (LANL 1990, 007512). The sump is included on the active HE sump list as AOC 16-003(q) and also on the inactive HE sump list as

SWMU 16-029(g). A 1959 engineering drawing verifies that only one sump is located at the building (LASL 1959, 024191).

3.7.1 Previous Investigations for AOC 16-003(q)

Not applicable.

3.7.2 Analytical Results for AOC 16-003(q)

Not applicable.

3.8 SWMU 16-005(a)—Former Septic System

SWMU 16-005(a) is a former septic system located at TA-16 approximately 510 ft southwest of building 16-460 (Plate 2). The septic system consisted of a septic tank (structure 16-161), drainlines, and a drain field. The exact location of the drain field is unknown. The septic system served former buildings: 16-01 (an office building), 16-02 (an office building), 16-07 (a steam plant and machine shop), 16-10 (a storage building), 16-22 (an office building), and 16-525 (a change house and laundry), and existing building 16-16 (formerly a cafeteria, currently an office building) (LANL 1994, 039440, p. 5-439).

The septic system operated from 1945–1952 and was removed in 1967, and the drainline was plugged near the connection at a manhole (structure 16-776). All lines running into manhole 16-776 are connected to the TA-16 Wastewater Treatment Plant (WWTP) (LANL 1994, 039440, p. 5-439).

3.8.1 Previous Investigations for SWMU 16-005(a)

No previous investigation has been conducted at this site.

3.8.2 Analytical Results for SWMU 16-005(a)

No decision-level data are available at this site.

3.9 SWMU 16-005(h)—Former Septic System

SWMU 16-005(h) is a former septic tank (structure 16-431) and associated outlet drainline that served HE processing building 16-430 at TA-16 (Figure 3.5-1). The septic tank was located approximately 200 ft southwest of building 16-430 and the outlet drainline discharged south of the septic tank. The tank was installed in 1951 and was used for only a brief period. In 1952, construction of a sanitary sewer system for TA-16 was completed and building 16-430 was connected to the TA-16 WWTP. The sanitary sewer was connected at a manhole (structure 16-763). All lines running into manhole 16-763 are connected to the TA-16 WWTP. The septic tank was removed in 1968 (LANL 1994, 039440, p. 5-442). It is not known if the inlet drainline to the septic tank was plugged.

3.9.1 Previous Investigations for SWMU 16-005(h)

No previous investigation has been conducted at this site.

3.9.2 Analytical Results for SWMU 16-005(h)

No decision-level data are available at this site.

3.10 SWMU 16-005(k)—Former Septic System

SWMU 16-005(k) is a former septic system that was located at TA-16 near building 16-969 (Figure 3.10-1). The septic system consisted of a septic tank (structure 16-1132), drainline, and a drain field. The septic tank served the former administration building 16-01 and a former steam plant/machine shop building 16-07. Sewer lines from buildings 16-01 and 16-07 joined at a manhole (structure 16-784), flowed to the septic tank, and then discharged to a drain field 20 ft to the west. The drainline to the septic tank was later connected to the sanitary sewer system at manhole 16-784. The drain field currently lies beneath building 16-969. The septic tank was installed in January 1944, decommissioned in 1945, and removed in 1956 (LANL 1994, 039440, pp. 5-440–5-442). In 2003, an asphalt entry road for the TA-16 Weapons Plant Support building, 16-969, was constructed over SWMU 16-005(k) (McInroy 2003, 079571, p. 1).

3.10.1 Previous Investigations for SWMU 16-005(k)

No previous investigation has been conducted at this site.

3.10.2 Analytical Results for SWMU 16-005(k)

No decision-level data are available at this site.

3.11 SWMU 16-005(I)—Former Grease Trap

SWMU 16-005(I) is a former grease trap (structure 16-1135) that served former building 16-525 (Figure 3.11-1). The grease trap was located approximately 98 ft southeast of building 16-525. The cylindrical grease trap was 6.5 ft in diameter × 5.5-ft deep, and constructed of concrete with a steel cover. The grease trap was partially buried 4 ft into the ground and the top protruded approximately 1 ft above the ground surface. Building 16-525 was a women's change house with laundry facilities that was built in 1951. Wastewater from the showers, sinks, laundry room, floor drains, and roof drains discharged to the grease trap. The grease trap discharged to an outfall ditch through 4-in.-diameter vitrified-clay pipe (VCP) that was buried approximately 3 ft bgs. The grease trap was removed at an unknown date (LANL 1994, 039440, pp. 5-439–5-445).

3.11.1 Previous Investigations for SWMU 16-005(I)

No previous investigation has been conducted at this site.

3.11.2 Analytical Results for SWMU 16-005(I)

No decision-level data are available at this site.

3.12 Consolidated Unit 16-006(c)-00

Consolidated unit 16-006(c)-00 consists of a septic tank [SWMU 16-006(c)] and two outfalls [SWMU 16-026(a)] that served former building 16-370 (Figure 3.12-1). Building 16-370 was built in 1953 and was used to house barium nitrate and metal-forming operations. The building was removed in 2005.

3.12.1 SWMU 16-006(c)—Septic System

SWMU 16-006(c) is a septic system located at TA-16, just west of former building 16-370. The septic system served building 16-370 and consisted of a 1200-gal. concrete septic tank (structure 16-371) and outfall drainline (Figure 3.12-1). The 1990 SWMU Report states that the septic tank discharged to a drain field. However, engineering drawings do not verify the existence of a drain field. The tank was constructed in 1953 and served floor drains and bathrooms on the third floor of building 16-370. Associated drainlines connect to a manhole (structure 16-813), which drained to the septic tank. The outlet line drained to an outfall approximately 260 ft south of the septic tank. The outfall discharged at the edge of Water Canyon (LANL 1993, 020948, pp. 5-99–5-102). After the drainline was plugged, the tank was pumped regularly during the time building 16-370 remained operational (LANL 1997, 062539, p. 44).

3.12.1.1 Previous Investigations for SWMU 16-006(c)

An RFI was conducted at SWMU 16-006(c) in 1995 and 1996. Eight samples were collected from five locations in 1995. Samples were field-screened for HE, organic vapors, and radioactivity and then submitted for laboratory analyses of metals, total cyanide, SVOCs, VOCs, and gamma-emitting radionuclides; however, not all samples were analyzed for all suites (LANL 1997, 062539, pp. 44–54).

One supplemental soil sample was collected in September 1996 because the 1995 data did not bound the downgradient extent of contamination from the outfall. This sample had the highest field-screening result for barium using x-ray fluorescence (XRF) and was submitted for laboratory analyses of metals, total cyanide, HE, SVOCs, and VOCs.

BMPs were installed at SWMU 16-006(c) in January 1990. An earthen berm was installed to divert run-on below SWMU 16-006(c) (LANL 2001, 070305, p. 8).

3.12.1.2 Analytical Results for SWMU 16-006(c)

The samples collected, analyses requested, and decision-level analytical data from the 1995 and 1996 RFI are presented in Tables 3.12-1–3.12-3. The samples were collected from depth intervals ranging from 0–6 ft bgs. The results of the analyses of samples collected during the 1995 and 1996 RFI are as follows (LANL 1997, 062539, pp. 44–54).

- Aluminum, barium, calcium, chromium, cobalt, copper, iron, lead, mercury, nickel, thallium, vanadium, and zinc were detected above BVs (Figure 3.12-2).
- PAHs, other SVOCs, and VOCs were detected (Figure 3.12-3).
- Explosives compounds were not detected.
- No radionuclides were detected or detected above BVs/FVs.

3.12.2 SWMU 16-026(a)—Outfalls

SWMU 16-026(a) consists of two outfalls from former building 16-370 located at TA-16 (Figure 3.12-1). The east outfall received discharge from a roof drain on the east side of building 16-370. The east outfall consists of a 6-in.-diameter cast-iron pipe that daylights 29 ft southeast of the building. The south outfall received discharge from a steam-pit condensate drain on the south side of building 16-370. The steam-pit drain is a 4-in.-diameter cast-iron pipe that daylights 70 ft south of the building. Effluent from both outfalls drains into Water Canyon (LANL 1995, 057225, pp. 6-6–6-7).

3.12.2.1 Previous Investigations for SWMU 16-026(a)

No previous investigation has been conducted at SWMU 16-026(a).

3.12.2.2 Analytical Results for SWMU 16-026(a)

No decision-level data are available at this site.

3.13 SWMU 16-015(a)—Former Building 16-15

SWMU 16-015(a) is former building 16-15, a men's locker room and laundry facility located at TA-16 (Figure 3.13-1). Building 16-15 was located in the southern part of the TA-16 administration area. The building was built in 1945 of wood-frame construction and was removed in April 1956. A washer in the building's equipment room discharged to a sump that led to a 6-in.-diameter cast-iron drainline (LANL 1994, 039440, p. 5-423).

3.13.1 Previous Investigations for SWMU 16-015(a)

No previous investigation has been conducted at this site.

3.13.2 Analytical Results for SWMU 16-015(a)

No decision-level data are available at this site.

3.14 SWMU 16-015(b)—Former Building 16-18

SWMU 16-015(b) is former steam-washing building 16-18 located at TA-16 (Figure 3.14-1). Building 16-18 was located in the southern part of the TA-16 administration area. The building was built in 1945 of wood-frame construction with a concrete foundation. The building was originally used to steam-clean machinery and was later used to store containers of motor oil. A drainline from the north side of the building discharged to a sump, and from there the drainline extended east for 188 ft and discharged to a relatively flat area. The building was destroyed by intentional burning in 1960. The drainline was removed in July 1966 (LANL 1994, 039440, pp. 5-424–5-426). In 2003, an unpaved access roadway (consisting of base course) was constructed over the surface of SWMU 16-015(b) for a fueling station (Salgado 2003, 079624).

3.14.1 Previous Investigations for SWMU 16-015(b)

Samples were collected at SWMU 16-015(b) in 2005. Eight samples were collected from four locations and submitted for laboratory analyses of target analyte list (TAL) metals, HE, SVOCs, TPH-DRO, TPH-GRO, and VOCs. Sample results are presented in section 3.14.2.

3.14.2 Analytical Results for SWMU 16-015(b)

Decision-level analytical data collected in 2005 are presented in Tables 3.14-1–3.14-3. The samples were collected from depth intervals ranging from 2–6 ft bgs. The results of the analyses of samples collected in 2005 are as follows.

- Barium, cobalt, and lead were detected above BVs (Figure 3.14-2).
- Explosives compounds, SVOCs, TPH-DRO, and VOCs were detected (Figure 3.14-3).
- TPH-GRO were not detected.

3.15 SWMU 16-016(a)—Landfill

SWMU 16-016(a) is a historical landfill located northeast of a former bunker (structure 16-76) at TA-16 (Figure 3.15-1). A 1965 memorandum documented that an unspecified amount of metal had been buried at SWMU 16-016(a) during World War II (LANL 1993, 020948, pp. 5-200–5-202). The debris was located in 1965 using a magnetometer, excavated, and removed to Material Disposal Area (MDA) P (LANL 1990, 007511, p. 16-016).

3.15.1 Previous Investigations for SWMU 16-016(a)

No previous investigation has been conducted at this site.

3.15.2 Analytical Results for SWMU 16-016(a)

No decision-level data are available at this site.

3.16 SWMU 16-016(e)—Surface Disposal Area

SWMU 16-016(e) is a small surface disposal area located approximately 150 ft southeast of building 16-360 at TA-16 (Figure 3.16-1). Debris includes firebricks, fiberglass, and ash (LANL 1995, 057225, pp. 6-4–6-6).

3.16.1 Previous Investigations for SWMU 16-016(e)

A white fibrous mass was observed at the site and the 1990 SWMU Report indicated the white fibrous mass could be asbestos (LANL 1990, 007512, p. 16-016). In 1994, an HE spot test was conducted on the debris and found no HE contamination (Watanabe 1994, 052964.653, p. 1309). Field observation indicated the remnant was construction debris and not of a hazardous nature. The white fibrous mass was analyzed by x-ray diffraction and identified as fiberglass insulation, not asbestos. The mass was removed and disposed of (LANL 1995, 057225, p. 6-6).

3.16.2 Analytical Results for SWMU 16-016(e)

No decision-level data are available at this site.

3.17 AOC 16-016(f)—Surface Disposal Area

AOC 16-016(f) is a former surface disposal area located at TA-16 on a hillside southeast of building 16-360 (Figure 3.16-1). Debris included a small amount of friable asbestos, black cellular foam glass

(used as roof insulation), rusted cans, and broken drainage tile. The asbestos and debris were removed during a VCA conducted in 1995 (LANL 1995, 057225, p. 6-47).

3.17.1 Previous Investigations for AOC 16-016(f)

A VCA was conducted at this AOC from June to August 1995. The VCA included sampling the asbestos and removing it with the surrounding soil in a radius of 3 ft and to a depth of 1 ft. Three samples of the visible friable asbestos were collected and sampled on February 17, 1995, by a team from the LANL Asbestos Abatement Program. The results of this analysis indicated that two of the samples were amosite and chrysotile—two kinds of asbestos. The third sample was a piece of fiberglass (LANL 1996, 053776, pp. 1–2).

Approximately two 55-gal. barrels of asbestos and soil were generated and disposed of by LANL's Asbestos Abatement Program. After the asbestos and surrounding soil were removed, the remaining debris, consisting of foam glass and construction waste, was removed. The nonasbestos debris was disposed of at the Los Alamos County Landfill. The total amount of debris was 35 yd³. Confirmation samples were not collected. The site was regraded to minimize the effect of erosion, but was not reseeded because it is bare tuff (LANL 1996, 053776, pp. 1–2).

3.17.2 Analytical Results for AOC 16-016(f)

No decision-level data are available at this site.

3.18 SWMU 16-016(g)—Surface Disposal Area

SWMU 16-016(g) is a surface disposal area at TA-16 associated with former building 16-370 (Figure 3.12-1). Debris includes cans and pipes that were distributed over a 20 ft diameter area and located in a drainage ditch approximately 60 ft south of the building (LANL 1995, 057225, p. 6-6).

3.18.1 Previous Investigations for SWMU 16-016(g)

The surface disposal area lies in the drainage ditch shared by both SWMUs 16-026(a) and 16-028(b). Field observations indicated that the remnant was construction debris and not of a hazardous nature. In 1994, an HE spot test was conducted on the debris and found no HE contamination (LANL 1995, 057225, p. 6-6).

3.18.2 Analytical Results for SWMU 16-016(g)

No decision-level data are available at this site.

3.19 SWMU 16-017(j)-99—Former Magazine 16-63

SWMU 16-017(j)-99 is a former magazine (structure 16-63) at TA-16 (Figure 3.19-1). The magazine was a 24 ft \times 26 ft \times 9 ft wood-framed structure surrounded by an earthen berm on three sides and the top. The magazine was built in 1945 and removed in 1998 (LANL 1998, 059502). This SWMU was originally designated as part of SWMU 16-017, a group of 24 structures in central TA-16 (LANL 1994, 039440, pp. 6-31–6-33). In 1999, SWMU 16-017 was separated into 24 SWMUs, each consisting of a single structure.
3.19.1 Previous Investigations for SWMU 16-017(j)-99

No previous investigation has been conducted at this site.

3.19.2 Analytical Results for SWMU 16-017(j)-99

No decision-level data are available at this site.

3.20 SWMU 16-017(k)-99—Former Magazine 16-78

SWMU 16-017(k)-99 is a former magazine (structure 16-78) at TA-16 (Figure 3.20-1). The magazine was a 24 ft \times 12 ft \times 7 ft reinforced concrete structure surrounded by an earthen berm on three sides and the top. The magazine was built in 1945 and removed in 1996. This SWMU was originally designated as part of SWMU 16-017, a group of 24 structures in central TA-16 (LANL 1994, 039440, pp. 6-31–6-33). In 1999, SWMU 16-017 was separated into 24 SWMUs, each consisting of a single structure.

3.20.1 Previous Investigations for SWMU 16-017(k)-99

No previous investigation has been conducted at this site.

3.20.2 Analytical Results for SWMU 16-017(k)-99

No decision-level data are available at this site.

3.21 SWMU 16-017(I)-99—Former Magazine 16-77

SWMU 16-017(I)-99 is a former magazine (structure 16-77) at TA-16 (Figure 3.21-1). The magazine was a 24 ft \times 12 ft \times 7 ft reinforced concrete structure surrounded by an earthen berm on three sides and the top. The magazine was built in 1945 and removed in 1996. This SWMU was originally designated as part of SWMU 16-017, a group of 24 structures in central TA-16 (LANL 1994, 039440, pp. 6-31–6-33). In 1999, SWMU 16-017 was separated into 24 SWMUs, each consisting of a single structure.

3.21.1 Previous Investigations for SWMU 16-017(I)-99

No previous investigation has been conducted at this site.

3.21.2 Analytical Results for SWMU 16-017(I)-99

No decision-level data are available at this site.

3.22 SWMU 16-017(m)-99—Former Magazine 16-76

SWMU 16-017(m)-99 is a former magazine (structure 16-76) at TA-16 (Figure 3.22-1). The magazine was a 24 ft \times 12 ft \times 7 ft reinforced concrete structure surrounded by an earthen berm on three sides and the top. The magazine was built in 1945 and removed in 1996. This SWMU was originally designated as part of SWMU 16-017, a group of 24 structures in central TA-16 (LANL 1994, 039440, pp. 6-31–6-33). In 1999 SWMU 16-017 was separated into 24 SWMUs, each consisting of a single structure.

3.22.1 Previous Investigations for SWMU 16-017(m)-99

No previous investigation has been conducted at this site.

3.22.2 Analytical Results for SWMU 16-017(m)-99

No decision-level data are available at this site.

3.23 SWMU 16-017(n)-99—Former Magazine 16-75

SWMU 16-017(n)-99 is a former magazine (structure 16-75) at TA-16 (Figure 3.23-1). The magazine was a 24 ft \times 12 ft \times 7 ft reinforced concrete structure surrounded by an earthen berm on three sides and the top. The magazine was built in 1945 and removed in 1996. This SWMU was originally designated as part of SWMU 16-017, a group of 24 structures in central TA-16 (LANL 1994, 039440, pp. 6-31–6-33). In 1999 SWMU 16-017 was separated into 24 SWMUs, each consisting of a single structure.

3.23.1 Previous Investigations for SWMU 16-017(n)-99

No previous investigation has been conducted at this site.

3.23.2 Analytical Results for SWMU 16-017(n)-99

No decision-level data are available at this site.

3.24 SWMU 16-017(o)-99—Former Magazine 16-59

SWMU 16-017(o)-99 is a former magazine (structure 16-59) at TA-16 (Figure 3.24-1). The magazine was a 60 ft × 20 ft × 8.5 ft wood-framed structure surrounded by an earthen berm on three sides. The magazine was built in 1945 and removed in 1996. This SWMU was originally designated as part of SWMU 16-017, a group of 24 structures in central TA-16 (LANL 1994, 039440, pp. 6-31–6-33). In 1999 SWMU 16-017 was separated into 24 SWMUs, each consisting of a single structure.

3.24.1 Previous Investigations for SWMU 16-017(o)-99

No previous investigation has been conducted at this site.

3.24.2 Analytical Results for SWMU 16-017(o)-99

No decision-level data are available at this site.

3.25 AOC 16-021(b)—Decommissioned Hydraulic Press and Associated Drain

AOC 16-021(b) is a decommissioned hydraulic press and an associated drain that is located in bay 1 of building 16-430 at TA-16 (Figure 3.5-1). The hydraulic press is located in an equipment pit and is known to have leaked hydraulic fluid (LANL 1990, 007512). A french drain installed around the equipment pit discharged through a drainline south of the building to the same drainage as SWMU 16-030(h). The drain was permanently plugged by 1995 (LANL 1998, 101808, p. 46) and the hydraulic press was decommissioned in 2007.

3.25.1 Previous Investigations for AOC 16-021(b)

No previous investigation has been conducted at this site.

3.25.2 Analytical Results for AOC 16-021(b)

No decision-level data are available at this site.

3.26 AOC 16-022(a)—Underground Storage Tank (removed)

AOC 16-022(a) is a former underground storage tank (UST) at TA-16, located near the northwest corner of the tritium-processing building 16-205 (Figure 3.26-1). The steel tank measured 6 ft in length × 4 ft in diameter, had a capacity of 560 gal., and stored diesel fuel. It was installed in 1984 and removed in September 1993 (LANL 1995, 057225, pp. 6-35–6-37) under the direction of the NMED UST Bureau in compliance with the UST regulation in effect at the time.

3.26.1 Previous Investigations for AOC 16-022(a)

When the UST was removed on September 22, 1993, no visual evidence of soil contamination was observed beneath the UST; however, a faint odor of diesel fuel was noticed in the soil. Because the UST itself showed no evidence of leaks and passed a tightness test, the odor was assumed to come from past surface spills that occurred when refilling the UST (LANL 1993, 033313). Three samples were collected from the excavation on September 22, 1993. An additional five samples were collected from the excavation on October 14, 1993 (LANL 1995, 057225, pp. 6-35–6-37).

Samples were analyzed for TPH at an on-site laboratory. The results showed elevated concentrations of TPH. The nearest utility corridor is approximately 20 ft away from the UST; however, diesel fuel and potentially explosive vapors have not been detected in this corridor or in the vicinity of this UST removal (LANL 1993, 033313). It was determined that the extent of contamination was 12 ft laterally and 20 ft vertically (LANL 1992, 042497). Both the lateral and vertical extents of TPH contamination have been defined and the site does not pose an immediate public health or environmental threat (NMED 1994, 043565).

The site was resampled on August 3, 1994. One sampling location was centered on the excavated and backfilled location. The samples collected at depths of 10, 15, 20, and 25 ft were analyzed for TPH at an on-site laboratory. The results did not show any TPH concentrations greater than 100 μ g/g; TPH was not detected in the deepest sample (LANL 1994, 042497).

3.26.2 Analytical Results for AOC 16-022(a)

No decision-level data are available at this site.

3.27 AOC 16-022(b)—Underground Storage Tank (removed)

AOC 16-022(b) is a former UST that was located at TA-16, southeast of the former service station (building 16-195) (Figure 3.27-1). The tank (structure 16-197) had a 4000 gal. capacity and was used to store unleaded gasoline. UST 16-197 was installed in 1952 and placed directly adjacent to a second UST (structure 16-196) [AOC 16-033(b)], that stored leaded gasoline. When UST 16–196 was removed in 1987, it was found to have leaked, contaminating the soil surrounding UST 16-197. Contaminated soil was removed from the area surrounding UST 16-197, but the excavation had to be discontinued when

soil removal threatened the integrity of UST 16-197. When UST 16-197 was removed in 1990, the tank was found to be in good shape and not leaking. However, contaminated scale and soil associated with the releases from UST 16-196 were dislodged from the bottom of the tank. The contaminated soil was removed immediately and remediated under the direction of the NMED UST Bureau in compliance with the UST regulations in effect at the time.

After UST 16-197 was removed, a 10,000-gal. tank (structure 16-1465) was installed at the same location of removed USTs 16-196 and 16-197 (LANL 1995, 057225, pp. 6-39–6-41). During UST 16-1465 tank maintenance activities in 1994, gasoline-contaminated soil associated with UST 16-1465 was found at the location of former USTs 16-196 and 16-197. The contaminated area was remediated under the direction of the NMED UST Bureau in compliance with UST regulations. In 2003, UST 16-1465 was removed under the direction of the NMED UST Bureau (Dye 2003, 095409, pp. 1–8).

3.27.1 Previous Investigations for AOC 16-022(b)

The 10,000-gal. tank (structure 16-1465) occupied the space that previously contained UST 16-197 [AOC 16-022(b)] and UST 16-196 [AOC 16-033(b)]. UST 16-1465 leaked in 1994 and the site was sampled and remediated. Six sampling locations were selected: five on the east side of the service station (building 16-195) and one on the west side. Samples were collected and analyzed at an on-site laboratory. The analytical results of the samples collected from the sampling locations between the former service station (building 16-195) and UST 16-1465 indicated benzene, toluene, ethylbenzene, xylene (BTEX) at 65 ft bgs (LANL 1995, 057225, pp. 6-40–6-43). NMED requested additional investigation to define the nature and extent of contamination for this site (NMED 1999, 073897).

Following removal of building 16-195 in February 2003, UST 16-1456 was removed. The tank removal and soil sampling were documented in the TA-16-197 Underground Storage Tank Removal report (Dye 2003, 095409, pp. 1–8). It should be noted that this report incorrectly refers to UST 16-1456 (the 10,000-gal. tank) as UST 16-197. Upon removal, the 10,000-gal. tank appeared in very good condition with no visible evidence of any gasoline release from the dispenser, fuel line, or tank. Soil samples were collected under the former locations of the dispenser, fuel line, and at the west and east ends of the tank 16-1456. Five samples were collected from four locations and submitted for laboratory analyses of SVOCs, TPH-GRO, and VOCs. Sample results are presented in section 3.27.2.

3.27.2 Analytical Results for AOC 16-022(b)

The samples collected, analyses requested, and decision-level analytical data from the 2003 tank removal are presented in Tables 3.27-1 and 3.27-2. The samples were collected from depth intervals ranging from 0.5–4 ft bgs. The results of the analyses of samples collected during the 2003 tank removal are as follows (Dye 2003, 095409, pp. 1–8).

• SVOCs, TPH-GRO, and VOCs were detected (Figure 3.27-2).

3.28 AOC 16-024(i)—Potential Soil Contamination Associated with Former Magazine 16-64

AOC 16-024(i) is an area of potential soil contamination at TA-16 associated with a former HE magazine (structure 16-64) (Figure 3.28-1). The magazine was located northwest of the cafeteria (building 16-192) and was a 24 ft x 26 ft x 9 ft wood-framed structure. The magazine was built in 1944 and removed in 1951 (LANL 1995, 057225, pp. 5-26-1–5-26-3). The location of the former magazine is currently under an asphalt road and parking lot.

3.28.1 Previous Investigations for AOC 16-024(i)

No previous investigation has been conducted at this site.

3.28.2 Analytical Results for AOC 16-024(i)

No decision-level data are available at this site.

3.29 AOC 16-024(j)—Potential Soil Contamination Associated with Former Magazine 16-65

SWMU 16-024(j) is an area of potential soil contamination at TA-16 associated with a former HE magazine (structure 16-65) (Figure 3.29-1). The magazine was a 10 ft x 20 ft x 8 ft wood-framed structure. The magazine was built in 1944 and removed in 1951(LANL 1995, 057225, pp. 5-26-1–5-26-3). Currently, administration building 16-204 partially covers the former location of the magazine.

3.29.1 Previous Investigations for AOC 16-024(j)

No previous investigation has been conducted at this site.

3.29.2 Analytical Results for AOC 16-024(j)

No decision-level data are available at this site.

3.30 AOC 16-024(k)—Potential Soil Contamination Associated with Former Magazine 16-57

AOC 16-024(k) is an area of potential soil contamination in TA-16 associated with a former HE magazine (structure 16-57) (Figure 3.30-1). The magazine was a 6 ft x 6 ft x 7 ft wood-framed structure, surrounded on three sides and the top by an earthen berm. The magazine was built in May 1946 and destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-388).

3.30.1 Previous Investigations for AOC 16-024(k)

An RFI was conducted at AOC 16-024(k) in 1997. Four soil screening samples were collected from four locations in and adjacent to the magazine footprint. Samples were field-screened for HE and radioactivity. All samples showed no detects for HE and background radioactivity. One sample was submitted for laboratory analyses of metals, HE, and SVOCs (LANL 1997, 056660.289, pp. 62 to 68).

3.30.2 Analytical Results for AOC 16-024(k)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.30-1 and 3.30-2. One sample was collected from a depth interval of 0–1 ft bgs. The results of the analyses of the sample collected during the 1997 RFI at AOC 16-024(k) are as follows (LANL 1997, 056660.289, pp. 62–68)

- No inorganic chemicals were detected or detected above BVs.
- No explosives compounds or SVOCs were detected.

3.31 AOC 16-024(I)—Potential Soil Contamination Associated with Former Magazine 16-72

AOC 16-024(I) is an area of potential soil contamination at TA-16 associated with a former HE magazine (structure 16-72) (Figure 3.31-1). The magazine was a 6 ft \times 6 ft \times 7 ft wood-framed structure, surrounded on three sides and the top by an earthen berm. The magazine was built in 1946 and destroyed by intentional burning in 1960 (LANL 1995, 057225, pp. 5-26-1–5-26-3).

3.31.1 Previous Investigations for AOC 16-024(I)

No previous investigation has been conducted at this site.

3.31.2 Analytical Results for AOC 16-024(I)

No decision-level data are available at this site.

3.32 AOC 16-024(o)—Potential Soil Contamination Associated with Former Magazine 16-67

AOC 16-024(o) is an area of potential soil contamination at TA-16 associated with a former HE magazine (structure 16-67) (Figure 3.32-1). The magazine was a 6 ft \times 6 ft \times 7 ft wood-framed structure, surrounded on three sides by an earthen berm. It was built in May 1946 and destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-388).

3.32.1 Previous Investigations for AOC 16-024(o)

An RFI was conducted at AOC 16-024(o) in 1997. Four surface soil screening samples were collected from four locations in and adjacent to the magazine footprint. Samples were field-screened for HE and radioactivity. All samples showed only background radioactivity. HE was detected in one field-screened sample, which was submitted for laboratory analyses of metals, HE, and SVOCs (LANL 1997, 056660.289, pp. 74–80).

3.32.2 Analytical Results for AOC 16-024(o)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.32-1 and 3.32-2. One sample was collected from a depth interval of 0–0.41 ft bgs. The result of the analyses of the sample collected during the 1997 RFI is as follows (LANL 1997, 056660.289, pp. 74–80).

- Lead was detected above BVs (Figure 3.32-2).
- No explosives compounds or SVOCs were detected.

3.33 AOC 16-024(p)—Potential Soil Contamination Associated with Former Magazine 16-70

AOC 16-024(p) is an area of potential soil contamination at TA-16 associated with a former HE magazine (structure 16-70) (Figure 3.33-1). The magazine was a 6 ft \times 6 ft \times 7 ft wood-framed structure, surrounded on three sides and the top by an earthen berm. The magazine was built in May 1946 and destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-388).

3.33.1 Previous Investigations for AOC 16-024(p)

An RFI was conducted at AOC 16-024(p) in 1997. Four surface soil screening samples were collected from four locations in and adjacent to the magazine footprint. Samples were field-screened for HE and radioactivity. All samples showed no detects for HE and background radioactivity. One sample was submitted for laboratory analyses of metals, HE, and SVOCs (LANL 1997, 056660.289, pp. 80–85).

3.33.2 Analytical Results for AOC 16-024(p)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Table 3.33-1. One sample was collected from a depth interval of 0–1 ft bgs. The results of the analyses of the sample collected during the 1997 RFI at AOC 16-024(p) are as follows (LANL 1997, 056660.289, pp. 80–85).

- No inorganic chemicals were detected or detected above BVs.
- No explosives compounds or SVOCs were detected.

3.34 AOC 16-024(q)—Potential Soil Contamination Associated with Former Magazine 16-71

AOC 16-024(q) is an area of potential soil contamination at TA-16 associated with a former HE magazine (structure 16-71) (Figure 3.34-1). The magazine was a 6 ft \times 6 ft \times 7 ft wood-framed structure, surrounded on three sides and the top by an earthen berm. The magazine was built in May 1946 and destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-388).

3.34.1 Previous Investigations for AOC 16-024(q)

An RFI was conducted at AOC 16-024(q) in 1997. Four surface soil screening samples were collected from four locations in and adjacent to the magazine footprint. Samples were field-screened for HE and radioactivity. All samples showed no detects for HE and only background radioactivity. One sample was submitted for laboratory analyses of metals, HE, and SVOCs (LANL 1997, 056660.289, pp. 85–91). Sample results are presented in section 3.34.2.

3.34.2 Analytical Results for AOC 16-024(q)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.34-1–3.34-3. One sample was collected from a depth interval of 0–1 ft bgs. The results of the analyses of the sample collected during the 1997 RFI are as follows (LANL 1997, 056660.289, pp. 85–91).

- Cobalt, lead, manganese, mercury, and selenium were detected above BVs (Figure 3.34-2).
- Pyrene was detected (Figure 3.34-3).
- Explosives compounds were not detected.

3.35 AOC 16-024(r)—Potential Soil Contamination Associated with Former Magazine 16-68

AOC 16-024(r) is an area of potential soil contamination at TA-16 associated with a former HE magazine (structure 16-68) (Figure 3.35-1). The magazine was a 6 ft \times 6 ft \times 7 ft wood-framed structure, surrounded on three sides and the top by an earthen berm. The magazine was built in May 1946 and destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-388).

3.35.1 Previous Investigations for AOC 16-024(r)

An RFI was conducted at AOC 16-024(r) in 1997. Four surface soil screening samples were collected from four locations in and adjacent to the magazine footprint. Samples were field-screened for HE and radioactivity. All samples showed only background radioactivity. HE was detected in three field-screened samples. The sample with the highest screening result for 2,4,6-trinitrotoluene (TNT) was submitted for laboratory analyses of metals, HE, and SVOCs (LANL 1997, 056660.289, pp. 92–97). Sample results are presented in section 3.35.2.

3.35.2 Analytical Results for AOC 16-024(r)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.35-1 and 3.35-2. One sample was collected from a depth interval of 0–1 ft bgs. The results of the analyses of the sample collected during the 1997 RFI at AOC 16-024(r) are as follows (LANL 1997, 056660.289, pp. 92–97).

- No inorganic chemicals were detected or detected above BVs.
- No explosives compounds or SVOCs were detected.

3.36 AOC 16-024(s)—Potential Soil Contamination Associated with Former Magazine 16-60

AOC 16-024(s) is an area of potential soil contamination at TA-16 associated with a former HE magazine (structure 16-60) (Figure 3.36-1). The magazine was a 60 ft \times 20 ft \times 8.5 ft wooden structure with a concrete floor and surrounded on three sides by an earthen berm. The magazine was built in 1945 to store HE between processing operations and removed in 1950 (LANL 1995, 057225, pp. 5-26-1 to 5-26-6).

3.36.1 Previous Investigations for AOC 16-024(s)

An RFI was conducted at AOC 16-024(s) in 1997. Eight soil screening samples were collected from five locations in and adjacent to the magazine footprint. Samples were field-screened for HE and radioactivity. All samples showed only background radioactivity. HE was detected in two field-screened samples. The sample with the highest screening results and one additional sample collected from a deeper depth at the same location, were submitted for laboratory analyses of metals, HE, and SVOCs (LANL 1997, 056660.289, pp. 97–104). Sample results are presented in section 3.36.2.

3.36.2 Analytical Results for AOC 16-024(s)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.36-1 and 3.36-2. The samples were collected from depth intervals ranging from 0–2 ft bgs. The results of the analyses of samples collected during the 1997 RFI are as follows(LANL 1997, 056660.289, pp. 97–104).

- Copper, lead, and zinc were detected above BVs (Figure 3.36-2).
- No HE or SVOCs were detected.

3.37 AOC 16-024(t)—Potential Soil Contamination Associated with Former Magazine 16-464

AOC 16-024(t) is an area of potential soil contamination at TA-16 associated with a former HE magazine (structure 16-464) (Figure 3.37-1). The magazine, located northeast of the decommissioned analytical chemistry laboratory (building 16-460), was used to store HE brought to building 16-460 for analysis. The magazine was built in late 1952 and removed in 1966 (LANL 1995, 057225, pp. 5-26-9–5-26-11).

3.37.1 Previous Investigations for AOC 16-024(t)

No previous investigation has been conducted at this site.

3.37.2 Analytical Results for AOC 16-024(t)

No decision-level data are available at this site.

3.38 SWMU 16-025(c2)—Potential Soil Contamination Associated with Former Building 16-56

SWMU 16-025(c2) is an area of potential soil contamination at TA-16 associated with a former physical testing laboratory (building 16-56) (Figure 3.35-1). Building 16-56 was a 16 ft \times 16 ft \times 9 ft wood-framed structure surrounded by an earthen berm on three sides. The building contained a sink that drained to a sump [SWMU 16-029(e2)] that was also associated with building 16-52. Building 16-56 was built in 1945 and destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-416).

3.38.1 Previous Investigations for SWMU 16-025(c2)

No previous investigation has been conducted at this site.

3.38.2 Analytical Results for SWMU 16-025(c2)

No decision-level data are available at this site.

3.39 SWMU 16-025(w)—Potential Soil Contamination Associated with Former Building 16-81

SWMU 16-025(w) is an area of potential soil contamination at TA-16 associated with a former nitrocellulose drying building, 16-81 (Figure 3.15-1). Building 16-81 was 8.5 ft \times 8.5 ft \times 8 ft, located northeast of the intersection of V-Site Bunker Road. Nitrocellulose was shipped in alcohol to avoid spontaneous combustion, and the alcohol was evaporated from the nitrocellulose in building 16-81. Building 16-81 was built in 1944 and destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-390).

3.39.1 Previous Investigations for SWMU 16-025(w)

No previous investigation has been conducted at this site.

3.39.2 Analytical Results for SWMU 16-025(w)

No decision-level data are available at this site.

3.40 Consolidated Unit 16-025(y)-99

Consolidated unit 16-025(y)-99 consists of potential soil contamination from the former HE grinding building 16-55 [SWMU 16-025(y)] and two former sumps and an outfall [SWMU 16-029(a2)] that served former building 16-55. Building 16-55 (Figure 3.40-1) was built in 1944 and was used to house barium nitrate grinding operations.

3.40.1 SWMU 16-025(y)—Potential Soil Contamination Associated with Former HE Grinding Facility 16-55

SWMU 16-025(y) is an area of potential soil contamination at TA-16 associated with the former barium nitrate grinding building 16-55 (Figure 3.40-1). Building 16-55 consisted of three connected structures: a processing building ($40 \times 20 \times 12$ ft), an equipment room ($11 \times 7 \times 8$ ft), and a storage room ($11 \times 10 \times 8$ ft). Building 16-55 was a wood-frame structure with a concrete floor. Built in 1944, building 16-55 was first used for barium nitrate grinding and then used for storage. The building was destroyed by intentional burning in 1960 (LANL 1994, 039440, pp. 5-382–5-392).

3.40.1.1 Previous Investigations for SWMU 16-025(y)

An RFI was conducted at SWMU 16-025(y) in 1997. Ten soil screening samples were collected from five locations in and adjacent to the building footprint. Samples were field-screened for barium, HE, and radioactivity. All samples showed only background radioactivity. HE was detected in five field-screened samples. Screening results for barium were less than two times the BV for all samples. Three samples collected from two locations were submitted for laboratory analyses of metals, HE, and SVOCs (LANL 1997, 056660.289, pp. 169–176).

3.40.1.2 Analytical Results for SWMU 16-025(y)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.40-1 and 3.40-2. The samples were collected from depth intervals ranging from 0–2 ft bgs. The results of the analyses of samples collected during the 1997 RFI are as follows (LANL 1997, 056660.289, pp. 169–176).

- Barium was detected above BVs (Figure 3.40-2).
- No explosives compounds or SVOCs were detected.

3.40.2 SWMU 16-029(a2)—Sumps (removed) and Outfall

SWMU 16-029(a2) consists of two former HE sumps and an outfall that served former HE grinding building 16-55 at TA-16 (Figure 3.40-1). The sumps were located on the exterior southeast side of building 16-55, connected in series and discharged through a drainline southeast to an outfall that flowed to an outfall in the main TA-16 drainage (LANL 1994, 039440, pp. 5-391–5-392). The sumps were removed from 1966 to 1968 with demolition of building foundations and drainlines, documented by site photos (LANL 1996, 055016). The sumps are visible in a 1965 aerial photograph (LASL 1965, 016396), but are no longer visible in a 1977 aerial photograph (LASL 1977, 017770).

3.40.2.1 Previous Investigations for SWMU 16-029(a2)

No previous investigation has been conducted at this site.

3.40.2.2 Analytical Results for SWMU 16-029(a2)

No decision-level data are available at this site.

3.41 Consolidated Unit 16-026(b2)-00

Consolidated Unit 16-026(b2)-00 consists of two outfalls [SWMUs 16-026(b2) and 16-028(d)] that served building 16-202 (Figure 3.41-1). Building 16-202 was used as a secure machine shop and provided electrical, mechanical, pipefitting, milling, and other machining services from 1952–1993. Currently, the building is used for office space and is located in the TA-16 administration area.

3.41.1 SWMU 16-026(b2)—Outfall

SWMU 16-026(b2) is an outfall that served decommissioned machine shop building 16-202 at TA-16 (Figure 3.41-1). The outfall is located approximately 135 ft southeast of building 16-202 and daylights in the drainage ditch along Anchor Ranch Road. The outfall received discharge from an oil/water separator, which consisted of a $3 \times 3 \times 3$ ft cement pit located below-floor-level. The separator was installed in 1952, when building 16-202 was built, and remains in place. Use of the separator ceased after 1977 (LANL 1995, 057225, pp. 5-28-5–5-28-9).

3.41.1.1 Previous Investigations for SWMU 16-026(b2)

No previous investigation has been conducted at this site.

3.41.1.2 Analytical Results for SWMU 16-026(b2)

No decision-level data are available at this site.

3.41.2 SWMU 16-028(d)-Outfall

SWMU 16-028(d) is a formerly NPDES-permitted outfall (04A083) located at TA-16 approximately 80 ft southeast of decommissioned building 16-202 (Figure 3.41-1). The outfall formerly served decommissioned machine shop building 16-202 and connected to the building through an 8-in. diameter VCP. The outfall received noncontact cooling water and wash water from two floor drains, effluent from two non-HE sumps, discharge from two sink drains, and rainwater from 16 roof drains. In 1995, building 16-202 was converted to office space and the drainlines within the building were modified so that the outfall only receives stormwater from the building's roof drains (LANL 1995, 057225, pp. 5-28-8–5-28-9). The outfall was removed from the NPDES permit effective September 19, 1997 (EPA 1997, 109528).

3.41.2.1 Previous Investigations for SWMU 16-028(d)

No previous investigation has been conducted at this site.

3.41.2.2 Analytical Results for SWMU 16-028(d)

No decision-level data are available at this site.

3.42 SWMU 16-026(c2)—Outfalls

SWMU 16-026(c2) consist of the two outfalls that served chemical storage building 16-462 at TA-16 (Figure 3.42-1). The outfalls are located approximately 30 ft southeast of the building. Floor troughs within 16-462 drain to a 6-in. diameter VCP drainlines that exits the south and southeast side of the building. Effluent flowed from the drainlines southeast to a drainage ditch. Building 16-462 was built in 1952 to store chemicals for use in the analytical chemistry laboratory (building 16-460). All drains at building 16-462 were plugged in 1991 (LANL 1995, 057225, p. 5-28-2).

3.42.1 Previous Investigations for SWMU 16-026(c2)

No previous investigation has been conducted at this site.

3.42.2 Analytical Results for SWMU 16-026(c2)

No decision-level data are available at this site.

3.43 Consolidated Unit 16-026(q)-99

Consolidated Unit 16-026(q)-99 consists of the following 13 SWMUs and AOCs (Plate 3):

- potential soil contamination from former septic system [SWMU 16-005(d)];
- potential soil contamination from former HE casting building 16-27 [SWMU 16-017(h)-99];
- potential soil contamination from former storage magazine structure 16-79 [SWMU 16-017(x)-99];
- potential soil contamination from former HE powder inspection building 16-25 [SWMU 16-025(k)];
- potential soil contamination from former HE casting building 16-26 [SWMU 16-025(I)];
- outfall [SWMU 16-026(q)] from former building 16-27;
- potential soil contamination from former sump and outfall from former building 16-24 [SWMU16-029(f2)];
- outfall [SWMU 16-029(r)] from former building 16-25;
- outfall [SWMU 16-031(d)] from former building 16-28;
- sumps, drainlines, and outfall from former building 16-26 [SWMU 16-032(c)];
- potential soil contamination from former laboratory 16-24 [SWMU 16-034(a)];
- potential soil contamination from former solvent storage building 16-148 [AOC C-16-006]; and
- storage area [AOC C-16-065];

These SWMUs and AOCs represent past operations associated with the 20s-line (former buildings 16-24, 16-25, 16-26, 16-27, and 16-28) (LANL 1994, 039440, p. 5-314).

3.43.1 SWMU 16-005(d)—Former Septic System

SWMU 16-005(d) is a former septic system located at TA-16 approximately 400 ft northeast of building 16-332 (Plate 3). The septic system consisted of a septic tank (structure 16-177) and outfall drainline that served lavatories in the southwest wing of former building 16-27. The septic tank was constructed of reinforced concrete and measured $10 \times 6 \times 4.5$ ft. The septic tank drainline was a 6-in. VCP that

discharged southeast into a ditch that runs along V-Site Road (LASL 1959, 024179). The septic tank was removed in 1968 (LANL 1990, 007512) and the drainlines were removed in 1998 (LANL 1999, 063973, p. 61).

3.43.1.1 Previous Investigations for SWMU 16-005(d)

A voluntary corrective measure (VCM) was conducted at SWMU 16-005(d) in 1998 and 1999, and results were documented in the VCM completion report (LANL 1999, 063973, pp. 58–87). The purpose of the VCM was to characterize the site and to implement an accelerated cleanup in conjunction with removal activities at the site. Because the septic tank had been removed prior to the VCM, removal activities were limited to removal of the drainline. After the drainline was removed, 27 screening samples were collected from eight locations, with biased samples taken from locations beneath joints or breaks in the drainline.

Samples were field-screened for metals, HE, VOCs, and radioactivity. Based on the screening results, five samples collected from five locations were submitted for laboratory analyses of metals, HE, SVOCs, and VOCs. After receiving analytical results, two additional samples were collected—one upgradient of the former septic tank (New location) and the other at the discharge from the former septic tank (sampled deeper at an existing location). The sample upgradient was analyzed for antimony, total uranium, and HE; the sample at the discharge was analyzed for antimony and thallium (LANL 1999, 063973, p. 87). NMED requested additional investigation to define the nature and extent of contamination for this site (NMED 2002, 073818).

3.43.1.2 Analytical Results for SWMU 16-005(d)

The samples collected, analyses requested, and decision-level analytical data from the 1998 and 1999 VCM are presented in Tables 3.43-1–3.43-3. The samples were collected from depth intervals ranging from 2–9.5 ft bgs. The results of the analyses of samples collected during the 1998 and 1999 VCM are as follows (LANL 1999, 063973, pp. 58–87).

- Barium, calcium, and uranium were detected above BVs (Plate 4).
- Explosive compounds, methylene chloride, and PAHs were detected (Plate 5).

3.43.2 SWMU 16-017(h)-99—Former HE Casting Building 16-27

SWMU 16-017(h)-99 is former HE-casting building 16-27 located at TA-16 approximately 450 ft northeast of building 16-332 (Plate 3). Building 16-27 was a 150 × 50 ft wood-frame structure with a concrete foundation, concrete floor, and a basement that housed vacuum pumps and other equipment. The building consisted of a central casting room and several smaller rooms that were used as laboratories and offices. An associated equipment room south of the main building also was considered part of building 16-27. Building 16-27 was constructed in 1945 and operated until 1970. After casting operations were moved in the early 1950s, the building was used as a warehouse (LANL 1994, 039440, p. 5-317). In 1998 building 16-27 was removed, and all building structural components, piping, sumps, and discharge piping to outfalls were disposed of (LANL 1998, 059602, p. 1-3). This SWMU was originally designated as part of SWMU 16-017, a group of 24 structures in central TA-16 (LANL 1994, 039440, pp. 6-31–6-33). In 1999 SWMU 16-017 was separated into 24 SWMUs, each consisting of a single structure.

3.43.2.1 Previous Investigations for SWMU 16-017(h)-99

Two samples were collected from two locations during 1998 removal activities (LANL 1998, 059602, p. 1-3). Two samples were submitted for laboratory analyses of TAL metals, HE, polychlorinated biphenyls (PCBs), SVOCs, and VOCs. Sample results are presented in section 3.43.2.2.

3.43.2.2 Analytical Results for SWMU 16-017(h)-99

The samples collected, analyses requested, and decision-level analytical data from the 1998 are presented in Tables 3.43-4-3.43-6. The samples were collected from depth intervals ranging from 0-2.5 ft bgs. The results of the analyses of samples collected in 1998 are as follows.

- Arsenic, boron, copper, lead, and uranium were detected above BVs (Plate 4).
- Aroclor-1260, acetone, and explosives compounds were detected (Plate 5).
- SVOCs were not detected.

3.43.3 SWMU 16-017(x)-99—Former Magazine 16-79

SWMU 16-017(x)-99 is a former magazine (structure 16-79) at TA-16 located southeast of former building 16-27 and adjacent to V-Site Road (Plate 3). The magazine was a 12 x 24 x 7 ft reinforced concrete structure with earth berms on three sides and the top. The magazine was built in 1945 and ceased use by 1951. The date the magazine was removed is not known. This SWMU was originally designated as SWMU 16-017, a group of 24 structures in central TA-16 (LANL 1994, 039440, pp. 6-31–6-33). In 1999 SWMU 16-017 was separated into 24 SWMUs, each consisting of a single structure.

3.43.3.1 Previous Investigations for SWMU 16-017(x)-99

No previous investigation has been conducted at this site.

3.43.3.2 Analytical Results for SWMU 16-017(x)-99

No decision-level data are available at this site.

3.43.4 SWMU 16-025(k)—Potential Soil Contamination Associated with Former HE Powder Inspection Building 16-25

SWMU 16-025(k) is an area of potential soil contamination at TA-16 associated with former HE powder inspection building 16-25 (Plate 3). Building 16-25 was located approximately 270 ft northwest of building 16-332. The building was a $30 \times 20 \times 15$ ft wood-frame structure with a concrete foundation and concrete floor, plus an addition that was $10 \times 6 \times 15$ ft. The building operated from 1945–1959 and was destroyed by intentional burning in 1968 (LANL 1994, 039440, pp. 5-314–5-315).

3.43.4.1 Previous Investigations for SWMU 16-025(k)

An RFI was conducted at SWMU 16-025(k) in 1997. Twelve soil screening samples were collected from four locations at the corners of the building's footprint and two locations adjacent to the doors. Samples were field-screened for HE and radioactivity. All samples showed only background radioactivity. HE was detected in four field-screened samples. Three samples collected from three locations with elevated

screening results were submitted for laboratory analysis of metals, HE, and SVOCs (LANL 1997, 062539, p. 1-3).

3.43.4.2 Analytical Results for SWMU 16-025(k)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.43-7–3.43-9. The samples were collected from depth intervals ranging from 0–1 ft bgs. The results of the analyses of samples collected during the 1997 RFI are as follows (LANL 1997, 062539, pp. 140–147).

- Cadmium, copper, lead, silver, and zinc were detected above BVs (Plate 4).
- 2-Chloronaphthalene was detected (Plate 5).
- Explosives compounds were not detected.

3.43.5 SWMU 16-025(I)—Potential Soil Contamination Associated with Former HE Casting Building 16-26

SWMU 16-025(I) is an area of potential soil contamination at TA-16 associated with former HE casting building 16-26 (Plate 3). Building 16-26 was located approximately 200 ft north of building 16-332. The building was a $45 \times 40 \times 18$ ft wood-frame structure with concrete foundation and a basement (40×12 ft) that served as a utility room. The building contained a lead-lined floor trough that drained to a sump [SWMU 16-032(c)] located on the exterior of the building. Building 16-26 was built in 1944 and was first used for production casting of HE. After 1945, the building was used for inspection of raw HE until it was destroyed by intentional burning in 1968 (LANL 1994, 039440, pp. 5-315–5-316).

3.43.5.1 Previous Investigations for SWMU 16-025(I)

No previous investigation has been conducted at this site.

3.43.5.2 Analytical Results for SWMU 16-025(I)

No decision-level data are available at this site.

3.43.6 SWMU 16-026(q)—Outfalls

SWMU 16-026(q) consists of two outfalls that served former HE casting building 16-27 at TA-16 (Plate 3). The outfalls were located east and southeast of the building and daylighted to the ditch along V-Site Road. Each outfall received discharge from a set of sumps located on the northeast and southwest sides of the building. Each set of sumps was interconnected through concrete troughs that drained southeast and terminated at the outfall location. The sumps received discharges from the floor troughs in the building. The sumps, drainlines, and outfalls operated from 1945, when building 16-27 was constructed, until the early 1950s when casting operations were moved to building 16-302. After the early 1950s, building 16-27 was used as a warehouse until it ceased use in 1970. Building 16-27 was removed in 1998 (LANL 1994, 039440, pp. 5-316–5-317). The sumps and drainlines were removed in the late 1960s.

3.43.6.1 Previous Investigations for SWMU 16-026(q)

An RFI was conducted at SWMU 16-026(q) in 1997 and 1998. Field screening was conducted to select samples for laboratory analyses. Thirty samples from 23 locations were submitted for laboratory analyses of metals, total uranium, HE, SVOCs, and VOCs; however, not all samples were analyzed for all suites.

3.43.6.2 Analytical Results for SWMU 16-026(q)

The samples collected, analyses requested, and decision-level analytical data from the 1997 and 1998 RFI are presented in Tables 3.43-10–3.43-12. The samples were collected from depth intervals ranging from 0–10 ft bgs. The results of the analyses of samples collected during the 1997 and 1998 RFI are as follows.

- Aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, lead, magnesium, manganese, nickel, thallium, uranium, and vanadium were detected above BVs (Plate 4).
- Explosives compounds, PAHs, other SVOCs, and VOCs were detected (Plate 5).

3.43.7 SWMU 16-029(f2)—Sump (former) and Outfall

SWMU 16-029(f2) consists of a former HE sump and outfall that served former building 16-24 at TA-16 (Plate 3). The sump was a 4 x 11 ft reinforced-concrete structure located approximately 15 ft north of the building. The sump inlet was a 4-in. VCP drainline that exited at the north corner of building 16-24. The sump discharged through a drainline southeast to the outfall (LASL 1945, 109725). The sump and outfall operated from 1946 when building 16-24 was constructed until it was destroyed by intentional burning in 1968. The sump and drainline were removed in 1968 (LANL 1993, 039440, p. 5-318).

3.43.7.1 Previous Investigations for SWMU 16-029(f2)

No previous investigation has been conducted at this site.

3.43.7.2 Analytical Results for SWMU 16-029(f2)

No decision-level data are available at this site.

3.43.8 SWMU 16-029(r)—Outfall

SWMU 16-029(r) is a former outfall that served the former HE process building 16-25 at TA-16 (Plate 3). The 1990 SWMU Report originally identified SWMU 16-029(r) as an HE sump and outfall associated with building 16-25 (LANL 1990, 007512). However, extensive archival research found no record of the existence of a sump at this building. An as-built engineering drawing for building 16-25 shows a drainline that exited building 16-25 from the southeast corner, tied into a drainline from 16-26 and daylighted near a former pond located southeast of building 16-26 (LASL 1940s, 109937). No sump is shown in the drawing.

3.43.8.1 Previous Investigations for SWMU 16-029(r)

No previous investigation has been conducted at this site.

3.43.8.2 Analytical Results for SWMU 16-029(r)

No decision-level data are available at this site.

3.43.9 SWMU 16-031(d)—Sumps (former) and Outfalls

SWMU 16-031(d) consists of two former sumps and associated outfalls at TA-16 that served a former cooling tower building (structure 16-28) (Plate 3). The exact locations of the outfalls are not known. Engineering drawings for building 16-28 show two cooling towers and a sump associated with each tower and drainlines exiting each sump (LASL 1945, 109713). The cooling towers, sumps, and drainlines were removed in 1968 (LANL 1994, 039440, p. 5-359).

3.43.9.1 Previous Investigations for SWMU 16-031(d)

A VCM was conducted at SWMU 16-031(d) in April 1997 and results were documented in the VCM completion report (LANL 1997, 056569, pp. 17–20). Five screening samples were collected from five locations in the footprint of cooling tower structure 16-28. No samples were taken at the location of the outfall. Samples were field screened for metals and HE. One sample was submitted for laboratory analysis of metals (LANL 1997, 056569, pp. 17–20).

3.43.9.2 Analytical Results for SWMU 16-031(d)

The samples collected, analyses requested, and decision-level analytical data from the 1997 VCM are presented in Tables 3.43-13 and 3.43-14. One sample was collected from a depth interval of 0–1 ft bgs. The result of the analyses of the sample collected during the 1997 VCM is as follows (LANL 1997, 056569, pp. 17–20).

• Copper was detected above BVs (Plate 4).

3.43.10 SWMU 16-032(c)—Sumps (former) and Outfall

SWMU 16-032(c) consists of a former sump and outfall at TA-16 that served former HE process building 16-26 (Plate 3). The sump was located on the exterior northeast side of the building and discharged to a 6-in.-diameter VCP. The outfall was located near the southeast corner of building 16-105. The drainlines and sumps were removed in 1968 (LANL 1994, 039440, p. 5-316).

3.43.10.1 Previous Investigations for SWMU 16-032(c)

No previous investigation has been conducted at this site.

3.43.10.2 Analytical Results for SWMU 16-032(c)

No decision-level data are available at this site.

3.43.11 SWMU 16-034(a)—Potential Soil Contamination Associated with Former Laboratory 16-24

SWMU 16-034(a) is an area of potential soil contamination at TA-16 associated with former HE analytical laboratory building 16-24 (Plate 3). Building 16-24, located approximately 340 ft north of building 16-332, was a $20 \times 36 \times 11$ ft wood-frame structure with a concrete floor. The building had lead-lined floor troughs that drained to a drainline that discharged to a sump and outfall [SWMU 16-029(f2)]. Building 16-24 was

constructed in 1946 and operated until it was destroyed by intentional burning in 1968 (LANL 1994, 039440, p. 5-318).

3.43.11.1 Previous Investigations for SWMU 16-034(a)

No previous investigation has been conducted at this site.

3.43.11.2 Analytical Results for SWMU 16-034(a)

No decision-level data are available at this site.

3.43.12 AOC C-16-006—Former Solvent Storage Building 16-148

AOC C-16-006 is a former solvent storage building 16-148 that was located at TA-16, approximately 10 ft northwest of former building 16-24 (Plate 3). The storage building was a 6 x 12 x 6 ft wood-frame structure, constructed in 1950 and removed in 1968 (LANL 1990, 007514). There is a discrepancy as to whether the building was used to store equipment or solvents.

3.43.12.1 Previous Investigations for AOC C-16-006

No previous investigation has been conducted at this site.

3.43.12.2 Analytical Results for AOC C-16-006

No decision-level data are available at this site.

3.43.13 AOC C-16-065—Storage Area

AOC C-16-065 is a former storage area (structure 16-185), located approximately 50 ft east of former building 16-27 at TA-16 (Plate 3). The storage area consists of a concrete platform with a dimension of 14-ft long x 9-ft wide x 5-ft high. The area was used to store containers of HE-contaminated waste from nearby HE-processing buildings. The platform was built in 1948 and used until 1960. The platform was removed in 1968 during the removal of nearby buildings (LANL 1994, 039440, pp. 5-362–5-363).

3.43.13.1 Previous Investigations for AOC C-16-065

A VCM was conducted at AOC C-16-065 in May 1997 and results were documented in the VCM completion report (LANL 1997, 056569, pp. 20–24). Five screening samples were collected from the footprint of the former container storage platform. Samples were field-screened for metals, BTEX, and HE. One sample was submitted for laboratory analyses of metals, HE, SVOCs, and VOCs. Sample results are presented in section 3.43.13.2 (LANL 1997, 056569, p. 24).

3.43.13.2 Analytical Results for AOC C-16-065

The samples collected, analyses requested, and decision-level analytical data from the 1997 VCM are presented in Tables 3.43-15–3.43-17. One sample was collected from a depth interval of 0–1 ft bgs. The results of the analyses of the sample collected during the 1997 VCM are as follows (LANL 1997, 056569, pp. 20–24).

- PAHs were detected (Plate 5).
- No inorganic chemicals were detected.
- No explosives compounds or VOCs were detected.

3.44 SWMU 16-026(s)—Outfall

SWMU 16-026(s) is an outfall at TA-16 that served a former instrument shop (building 16-5) (Figure 3.44-1). The outfall is located approximately 100 ft southeast of the former shop. The outfall drainline is a 4-in.-diameter VCP that originated from north side of the building. Oils and solvents were used in the instrument shop, which operated from 1945–1956. Building 16-5 was removed in 1956, but the drainline was left in place (LANL 1994, 039440, p. 5-424).

3.44.1 Previous Investigations for SWMU 16-026(s)

No previous investigation has been conducted at this site.

3.44.2 Analytical Results for SWMU 16-026(s)

No decision-level data are available at this site.

3.45 SWMU 16-026(u)-Outfall

SWMU 16-026(u) is an outfall that served an oil-water separator in the former service station (building 16-195) at TA-16 (Figure 3.45-1). The outfall was located approximately 90 ft southeast of the service station. The oil/water separator consisted of a $3 \times 3 \times 3$ ft below-floor-level cement pit with a 2-in.-diameter cast-iron overflow drainline that discharged to the outfall. The oil-water separator received floor washings from the service station's oil and grease room, wash area, ambulance room, and grease and repair room. The oil-water separator and its associated drainlines were removed in 2003 when building 16-195 underwent decontamination and decommissioning (D&D) (LANL 2003, 073838, p. 1).

3.45.1 Previous Investigations for SWMU 16-026(u)

When building 16-195 underwent removal in 2003 (LANL 2003, 073838, p. 1), confirmation samples were collected beneath the former location of the oil/water separator and beneath the removed portions of the drainline from the oil/water separator. Six samples collected from six locations were submitted for laboratory analyses of TAL metals, SVOCs, TPH-DRO, TPH-GRO, and VOCs.

3.45.2 Analytical Results for SWMU 16-026(u)

The samples collected, analyses requested, and decision-level analytical data from the 2003 D&D are presented in Tables 3.45-1–3.45-3. The samples were collected from depth intervals ranging from 0.5–1.5 ft bgs. The results of the analyses of samples collected during the 2003 D&D are as follows.

- Cadmium, calcium, and zinc were detected above BVs (Figure 3.45-2).
- PAHs, SVOCs, and TPH-DRO were detected (Figure 3.45-3).
- No TPH-GRO or VOCs were detected.

3.46 SWMU 16-026(y)—Outfall

SWMU 16-026(y) is an outfall at TA-16 that serves building 16-411 (Figure 3.46-1). The drainline to the outfall is a 4-in.-diameter VCP that exits building 16-411 on its west side and turns south to terminate at its discharge point on the hill slope of Water Canyon. The discharge point is located immediately south of a double security fence at the edge of water canyon (Santa Fe Engineering Ltd. 1992, 015328). Building 16-411 was built in 1951 and used for the assembly of finished HE components. The outfall received discharges from an equipment room floor drain, a sink, roof drains, water fountain, and an eyewash station. In the 1990s the roof drains were rerouted to a separate outfall, and the other drains were either plugged or rerouted to a holding tank (Santa Fe Engineering Ltd. 1992, 015328).

3.46.1 Previous Investigations for SWMU 16-026(y)

An investigation has not been conducted at this site.

3.46.2 Analytical Results for SWMU 16-026(y)

No decision-level data are available at this site.

3.47 AOC 16-027(c)—Former Transformer

AOC 16-027(c) is a former PCB transformer (structure 16-563) located at TA-16 approximately 100 ft north of building 16-430 in an outdoor fenced area (Figure 3.47-1). The transformer was placed at this site in 1952 and contained 100–500 gal. of dielectric oil with a PCB concentration of 25,000 ppm (LANL 1990, 007512). A leak from the transformer was first reported in 1987. In 1992, the transformer was removed along with its pad and PCB-contaminated soil around and under the pad (Bailey 1993, 052964.489, p. 981). In 1993, a New transformer was placed in the southern portion of the fenced area and remains in place.

3.47.1 Previous Investigations for AOC 16-027(c)

The 1995 Addendum 2 to the 1993 RFI work plan reported that a leak of 0.5–1 gal. was detected on July 28, 1987. The concrete pad on which the transformer was mounted and the surrounding soil underwent immediate cleanup. The concrete was cleaned using the double-wash/double-rinse method in accordance with the Toxic Substances Control Act (TSCA) PCB spill-cleanup requirements, and the soil was removed to a depth of approximately 2.5 ft, drummed, and taken to MDA G at TA-54 (LANL 1995, 057225, pp. 6-45–6-46).

In 1989, inspection and sampling revealed a need for additional cleanup. Several sampling and cleanup efforts followed, including removal of the transformer and concrete pad, excavation and removal of the contaminated soil under the pad, and replacement of the transformer and pad with a non-PCB transformer and a New pad. A total of 691 ft³ of soil was removed from the location of the transformer (structure 16-563). The site cleanup was completed November 12, 1992, when samples revealed PCB levels below the 25 ppm TSCA-mandated cleanup levels (LANL 1995, 057225, pp. 6-45–6-46).

3.47.2 Analytical Results for AOC 16-027(c)

No decision-level data are available at this site.

3.48 AOC 16-027(d)—Former Transformer

AOC 16-027(d) is a former pad-mounted transformer (structure 16-569) located at TA-16 approximately 100 ft north of building 16-430 (Figure 3.47-1). The transformer contained non-PCB dielectric mineral oil (LANL 1993, 057225 p. 6-32). There are no documented releases from the transformer. The transformer and pad were removed at an unknown date.

3.48.1 Previous Investigations for AOC 16-027(d)

The 1995 Addendum 2 to the 1993 RFI work plan reported that results from a soil sample, collected from the area around the transformer on April 28, 1994, showed a PCB concentration of 7.3 ppm (not decision-level data). This is below the 25 ppm TSCA-mandated cleanup level for low-contact outdoor electrical substations (LANL 1995, 057225, p. 6-32).

3.48.2 Analytical Results for AOC 16-027(d)

No decision-level data are available at this site.

3.49 SWMU 16-028(b)-Outfall

SWMU 16-028(b) is a formerly NPDES-permitted outfall (04A092) at TA-16 that served former building 16-370 (Figure 3.49-1). The outfall is located approximately 50 ft south of building 16-370. The outfall drainline consists of a 6-in. VCP that exits building 16-370 from its west side and daylights in Water Canyon. The outfall formerly received effluent from 29 floor drains, an eyewash station, a drinking fountain, and a sink. Building 16-370 was built in 1953 as a barium nitrate grinding facility. In the late 1950s, it was converted to a metal-forming shop for steel and aluminum. All drains that discharged to the outfall were plugged in the 1990s (LANL 1995, 057225, pp. 5-28-13–5-28-15). The outfall was removed from the NPDES permit effective January 14, 1998 (EPA 1998, 109568).

3.49.1 Previous Investigations for SWMU 16-028(b)

The 1995 Addendum 2 to the 1993 RFI work plan reported two studies conducted at the outfall. During a study of barium and HE in water and soil at various outfalls throughout TA-16 in 1971, barium contamination was found 150 ft south of building 16-370 in the drainage channel. A 1994 study of soil around building 16-370 used laser-induced breakdown spectroscopy and XRF to determine the barium content. The result showed barium concentrations above LANL BVs in some places between the outfall and 168 ft downgradient in the drainage channel (LANL 1995, 057225, pp. 5-28-21–5-28-22).

An investigation was conducted at SWMU 16-028(b) in 1998. One soil sample was collected from the outfall and submitted for laboratory analyses of TAL metals, HE, and SVOCs. Sample results have not previously been reported and are presented in section 3.49.2.

In July 2000, as part of the post-Cerro Grande fire recovery, debris removal, mulching, and permanent seeding were conducted at this site as BMPs. Straw wattles were also installed to stabilize the site and to prevent any potential contaminant migration (LANL 2001, 070305, p. 10).

3.49.2 Analytical Results for SWMU 16-028(b)

The samples collected, analyses requested, and decision-level analytical data from the 1998 investigation are presented in Tables 3.49-1–3.49-3. One sample was collected from a depth interval of 0–0.5 ft bgs. The results of the analyses of the sample collected during the 1998 investigation are as follows.

- Cadmium, chromium, cobalt, copper, lead, mercury, nickel, uranium, and zinc were detected above BVs (Figure 3.49-2).
- Explosives compounds and PAHs were detected (Figure 3.49-3).

3.50 Consolidated Unit 16-029(b2)-99

Consolidated unit 16-029(b2)-99 consists of two former HE sumps and an outfall [SWMU 16-029(b2)] and an area of potential soil contamination associated with former HE processing building 16-53 [AOC C-16-005] (Figure 3.50-1). Building 16-53 housed a hydraulic press for HE processing and may have been used for explosives compound machining/casting and optical equipment storage.

3.50.1 SWMU 16-029(b2)—Sumps (former) and Outfall

SWMU 16-029(b2) consists of two former HE sumps and an outfall that served former HE processing building 16-53 at TA-16 (Figure 3.50-1). The sumps were located on the exterior southwest side of the berm that surrounded building 16-53. The sumps were connected in series and discharged through a drainline to an outfall approximately 250 ft south of building 16-53 (LASL 1959, 024186). The sumps were removed from 1966 to 1968 with demolition of building foundations and drainlines, documented by site photos (LANL 1996, 055016). The sumps are visible in a 1965 aerial photograph (LASL 1965, 016396), but are no longer visible in a 1977 aerial photograph (LASL 1977, 017770).

3.50.1.1 Previous Investigations for SWMU 16-029(b2)

No previous investigation has been conducted at this site.

3.50.1.2 Analytical Results for SWMU 16-029(b2)

No decision-level data are available at this site.

3.50.2 AOC C-16-005—Potential Soil Contamination Associated with Former HE Processing Building 16-53

AOC C-16-005 is an area of potential soil contamination at TA-16 associated with former HE processing building 16-53 (Figure 3.50-1). Building 16-53, located approximately 50 ft southwest of Bunker Road, was a $39 \times 16 \times 14$ ft structure with a $17 \times 6 \times 8$ ft addition. The building was of wood-frame construction

with a concrete foundation and surrounded on three sides by an earthen berm. Building 16-53 was built in 1945 and operated until it was destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-395).

3.50.2.1 Previous Investigations for AOC C-16-005

An RFI was conducted at AOC C-16-005 in August 1997. Twelve soil screening samples were collected from six locations in the building footprint. Samples were field screened for HE and radioactivity. All samples showed only background radioactivity. HE was detected in five field screened samples. Two samples from two locations with elevated screening results of TNT were submitted for laboratory analyses of metals, HE, and SVOCs (LANL 1997, 056660.289, pp. 214–220).

3.50.2.2 Analytical Results for AOC C-16-005

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.50-1 and 3.50-2. The samples were collected from depth intervals of 0–1 ft bgs. The results of the analyses of samples collected during the 1997 RFI are as follows (LANL 1997, 056660.289, pp. 214–220).

- Mercury was detected above BVs (Figure 3.50-2).
- HE and SVOCs were not detected.

3.51 Consolidated Unit 16-029(c2)-99

Consolidated Unit 16-029(c2)-99 consists of a former septic system [SWMU 16-005(e)], former HE steam-cleaning building 16-36 [AOC 16-015(c)], an area of potential soil contamination associated with former HE testing building 16-37 [SWMU 16-025(z)], and three former sumps and an outfall [SWMU 16-029(c2)] that served former building 16-37 (Figure 3.51-1).

3.51.1 SWMU 16-005(e)—Former Septic System

SWMU 16-005(e) is a former septic system located at TA-16 approximately 70 ft northwest of former explosives testing building 16-37 (Figure 3.51-1). The septic system served the lavatories and darkrooms in building 16-37 and consisted of a 7-ft long x 3.5-ft wide x 5-ft deep reinforced concrete septic tank (structure 16-179) and a drain field. A 6-in.-diameter VCP drainline exited building 16-37 on the northwest corner and connected to the septic tank inlet (LANL 1994, 039440, pp. 5-387–5-388). The septic tank drainline discharged west to a drain field (LASL 1948, 109945). The septic tank was installed in 1948 and was removed at an unknown date.

3.51.1.1 Previous Investigations for SWMU 16-005(e)

No previous investigation has been conducted at this site.

3.51.1.2 Analytical Results for SWMU 16-005(e)

No decision-level data are available at this site.

3.51.2 AOC 16-015(c)—Former Building 16-36

AOC 16-015(c) is a former HE steam-cleaning building 16-36 located at TA-16 approximately 10 ft southeast of former building 16-37 (Figure 3.51-1). Building 16-36 was an 8-ft long \times 8-ft wide \times 10-ft high wood-frame structure with a concrete foundation. Effluent from the building drained to a sump located on the southeast corner of building 16-37 [SWMU 16-029(c2)]. The steam cleaning building was constructed in 1944 and was destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-388).

3.51.2.1 Previous Investigations for AOC 16-015(c)

An RFI was conducted at AOC 16-015(c) in 1997. Field screening was conducted to select samples for laboratory analyses. Two samples from two locations were submitted for laboratory analyses of metals, HE, and SVOCs.

3.51.2.2 Analytical Results for AOC 16-015(c)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.51-1-3.51-3. The samples were collected from depth intervals ranging from 0-1 ft bgs. The results of the analyses of samples collected during the 1997 RFI are as follows.

- Copper, lead, and zinc were detected above BVs (Figure 3.51-2).
- Benzoic acid and RDX (research department explosive or hexahydro-1,3,5-trinitro-1,3,5-tetrazocine) were detected (Figure 3.51-3).

3.51.3 SWMU 16-025(z)—Potential Soil Contamination Associated with Former HE Testing Building 16-37

SWMU 16-025(z) is an area of potential soil contamination at TA-16 associated with former HE testing building 16-37 (Figure 3.51-1). Building 16-37 was located approximately 40 ft north of Bunker Road. The building was a $75 \times 20 \times 13$ ft wood-frame structure with concrete floors. Building 16-37 was constructed in 1944 and destroyed by intentional burning in 1960 (LANL 1994, 039440, pp. 5-391–5-392).

3.51.3.1 Previous Investigations for SWMU 16-025(z)

No previous investigation has been conducted at this site.

3.51.3.2 Analytical Results for SWMU 16-025(z)

No decision-level data are available at this site.

3.51.4 SWMU 16-029(c2)—Sumps (former) and Outfall

SWMU 16-029(c2) consists of three former sumps and an outfall that served former building 16-37 at TA-16 (Figure 3.51-1). Two of the sumps, located on the exterior east side of building 16-37, discharged through a drainline east to a secondary sump. The drainline from the secondary sump discharged to an outfall located approximately 250 ft southeast of building 16-37 (LASL 1959, 024187). Building 16-37 was constructed in 1944 and destroyed by intentional burning in 1960. The sumps were removed from 1966 to 1968 with demolition of building foundations and drainlines, documented by site photos (LANL 1996,

055016). The sumps are visible in a 1965 aerial photograph (LASL 1965, 016396), but are no longer visible in a 1977 photograph (LASL 1977, 017770).

3.51.4.1 Previous Investigations for SWMU 16-029(c2)

No previous investigation has been conducted at this site.

3.51.4.2 Analytical Results for SWMU 16-029(c2)

No decision-level data are available at this site.

3.52 Consolidated Unit 16-029(e)-99

Consolidated unit 16-029(e)-99 consists of four outfalls [SWMU 16-026(h2)] and an HE sump and outfall [SWMU 16-029(e)] associated with assembly building 16-360 (Figure 3.52-1).

3.52.1 SWMU 16-026(h2)—Outfalls

SWMU 16-026(h2) consists of four outfalls at TA-16 that served HE equipment assembly building 16-360 (Figure 3.52-1). The western outfall received discharge from a steam-pit drain. The southern outfall received condensate from three floor drains. The remaining two outfalls are located to the east of the building and discharge stormwater from roof drains. In the 1990s, the steam pit drain and floor drains were rerouted to the sanitary sewer system (Santa Fe Engineering Ltd. 1992, 020973).

3.52.1.1 Previous Investigations for SWMU 16-026(h2)

No previous investigation has been conducted at this site.

3.52.1.2 Analytical Results for SWMU 16-026(h2)

No decision-level data are available at this site.

3.52.2 SWMU 16-029(e)—Sump and Outfall

SWMU 16-029(e) consists of an HE sump and formerly NPDES-permitted outfall (05A159) at TA-16 that served HE equipment assembly building 16-360 (Figure 3.52-1). The sump is a 12 × 4 × 5 ft reinforced concrete structure located on the exterior southeast side of the building. The sump received wash water from historical cleaning activities (LANL 1993, 020948, p. 5-32) and discharged southeast to the outfall through a 6-in.-diameter drainline. In the 1990s, the sump outlet was plugged (Santa Fe Engineering Ltd. 1992, 020973). The outfall was removed from the NPDES permit effective August 16, 1995 (EPA 1995, 109574).

3.52.2.1 Previous Investigations for SWMU 16-029(e)

An RFI was conducted at SWMU 16-029(e) in 1995. Eleven samples collected from seven locations were submitted for laboratory analyses of metals, total cyanide, HE, SVOCs, and VOCs; however, not all samples were analyzed for all suites.

BMPs were installed at SWMU 16-029(e) in June 2000 as part of the post-Cerro Grande fire recovery. Permanent seeding, mulching, and straw wattles were installed as BMPs (LANL 2001, 070305, p. 10).

3.52.2.2 Analytical Results for SWMU 16-029(e)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.52-1-3.52-3. The samples were collected from depth intervals ranging from 0–9.5 ft bgs. The results of the analyses of samples collected during the 1995 RFI are as follows.

- Aluminum, arsenic, barium, cadmium, calcium, chromium, copper, iron, lead, magnesium, nickel, and zinc were detected above BVs (Figure 3.52-2).
- Explosive compounds, PAHs, other SVOCs, and VOCs were detected (Figure 3.52-3).

3.53 Consolidated Unit 16-029(g)-99

Consolidated Unit 16-029(g)-99 consists of an area of potential soil contamination associated with materials testing facility building 16-450 [SWMU 16-021(a)], an outfall [SWMU 16-028(e)], and former sumps and an outfall [SWMU 16-029(g)] (Figure 3.53-1). Building 16-450 was constructed in 1953 and commissioned to house electroplating operations. However, the building was redesigned prior to construction and instead operated as a materials-testing laboratory. Currently, building 16-450 is part of the tritium processing operation at the Laboratory.

3.53.1 SWMU 16-021(a)—Plating Operation in Building 16-450

SWMU 16-021(a) is identified in the 1990 SWMU Report as an operational release of liquids from plating operations at building 16-450 at TA-16 to an outfall (LANL 1990, 007512, p. 16-021) (Figure 3.53-1). Spent liquids were believed to have been discharged to a drainage east of the building. However, archival research demonstrates that electroplating operations were never conducted at this building. In 1950, the building was originally intended to house electroplating operations. However, in 1951 the design criteria for the building were revised and the building was reassigned to function as a materials testing laboratory. From the time of its construction, building 16-450 has always functioned as a materials testing laboratory and has never been used for electroplating operations (Griffin 1992, 109748; LANL 1993, 020948, pp. 5-111–5-112). Therefore, such a release could not have occurred.

In 1995, the investigating field team mistakenly identified SWMU 16-021(a) as the outfall that received effluent from floor drains of building 16-450 and the RFI was conducted at the outfall.

3.53.1.1 Previous Investigations for SWMU 16-021(a)

An RFI was conducted at SWMU 16-021(a) in 1995. The purpose of the RFI was to confirm the location of the outfall and to determine if a release had occurred from the drainline. However, the RFI investigated the outfall that received effluent from floor drains of building 16-450 rather than the operational release from the plating operation. The location of the outfall was confirmed by the presence of broken pieces of VCP. Two sampling locations were selected near the outfall: one at the mouth of the outfall and one 5 ft downgradient of the outfall. A total of five samples were collected. All were field screened for organic vapors and submitted for laboratory analyses of metals, SVOCs, and VOCs (LANL 1997, 062539, pp. 70–76).

Additional investigation is required to define the nature and extent of contamination for the floor drain outfall.

3.53.1.2 Analytical Results for SWMU 16-021(a)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.53-1–3.53-3. The samples were collected from depth intervals ranging from 0.75–5.5 ft bgs. The results of the analyses of samples collected during the 1995 RFI are as follows (LANL 1997, 062539, pp. 70–76).

- Copper, mercury, and zinc were detected above BVs (Figure 3.53-2).
- Benzoic acid and VOCs were detected (Figure 3.53-3).

3.53.2 SWMU 16-028(e)—Outfall

SWMU 16-028(e) is a formerly NPDES-permitted outfall (04A091) that served materials testing laboratory building 16-450 at TA-16 (Figure 3.53-1). The outfall was located southeast of building 16-450 and received discharges through a drainline from an HE sump [SWMU 16-029(g)]. The outfall discharged outside the security fence at the edge of Water Canyon. The sump was removed in 1997 (LANL 1997, 055837) and the outfall drainline was plugged, but left in place. The outfall was removed from the NPDES permit effective September 19, 1997 (EPA 1997, 109528).

3.53.2.1 Previous Investigations for SWMU 16-028(e)

An RFI was conducted at SWMU 16-028(e) in 1995. Eleven samples collected from seven locations were submitted for laboratory analyses of metals, total cyanide, HE, SVOCs, and VOCs; however, not all samples were analyzed for all suites.

3.53.2.2 Analytical Results for SWMU 16-028(e)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.53-4–3.53-6. The samples were collected from depth intervals ranging from 0–3.25 ft bgs. The results of the analyses of samples collected during the 1995 RFI are as follows.

- Aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, mercury, nickel, uranium, and vanadium were detected above BVs (Figure 3.53-2).
- Explosives compounds, PAHs, other SVOCs, and VOCs were detected (Figure 3.53-3).

3.53.3 SWMU 16-029(g)—Former Sump

SWMU 16-029(g) consists of a former HE sump located at TA-16 on the exterior southeast side of materials testing laboratory building 16-450 (Figure 3.53-1). The sump received wash water from the floor trenches and drains within 16-450 and discharged to an outfall [SWMU 16-028(e)]. The sump was removed in 1997 (LANL 1997, 055837).

3.53.3.1 Previous Investigations for SWMU 16-029(g)

An interim measure (IM) was performed at SWMU 16-029(g) in 1997. The sump was removed and confirmation sampling (excavated samples and not decision-level data) was conducted around and below the sump in association with construction at building 16-450 (LANL 1997, 055837).

BMPs were installed at SWMU 16-029(g) in 2000 as part of the post-Cerro Grande fire recovery. The site was seeded and mulched and straw wattles were installed (LANL 2001, 070305, p. 10).

3.53.3.2 Analytical Results for SWMU 16-029(g)

Sample results are the same as those at AOC 16-028(e), presented in section 3.53.2.2.

3.54 Consolidated Unit 16-029(v)-99

Consolidated Unit 16-029(v)-99 consists of the following seven SWMUs and AOCs (Plate 6):

- AOC 16-015(d), former steam cleaning building 16-51;
- SWMU 16-025(a2), an area of potential soil contamination associated with former HE casting building 16-50;
- SWMU 16-025(b2), an area of potential soil contamination associated with former HE casting building 16-52;
- SWMU 16-029(d2), two sumps and an outfall that served former building 16-50;
- SWMU 16-029(e2), three sumps and an outfall that served former building 16-52;
- SWMU 16-029(v), a sump and outfall that served former building 16-49; and
- SWMU 16-034(o), an area of potential soil contamination associated with former laboratory building 16-49.

These SWMUs/AOCs are associated with past HE casting operations at former buildings 16-49, 16-50, 16-51, and 16-52.

3.54.1 AOC 16-015(d)—Former Steam Cleaning Building 16-51

AOC 16-015(d) is former HE steam-cleaning building 16-51 located at TA-16, approximately 25 ft east of former building 16-50 (Plate 5). The steam cleaning building was a 7 x 7 ft wood-frame structure on a concrete foundation. The building was constructed in 1944 and destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-388).

3.54.1.1 Previous Investigations for AOC 16-015(d)

An RFI was conducted at AOC 16-015(d) in 1997. Field screening was conducted to select samples for laboratory analyses. Two samples from two locations were submitted for laboratory analyses of metals, HE, and SVOCs.

3.54.1.2 Analytical Results for AOC 16-015(d)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.54-1–3.54-3. The samples were collected from depth intervals of 0–1 ft bgs. The results of the analyses of samples collected during the 1997 RFI are as follows.

- Barium, copper, and silver were detected above BVs (Plate 7).
- PAHs and phenol were detected (Plate 8).
- Explosives compounds were not detected.

3.54.2 SWMU 16-025(a2)—Potential Soil Contamination Associated with Former HE Casting Building 16-50

SWMU 16-025(a2) is an area of potential soil contamination at TA-16 associated with former HE casting building 16-50 (Plate 6). Building 16-50, located approximately 40 ft southeast of former building 16-49, was a wood-frame structure consisting of two rooms, each $21 \times 13 \times 9$ ft with a concrete floor and earthen berms on the west, north, and south sides. The rooms were also separated by an earthen berm. Building 16-50 was constructed in 1944 and destroyed by intentional burning in 1960 (LANL 1994, 039440, pp. 5-392–5-393).

3.54.2.1 Previous Investigations for SWMU 16-025(a2)

An RFI was conducted at SWMU 16-025(a2) in 1997. Field screening was conducted to select samples for laboratory analyses. Two samples from two locations were submitted for laboratory analyses of metals, HE, and SVOCs.

3.54.2.2 Analytical Results for SWMU 16-025(a2)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.54-4–3.54-6. The samples were collected from depth intervals of 0–1 ft bgs. The results of the analyses of samples collected during the 1997 RFI are as follows.

- Antimony and silver were detected above BVs (Plate 7).
- High-melting explosive (HMX) or 1,3,5,7-tetranitro-1,3,5,7-tetrazocine), RDX, and 2-methylnaphthalene were detected (Plate 8).

3.54.3 SWMU 16-025(b2)—Potential Soil Contamination Associated with Former HE Casting Building 16-52

SWMU 16-025(b2) is an area of potential soil contamination at TA-16 associated with former HE casting building 16-52 (Plate 6). Building 16-52, located 60 ft southeast of former building 16-460, was a wood-frame structure with a concrete floor and had three sections that measured $15 \times 15 \times 9$ ft, $15 \times 11 \times 9$ ft, and $23 \times 15 \times 9$ ft. The southern portion of the building was separated from the rest of the structure by an earthen berm. The entire building had earthen berms and reinforced concrete dividers on the west, north, and south sides. Building 16-52 was constructed in 1944 and destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-393).

3.54.3.1 Previous Investigations for SWMU 16-025(b2)

An RFI was conducted at SWMU 16-025(b2) in 1997. Twelve soil screening samples were collected from six locations in and adjacent to the building footprint. Samples were field-screened for HE and radioactivity. All samples showed background radioactivity. HE was detected in three field-screened samples. Two samples from two locations were submitted for laboratory analyses of metals, HE, and SVOCs (LANL 1997, 056660.289, pp. 104–112). Sample results are presented in section 3.54.3.2.

3.54.3.2 Analytical Results for SWMU 16-025(b2)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.54-7–3.54-9. The samples were collected from depth intervals of 0–1 ft bgs. The

results of the analyses of samples collected during the 1997 RFI are as follows (LANL 1997, 056660.289, pp. 104–112).

- Lead, mercury, silver, and zinc were detected above BVs (Plate 7).
- PAHs and chlorophenol[2-] were detected (Plate 8).
- Explosives compounds were not detected.

3.54.4 SWMU 16-029(d2)—Sumps (former) and Outfalls

SWMU 16-029(d2) consists of two former sumps and their associated outfalls that served former experimental casting building 16-50 at TA-16 (Plate 6). The drainline to the sumps consisted of 4-in. castiron pipe that exited the southeast side of the building (LASL 1959, 024192). The sumps, located approximately 75 ft southeast of the building, drained to discharge point southeast of the sumps. Building 16-50 was routinely cleaned using high-pressure steam cleaning and wash water was discharged to the sumps. The sumps were used from 1944–1960 (LANL 1994, 039440, pp. 5-392–5-393). The sumps were removed from 1966 to 1968 with demolition of building foundations and drainlines, documented by site photos (LANL 1996, 055016). The sumps are visible in a 1965 aerial photograph (LASL 1965, 016396) and are no longer visible in a 1977 aerial photograph (LASL 1977, 017770).

3.54.4.1 Previous Investigations for SWMU 16-029(d2)

No previous investigation has been conducted at this site.

3.54.4.2 Analytical Results for SWMU 16-029(d2)

No decision-level data are available at this site.

3.54.5 SWMU 16-029(e2)—Sumps (former) and Outfalls

SWMU 16-029(e2) consists of three former sumps and outfalls at TA-16 that served former HE processing building 16-52 (Plate 6). Drainlines associated with the sumps discharged to outfalls located southeast of the sumps. The exact discharge points are not known. The sumps were used from 1944– 1960 (LANL 1994, 039440, p. 5-393). The date that the sumps and drainlines were removed is not known. However, the sumps are visible in a 1965 aerial photograph (LASL 1965, 016396) and are no longer visible in a 1977 aerial photograph (LASL 1977, 017770).

3.54.5.1 Previous Investigations for SWMU 16-029(e2)

No previous investigation has been conducted at this site.

3.54.5.2 Analytical Results for SWMU 16-029(e2)

No decision-level data are available at this site.

3.54.6 SWMU 16-029(v)—Sump (former) and Outfall

SWMU 16-029(v) is a former sump and outfall at TA-16 approximately 120 ft southeast of former building 16-49 (Plate 6). Lead-lined floor troughs within the building drained to a 4-in. cast-iron pipe that discharged to the sump. The sump discharged to an outfall located southeast of the building. The sump

was used from approximately 1944–1960 (LANL 1994, 039440 pp. 5-394–5-395). The sumps were removed from 1966 to 1968 with demolition of building foundations and drainlines, documented by site photos (LANL 1996, 055016). The sumps are visible in a 1965 aerial photograph (LASL 1965, 016396) and are no longer visible in a 1977 aerial photograph (LASL 1974, 017770).

3.54.6.1 Previous Investigations for SWMU 16-029(v)

No previous investigation has been conducted at this site.

3.54.6.2 Analytical Results for SWMU 16-029(v)

No decision-level data are available at this site.

3.54.7 SWMU 16-034(o)—Potential Soil Contamination Associated with Former Laboratory 16-49

SWMU 16-034(o) is an area of potential soil contamination at TA-16 associated with former HE laboratory building 16-49 (Plate 6). The building was a wood-frame structure with a concrete floor. A wide range of chemicals were used in the laboratory. Building 16-49 was constructed in 1944 and destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-394).

3.54.7.1 Previous Investigations for SWMU 16-034(o)

No previous investigation has been conducted at this site.

3.54.7.2 Analytical Results for SWMU 16-034(o)

No decision-level data are available at this site.

3.55 Consolidated Unit 16-029(y)-99

Consolidated Unit 16-029(y)-99 consists of an area of potential soil contamination associated with former HE casting building 16-38 [SWMU 16-025(t)] and the building's associated sumps [SWMU 16-029(y)] (Figure 3.55-1). Building 16-38 was used for HE milling, machining, and experimental casting.

3.55.1 SWMU 16-025(t)—Potential Soil Contamination Associated with Former HE Equipment Casting Building 16-38

SWMU 16-025(t) is an area of potential soil contamination at TA-16 associated with former HE equipment casting building 16-38 (Figure 3.55-1). Building 16-38, located approximately 430 ft northeast of building 16-460, was a large rectangular building, divided into four sections with dimensions of $32 \times 30 \times 12$ ft, $24 \times 10 \times 9$ ft, $15 \times 10 \times 10$ ft, and $15 \times 10 \times 12$ ft. The building was a wood-frame structure with a concrete foundation and concrete floor. The building was constructed in 1944 and destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 4-12).

3.55.1.1 Previous Investigations for SWMU 16-025(t)

No previous investigation has been conducted at this site.

3.55.1.2 Analytical Results for SWMU 16-025(t)

No decision-level data are available at this site.

3.55.2 SWMU 16-029(y)—Sumps (former) and Outfall

SWMU 16-029(y) consists of three former sumps and an outfall at TA-16 that served former HE equipment casting building 16-38 (Figure 3.55-1). Two of the sumps were located on the exterior southeast side of the building. Each of these sumps received effluent from its own drainline. The drainlines exited building 16-38 on its southwest side. The sumps discharged to a secondary sump located approximately 50 ft south of building 16-38. The secondary sump drainline discharged northwest of building 16-69. All three sumps were removed in 1966 (LANL 1994, 039440, pp. 5-389–5-390).

3.55.2.1 Previous Investigations for SWMU 16-029(y)

No previous investigation has been conducted at this site.

3.55.2.2 Analytical Results for SWMU 16-029(y)

No decision-level data are available at this site.

3.56 Consolidated Unit 16-029(z)-99

Consolidated Unit 16-029(y)-99 consists of the following 14 SWMUs and AOCs (Plate 9):

- former septic system [SWMU 16-005(c)] that served former building 16-41;
- former incinerator (AOC 16-011);
- former incinerator [AOC 16-023(b)];
- potential soil contamination associated with former HE processing building 16-44 [SWMU 16-025(p)];
- potential soil contamination associated with former HE processing building 16-45 [SWMU 16-025(q)];
- potential soil contamination associated with former rest house 16-46 [SWMU 16-025(r)];
- potential soil contamination associated with former radium source building 16-48 [SWMU 16-025(s)];
- potential soil contamination associated with former HE processing building 16-42 [SWMU 16-025(u)];
- potential soil contamination associated with former HE processing building 16-81 [SWMU 16-025(v)];
- outfall [SWMU 16-026(w)] from former building 16-45;
- former sumps [SWMU 16-029(z)] that served former buildings 16-42, 16-43, 16-44, and 16-45;
- sumps (former) and outfall [SWMU 16-032(a)] served former buildings 16-42, 16-43, 16-44, and 16-45;

- potential soil contamination associated with former equipment and control building 16-47 [SWMU 16-034(I)]; and
- potential soil contamination associated with former building 16-41 [SWMU 16-034(p)].

These facilities compose part of the 40s-line in the south-central portion of TA-16. They were connected by enclosed walkways in a single line of buildings. These SWMUs/AOCs are associated with past operations at former buildings 16-42, 16-43, 16-44, and 16-45.

3.56.1 SWMU 16-005(c)—Former Septic System

SWMU 16-005(c) is a former septic system located at TA-16 southeast of former building 16-41 (Plate 9). The septic system served lavatories in building 16-41 and consisted of a septic tank (structure 16-176) and a drainline. The septic tank was constructed of reinforced concrete and measured 8 × 6 × 4 ft (LANL 1990, 007512). The drainline was a 4-in.-diameter cast-iron pipe that discharged on the southwest side of the septic tank. The exact location of the discharge point is not known. The RFI work plan stated that the septic tank discharged to a 4-in.-diameter VCP drainline leading to a drain field (LANL 1994, 039440, pp. 5-313–5-314). However, archival research did not identify a drain field associated with the septic system. The septic system operated from approximately 1944 to the early 1950s (LANL 1994, 039440, pp. 5-313–5-314).

3.56.1.1 Previous Investigations for SWMU 16-005(c)

No previous investigation has been conducted at this site.

3.56.1.2 Analytical Results for SWMU 16-005(c)

No decision-level data are available at this site.

3.56.2 AOC 16-011—Former Incinerator

AOC 16-011 is a former incinerator (structure 16-412) at TA-16 that was built on the concrete foundation above the basement of former building 16-41 (Plate 9). The incinerator measured $18 \times 14.5 \times 18$ ft and was covered with a heavy mesh cage. It was used for burning paper and cloth that may have been contaminated with HE. The incinerator was built in 1962. The incinerator and its steel cage, as well as metal debris, ash, and soil, were removed in 1995 (LANL 1996, 054400).

3.56.2.1 Previous Investigations for AOC 16-011

A VCA was conducted at AOC 16-011 in 1995 and results were documented in the VCA completion report (LANL 1995, 049989, pp. 1–4). The purpose of the VCA was to dismantle and dispose of the metal incinerator cage and remaining ash and soil debris. Two composite samples were collected from five locations at cracks and holes in the floor. Samples were field-screened for HE and radioactivity. Neither sample showed any detects for HE and background radioactivity. Composite samples were analyzed for TAL metals, SVOCs, and VOCs. Results show that lead was detected above the RCRA land-disposal restriction for lead. Organic chemicals were not detected. Confirmation samples were not collected because all the soil, ash, and metal debris were removed from the basement foundation and the basement floor was intact (LANL 1995, 049989, p. 2).

3.56.2.2 Analytical Results for AOC 16-011

No decision-level data are available at this site.

3.56.3 AOC 16-023(b)—Former Incinerator

AOC 16-023(b) is a former incinerator (structure 16-403) at TA-16 located on the exterior west side of former building 16-43 (Plate 9). The incinerator measured $10 \times 9 \times 17$ ft and was used to burn paper and cloth that may have been contaminated with HE. The incinerator was built in 1961 and was used for approximately one year, at which time another incinerator (AOC 16-011) was built as its replacement. The incinerator was removed in 1966 or 1967 (LANL 1994, 039440, p. 5-354).

3.56.3.1 Previous Investigations for AOC 16-023(b)

No previous investigation has been conducted at this site.

3.56.3.2 Analytical Results for AOC 16-023(b)

No decision-level data are available at this site.

3.56.4 SWMU 16-025(p)—Potential Soil Contamination Associated with Former HE Processing Building 16-44

SWMU 16-025(p) is an area of potential soil contamination at TA-16 associated with former HE processing building 16-44 (Plate 9). Building 16-44, located approximately 200 ft south of building 16-332, was a 60 × 20 ft wood-frame structure with a wood floor supported by pillars. Floor troughs within the building discharged HE-contaminated liquid wastes to sumps [SWMU 16-029(z)]. Building 16-44 was used to physically inspect completed charges and sift raw HE materials to remove metallic contaminants. The building operated from approximately 1944 to the early 1950s and was destroyed by intentional burning in 1960 (LANL 1994, 039440, pp. 5-320–5-322).

3.56.4.1 Previous Investigations for SWMU 16-025(p)

An RFI was conducted at 16-025(p) in 1997. Field screening was conducted to select samples for laboratory analyses. Four samples from three locations were submitted for laboratory analyses of TAL metals, HE, and SVOCs.

3.56.4.2 Analytical Results for SWMU 16-025(p)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.56-1-3.56-3. The samples were collected from depth intervals ranging from 0-2 ft bgs. The results of the analyses of samples collected during the 1997 RFI are as follows.

- Copper, lead, and zinc were detected above BVs (Plate 10).
- PAHs were detected (Plate 11).
- Explosives compounds were not detected.

3.56.5 SWMU 16-025(q)—Potential Soil Contamination Associated with Former HE Processing Building 16-45

SWMU 16-025(q) is an area of potential soil contamination at TA-16 associated with former HE processing building 16-45 (Plate 9). Building 16-45, located approximately 300 ft southeast of building 16-332, was a 60 × 20 ft wood-frame structure with a wood floor supported by pillars. Floor troughs within the building discharged HE-contaminated liquid wastes to sumps [SWMU 16-029(z)]. Building 16-45 was used for x-ray examination of HE lenses and it contained lead shielding and a darkroom. The darkroom had two sinks and one floor drain. Building 16-45 operated from approximately 1944 to the early 1950s and was destroyed by intentional burning in 1960 (LANL 1994, 039440, pp. 5-320–5-322).

3.56.5.1 Previous Investigations for SWMU 16-025(q)

An RFI was conducted at 16-025(q) in 1997. Field screening was conducted to select samples for laboratory analyses. Three samples from three locations were submitted for laboratory analyses of metals, total cyanide, HE, and SVOCs; however, not all samples were analyzed for all suites.

3.56.5.2 Analytical Results for SWMU 16-025(q)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.56-4–3.56-6. The samples were collected from depth intervals ranging from 0–1 ft bgs. The results of the analyses of samples collected during the 1997 RFI are as follows.

- Copper, lead, silver, and zinc were detected above BVs (Plate 10).
- PAHs were detected (Plate 11).
- Explosives compounds were not detected.

3.56.6 SWMU 16-025(r)—Potential Soil Contamination Associated with Former Rest House 16-46

SWMU 16-025(r) is an area of potential soil contamination at TA-16 associated with a former rest house (building 16-46) (Plate 9). Building 16-46, located approximately 200 ft southeast of building 16-332, was a 60 × 20 ft wood-frame structure with a wood floor supported by pillars. Floor troughs within the building discharged HE-contaminated liquid wastes to two sumps located on the exterior southwest side of the building. Building 16-46 was used to temporarily store HE product awaiting radiography in building 16-45. The rest house operated from 1944 to the early 1950s and was destroyed by intentional burning in 1960 (LANL 1994, 039440, pp. 5-320–5-322).

3.56.6.1 Previous Investigations for SWMU 16-025(r)

No previous investigation has been conducted at this site.

3.56.6.2 Analytical Results for SWMU 16-025(r)

No decision-level data are available at this site.

3.56.7 SWMU 16-025(s)—Potential Soil Contamination Associated with Former Radium Source Building 16-48

SWMU 16-025(s) is an area of potential soil contamination at TA-16 associated with former radium source building 16-48 (Plate 9). Building 16-48, located approximately 370 ft south of building 16-332, was a $20 \times 20 \times 14$ ft wood-frame structure with a concrete floor. A radium source pit was contained in the floor. Building 16-48 operated from approximately 1944 to the early 1950s and was destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-359).

3.56.7.1 Previous Investigations for SWMU 16-025(s)

An RFI was conducted at 16-025(s) in 1997. Field screening was conducted to select samples for laboratory analyses. One sample was submitted for laboratory analyses of TAL metals, HE, SVOCs, gamma-emitting radionuclides, isotopic radium, and strontium-90.

3.56.7.2 Analytical Results for SWMU 16-025(s)

The samples collected, analyses requested, and decision-level analytical data from the 1997 investigation are presented in Tables 3.56-7 and 3.56-8. The samples were collected from a depth interval of 0–1 ft bgs. The results of the analyses of the sample collected during the 1997 investigation are as follows.

- Cobalt and uranium were detected above BVs (Plate 10).
- Explosives compounds and SVOCs were not detected.
- No radionuclides were detected or detected above BVs/FVs.

3.56.8 SWMU 16-025(u)—Potential Soil Contamination Associated with Former HE Processing Building 16-42

SWMU 16-25(u) is an area of potential soil contamination at TA-16 associated with former HE processing building 16-42 (Plate 9). Building 16-42, located approximately 120 ft southwest of building 16-332, was a 90 x 40 ft wood-frame structure with a concrete floor. Floor troughs within the building discharged HE-contaminated liquid wastes to sumps [SWMU 16-029(z)]. Building 16-42 also contained a partial basement for utility service. In 1949 a control room was added on the east side, and a New HE-casting kettle room was added on the west side. Building 16-42 operated from 1944 to the early 1950s and was destroyed by intentional burning in 1960 (LANL 1994, 039440, pp. 5-345–5-346).

3.56.8.1 Previous Investigations for SWMU 16-025(u)

No previous investigation has been conducted at this site.

3.56.8.2 Analytical Results for SWMU 16-025(u)

No decision-level data are available at this site.
3.56.9 SWMU 16-025(v)—Potential Soil Contamination Associated with Former HE Processing Building 16-43

SWMU 16-025(v) is an area of potential soil contamination at TA-16 associated with former HE processing building 16-43 (Plate 9). Building 16-43, located approximately 100 ft south of building 16-332, was a 20 x 60 x 14 ft structure with two additions that measured 5 x 20 ft and 5 x 16 ft. Building 16-43 was a wood-frame structure with a wood floor. The building had a cement partition in its north corner that was used as a blast shield for the building's machine tools. Floor troughs within the building discharged HE-contaminated liquid wastes to a sump [SWMU 16-029(z)]. Building 16-43 operated from 1944 to the early 1950s and was destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-321).

3.56.9.1 Previous Investigations for SWMU 16-025(v)

No previous investigation has been conducted at this site.

3.56.9.2 Analytical Results for SWMU 16-025(v)

No decision-level data are available at this site.

3.56.10 SWMU 16-026(w)-Outfall

SWMU 16-026(w) is an outfall at TA-16 that served the darkroom in former building 16-45 (Plate 9). Engineering drawing ENG C-5645 shows a drainline from the darkroom exiting the building from its southeast side and shows that the drainline discharges to ground at a screened outfall (LASL 1953, 109943). However, the exact discharge point is not known. Building 16-45 operated from 1944 to the early 1950s and was destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-347).

3.56.10.1 Previous Investigations for SWMU 16-026(w)

No previous investigation has been conducted at this site.

3.56.10.2 Analytical Results for SWMU 16-026(w)

No decision-level data are available at this site.

3.56.11 SWMU 16-029(z)—Sumps (former)

SWMU 16-029(z) consists of 11 former primary sumps at TA-16 that served former buildings 16-42, 16-43, 16-44, and 16-45 (Plate 9). Building 16-42 discharged to three primary sumps on the exterior northwest, southwest, and southeast sides of the building, which discharged to a secondary sump. Building 16-43 discharged to a single primary sump on its exterior southwest side, which discharged to a secondary sump. Building 16-44 discharged to two primary sumps on its exterior southwest side, which discharged to a secondary sump. Building 16-45 discharged to two primary sumps on its exterior southwest side, which discharged to a secondary sump. Building 16-45 discharged to two primary sumps on its exterior southwest side, which discharged to a secondary sump. Building 16-45 discharged to two primary sumps on its exterior southwest side, which discharged to a secondary sump [SWMU 16-032(a)]. Each of the four secondary sumps at all four buildings discharged to a common drainline and outfall [SWMU 16-032(a)]. The sumps operated from approximately 1944 to the early 1950s (LANL 1994, 039440, p. 5-349). The sumps were removed from 1966 to 1968 with demolition of building foundations and drainlines, documented by site photos (LANL 1996, 055016). The sumps are visible in a 1965 aerial photograph (LASL 1965, 016396), but are no longer visible in a 1977 aerial photograph (LASL 1977, 017770).

3.56.11.1 Previous Investigations for SWMU 16-029(z)

No previous investigation has been conducted at this site.

3.54.11.2 Analytical Results for SWMU 16-029(z)

No decision-level data are available at this site.

3.56.12 SWMU 16-032(a)—Sumps (former) and Outfall

SWMU 16-032(a) consists of one former secondary sump and an outfall at TA-16 that served former buildings 16-42, 16-43, 16-44, and 16-45 (Plate 9). The sumps were located approximately 60 ft southwest of the buildings 16-45 and discharged to a common drainline that discharged in the ditch along V-Site Road. The sumps operated from 1944 to the early 1950s (LANL 1994, 039440, pp. 5-320–5-321). The date the sumps and drainlines were removed is not known. However, the sumps are visible in a 1965 aerial photograph (LASL 1965, 016396), but are no longer visible in a 1977 aerial photograph (LASL 1977, 017770).

3.56.12.1 Previous Investigations for SWMU 16-032(a)

No previous investigation has been conducted at this site.

3.56.12.2 Analytical Results for SWMU 16-032(a)

No decision-level data are available at this site.

3.56.13 SWMU 16-034(I)—Potential Soil Contamination Associated with Former Equipment and Control Building 16-47

SWMU 16-034(I) is an area of potential soil contamination at TA-16 associated with former HE equipment and control building 16-47 (Plate 9). Building 16-47 was located approximately 10 ft south of former building 16-46. The building was an $11 \times 11 \times 8.5$ ft wood-frame structure with a concrete foundation and floor. Building 16-47 operated from 1944 to the early 1950s and was destroyed by intentional burning in 1960 (LANL 1994, 039440, p. 5-362).

3.56.13.1 Previous Investigations for SWMU 16-034(I)

An RFI was conducted at SWMU 16-034(I) in 1997. Eight soil screening samples were collected from four locations in the building footprint and field-screened for HE and radioactivity. All samples showed background radioactivity. HE was detected in three field-screened samples. The sample with highest screening results of HE was submitted for laboratory analyses of metals, HE, and SVOCs (LANL 1997, 056660.289, pp. 202–207).

3.56.13.2 Analytical Results for SWMU 16-034(I)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.56-9 and 3.56-10. The samples were collected from a depth interval of 0–1 ft bgs. The results of the analyses of samples collected during the 1997 RFI are as follows (LANL 1997, 056660.289, pp. 202–207).

- Copper, lead, and zinc were detected above BVs (Plate 10).
- Explosives compounds and SVOCs were not detected.

3.56.14 SWMU 16-034(p)—Potential Soil Contamination Associated with Former Building 16-41

SWMU 16-034(p) is an area of potential soil contamination at TA-16 associated with former process laboratory building 16-41 (Plate 9). The building was a $30 \times 17 \times 14$ ft wood-frame structure with a full basement and concrete foundation and floor. Building 16-41 was built in 1945 and destroyed by intentional burning in 1960; the building's concrete foundation and basement remained in place. In 1962, a trash incinerator [AOC 16-011] was built on the concrete foundation that overlaid the basement (LANL 1994, 039440, p. 5-373). In 1995, the trash incinerator was removed.

3.56.14.1 Previous Investigations for SWMU 16-034(p)

A VCM was conducted at SWMU 16-034(p) in 1998 and 1999. The purpose of the VCM was to characterize the site and to implement an accelerated cleanup in conjunction with removal activities at the site. These activities consisted of removing and disposing of the concrete foundation of former building 16-41. Approximately 70 yd³ of concrete was broken up and disposed of. Because of the anticipated difficulty of removing the foundation footings, which appeared to have been poured into trenches within the tuff, the footings were left in place. Reinforcing metal and other metal items encountered during removal were placed in a roll-off container for recycling (LANL 1999, 063973, pp. 88–116).

In addition, approximately 20 yd³ of asphalt paving were removed. An exploratory trench was dug perpendicular to the foundation to investigate the extent of fill material used as part of the construction of the basement structure. After the removal of the basement structure, the average depth from the surrounding grade to the bottom of the excavation was 10 ft. The excavation was backfilled with clean fill material (LANL 1999, 063973, pp. 88–116).

After the basement floor was removed, 23 screening samples were collected from 22 locations. Samples were field-screened for TAL metals, HE, PAHs, VOCs, and radioactivity. Based on the screening results, a total of 18 samples from 11 locations were submitted for laboratory analyses. Fourteen of the samples were selected based on screening results and were submitted for laboratory analyses of metals, total cyanide, HE, and SVOCs; however, not all samples were analyzed for all suites. After receiving analytical results, three additional samples were collected from deeper depths at previously sampled locations and were submitted for laboratory analyses of metals, total cyanide for laboratory analyses of metals and one was analyzed for SVOCs. To confirm that the fill material was clean, a sample of the fill was collected and submitted for laboratory analyses of metals, total cyanide, HE, SVOCs, VOCs, and gamma-emitting radionuclides (LANL 1999, 063973, pp. 88–116).

NMED requested additional investigation to define the nature and extent of contamination for this site (NMED 2002, 073818).

3.56.14.2 Analytical Results for SWMU 16-034(p)

The samples collected, analyses requested, and decision-level analytical data from the 1998 and 1999 VCM are presented in Tables 3.56-11 and 3.56-13. The samples were collected from depth intervals ranging from 0–12.95 ft bgs. The results of the analyses of samples collected during the 1998 and 1999 VCM are as follows (LANL 1999, 063973, pp. 88–116).

- Antimony, arsenic, barium, cadmium, calcium, cobalt, copper, total cyanide, lead, manganese, mercury, silver, and zinc were detected above BVs (Plate 10).
- Pyrene was detected (Plate 11).
- Explosives compounds and VOCs were not detected.
- Radionuclides were not detected or detected above BVs/FVs.

3.57 SWMU 16-031(a)-Outfall

SWMU 16-031(a) is an outfall that served a former cooling tower (building 16-372) at TA-16 (Figure 3.57-1). The outfall discharged approximately 150 ft south of the cooling tower at the edge of Water Canyon. The outfall drainline was a 6-in.-diameter VCP that originated from a drain inside the southeast corner of the cooling tower. The cooling tower served building 16-370, a barium nitrate grinding facility and metal-forming shop (LANL 1995, 057225. p. 5-28-15). The cooling tower was built in 1953 and was burned during the Cerro Grande fire in 2000. The concrete foundation remains in place.

3.57.1 Previous Investigations for SWMU 16-031(a)

Sampling was conducted at SWMU 16-031(a) in 1998. One sample was collected and submitted for laboratory analyses of metals, HE, and SVOCs as recommended by the Surface Water Assessment Team. The purpose was to determine if contamination was present at the site and to determine if BMPs were necessary (LANL 1999, 062685).

3.57.2 Analytical Results for SWMU 16-031(a)

Decision-level analytical data, the sample collected, and the analyses requested from the 1998 investigation are presented in Tables 3.57-1-3.57-3. The sample was collected from a depth interval of 0-0.5 ft bgs. The results of the analyses of the sample collected in 1998 are as follows.

- Cadmium, calcium, copper, lead, uranium, and zinc were detected above BVs (Figure 3.57-2).
- PAHs were detected (Figure 3.57-3).
- Explosives compounds and PCBs were not detected.

3.58 SWMU 16-031(e)—Outfall

SWMU 16-031(e) is an outfall that serves the chlorination station (structure 16-560) at TA-16 (Figure 3.58-1). The outfall is located approximately 40 ft southwest of the chlorination station. The outfall received effluent from a concrete trench, floor drain, and a bench-scale sump within the building. The chlorination station was built in Water Canyon in 1957 and was moved in 1962 to its current site on West Jemez Road near the entrance to TA-16 (LANL 1995, 057225, 6-11–6-12).

3.58.1 Previous Investigations for SWMU 16-031(e)

No other previous investigation has been conducted at this site.

3.58.2 Analytical Results for SWMU 16-031(e)

No decision-level data are available at this site.

3.59 AOC 16-033(a)—Underground Tank (removed)

AOC 16-033(a) is a former 1000-gal. underground diesel-fuel tank (structure number unknown) at TA-16, located northeast of building 16-16 in the S-Site administration area (Figure 3.59-1). The tank was rectangular and attached to a larger cylindrical tank. The tank had a documented release contaminating the soil around the tank. Approximately 15 yd³ of contaminated soil were removed from the site and replaced with clean fill (LANL 1990, 007512, p. 16-033). The excavated soil was taken to TA-54 and the excavation was backfilled with clean soil (LANL 1995, 057225, p. 6-38).

3.59.1 Previous Investigations for AOC 16-033(a)

No other previous investigation has been conducted at this site.

3.59.2 Analytical Results for AOC 16-033(a)

No decision-level data are available at this site.

3.60 AOC 16-033(b)—Underground Tank (removed)

AOC 16-033(b) is a former UST (structure 16-196) that was located at TA-16, southeast of the former service station (building 16-195) (Figure 3.27-1). The tank had a 4000-gal. capacity and was used to store leaded gasoline. UST 16-196 was installed in 1951. In 1952, a second UST (structure 16-197) was installed directly adjacent to UST 16-196. When UST 16–196 was removed in 1987, it was found to have leaked, contaminating the soil surrounding UST 16-197. Contaminated soil was removed from the area surrounding UST 16-197, but the excavation had to be discontinued when soil removal threatened the integrity of UST 16-197. When UST 16-197 was removed in 1990, contaminated scale and soil associated with the releases from UST 16-196 were dislodged from the bottom of the tank. The contaminated soil was removed immediately and remediated under the direction of the NMED UST Bureau in compliance with the UST regulations in effect at the time.

After UST 16-197 was removed, a 10,000-gal. capacity tank (structure 16-1465) was installed at the same location of removed USTs 16-196 and 16-197 (LANL 1995, 057225, pp. 6-39–6-41). During UST 16-1465 tank maintenance activities in 1994, gasoline-contaminated soil associated with UST 16-1465 was found at the location of former USTs 16-196 and 16-197. The contaminated area was remediated under the direction of the NMED UST Bureau in compliance with UST regulations. In 2003, UST 16-1465 was removed under the direction of the NMED UST Bureau.

3.60.1 Previous Investigations for AOC 16-033(b)

The 10,000-gal. tank (structure 16-1465) occupied the space that previously contained UST 16-197 [AOC 16-022(b)] and UST 16-196 [AOC 16-033(b)]. UST 16-1465 leaked in 1994 and the site was sampled and remediated. Six locations were sampled—five on the east side of the service station

(building 16-195) and one on the west side. Samples were collected and analyzed at an on-site laboratory. The analytical results of the samples collected from the locations between building 16-195 and UST 16-1465 showed elevated levels of BTEX at 65 ft bgs (LANL 1995, 057225, pp. 6-40–6-43). NMED requested additional investigation to define the nature and extent of contamination for this site (NMED 1999, 073897).

Following the removal of building 16-195 in February 2003, UST 16-1456 was removed. The tank removal and soil sampling were documented in a TA-16-197 Underground Storage Tank Removal report (Dye 2003, 095409, pp. 1–8). It should be noted that this report incorrectly refers to UST 16-1456 (the 10,000-gal. tank) as UST 16-197. Upon removal, the 10,000-gal. tank appeared in very good condition with no visible evidence of any gasoline release from the dispenser, fuel line, or tank. Soil samples were collected under the former locations of the dispenser and fuel line, and at the west and east ends of UST 16-1456 (Dye 2003, 095409, pp. 1–8).

3.60.2 Analytical Results for AOC 16-033(b)

Sample results are the same as those at AOC 16-022(b), presented in section 3.27.2.

3.61 AOC 16-033(c)—Aboveground Tank (removed)

AOC 16-033(c) is a former 52,000-gal. aboveground fuel oil storage tank (structure 16-29) located at TA-16 (Figure 3.61-1). The 62-ft-long × 12-ft-diameter tank was located approximately 50 ft northeast of cafeteria building 16-16. The tank was installed in 1945 and mounted on concrete saddles. The 1990 SWMU report incorrectly identifies structure 16-29 as a UST (LANL 1990, 007512, p. 16-033). The aboveground tank is clearly visible in 1946 aerial photographs (SNL 1946, 015402; SNL 1946, 015403).

3.61.1 Previous Investigations for AOC 16-033(c)

No other previous investigation has been conducted at this site.

3.61.2 Analytical Results for AOC 16-033(c)

No decision-level data are available at this site.

3.62 AOC 16-033(d) Aboveground Tank (removed)

AOC 16-033(d) is a former aboveground propane tank (structure 16-1140) located at TA-16 (Figure 3.62-1). The tank was located approximately 60 ft west of cafeteria building 16-16. The tank was installed in 1946 and served the cafeteria. The tank was removed in 1956. The 1990 SWMU Report incorrectly identifies the structure as an underground storage tank (LANL 1990, 007512, p. 16-033).

3.62.1 Previous Investigations for AOC 16-033(d)

No other previous investigation has been conducted at this site.

3.62.2 Analytical Results for AOC 16-033(d)

No decision-level data are available at this site.

3.63 AOC 16-033(i)—Underground Storage Tank (removed)

AOC 16-033(i) is a former UST at TA-16, located on the northwest side of the former service station (building 16-195) (Figure 3.63-1). The tank (structure 16-1341) had a 5,000-gal. capacity and was used to store leaded gasoline. The tank was installed in the early 1950s and removed in 1980 (LANL 1990, 007512, p. 16-033).

3.63.1 Previous Investigations for AOC 16-033(i)

No other previous investigation has been conducted at this site.

3.63.2 Analytical Results for AOC 16-033(i)

No decision-level data are available at this site.

3.64 AOC 16-033(j)—Underground Storage Tank (removed)

AOC 16-033(j) is a former UST at TA-16, located northwest of the former service station (building 16-195) (Figure 3.63-1). The tank (structure 16-1342) had a 5,000-gal. capacity and was used to store leaded gasoline. The tank was installed in the early 1950s and was removed in 1980 (LANL 1990, 007512, p. 16-033).

3.64.1 Previous Investigations for AOC 16-033(j)

No other previous investigation has been conducted at this site.

3.64.2 Analytical Results for AOC 16-033(j)

No decision-level data are available at this site.

3.65 AOC 16-033(k)—Underground Storage Tank

AOC 16-033(k) is an inactive UST at TA-16, located immediately south of the chlorination station 16-560 (Figure 3.58-1). The steel tank had a 200-gal. capacity and was used to store gasoline. The tank was installed in 1952 and served an emergency generator system. It is not known when the tank was taken out of service (LANL 1996, 055066). The tank was discovered during construction activities in 1996 and was given the SWMU number 16-033(k) (LANL 1996, 055066).

3.65.1 Previous Investigations for AOC 16-033(k)

No previous investigations have been conducted at this site.

3.65.2 Analytical Results for AOC 16-033(k)

No decision-level data are available at this site.

3.66 AOC C-16-019—Former Building 16-19

AOC C-16-019 is former pump house (building 16-19) at TA-16 located approximately 50 ft northeast of cafeteria building 16-16 (Figure 3.61-1). The pump house was a 10 x 10 ft wooden structure. The pump

house was built in 1945 and housed a pump that pumped fuel oil from an aboveground storage tank 16-29 [AOC 16-033(c)] to the steam plant building 16-7. The pump house was removed in 1956 (LANL 1995, 057225, pp. 6-33–6-34).

3.66.1 Previous Investigations for AOC C-16-019

No previous investigation has been conducted at this site.

3.66.2 Analytical Results for AOC C-16-019

No decision-level data are available at this site.

3.67 AOC C-16-020—Former Building 16-22

AOC C-16-020 is a former office building 16-22 located at TA-16 approximately 50 ft south of cafeteria building 16-16 (Figure 3.67-1). The building was a 70 ft x 20 ft x 9 ft wooden structure. It was constructed in 1944 and moved to the Los Alamos ice rink in 1961 (LANL 1995, 057225, p. 6-23).

3.67.1 Previous Investigations for AOC C-16-020

No previous investigation has been conducted at this site.

3.67.2 Analytical Results for AOC C-16-020

No decision-level data are available at this site.

3.68 AOC C-16-028—Former Building 16-5

AOC C-16-028 is former instrument shop (building 16-5) located at TA-16 approximately 50 ft south of a former storage building 16-10 (Figure 3.44-1). The shop was a $40 \times 25 \times 9$ ft wooden structure where instruments and gauges were repaired. It was constructed in 1945 and removed in 1956 (LANL 1994, 039440, p. 5-425).

3.68.1 Previous Investigations for AOC C-16-028

No previous investigation has been conducted at this site.

3.68.2 Analytical Results for AOC C-16-028

No decision-level data are available at this site.

3.69 AOC C-16-030—Former Building 16-181

AOC C-16-030 is a former tank housing (structure 16-181) located at TA-16 approximately 60 ft northeast of building 16-7 (Figure 3.69-1). The tank housing was a 9-ft-long × 5-ft-wide concrete structure that was buried 1.5 ft in the soil. The structure was constructed in 1948 and removed in 1956 (LANL 1994, 039440, p. 5-425).

3.69.1 Previous Investigations for AOC C-16-030

In September 2003, diesel-contaminated soil was discovered near building 16-7 while utilities to the building were being disconnected before removing the building. Initial and secondary characterization work was completed in October 2003 and May 2007, respectively. In 2003, two samples were collected and submitted for laboratory analysis of metals, HE, SVOCs, VOCs, and TPH-DRO. In 2007, 15 samples were collected and submitted for laboratory analysis of TAL metals and TPH-DRO. One of these samples was also analyzed for PCBs. Based on the results, the diesel-contaminated soil is associated with AOC C-16-030 and AOC C-16-031 (LANL 2007, 109805).

3.69.2 Analytical Results for AOC C-16-030

The samples collected, analyses requested, and decision-level analytical data from the 2003 and 2007 investigation are presented in Tables 3.69-1–3.69-3. The samples were collected from depth intervals ranging from 6–31.5 ft bgs. The results of the analyses of samples collected in 2003 and 2007 are as follows.

- Aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, lead, magnesium, mercury, nickel, selenium, vanadium, and zinc were detected above BVs (Figure 3.69-2).
- SVOCs and TPH-DRO were detected (Figure 3.69-3).
- Explosives compounds, PCBs, and VOCs were not detected.

3.70 AOC C-16-031—Former Building 16-182

AOC C-16-031 is a former diesel unit (building 16-182) located at TA-16 approximately 40 ft northeast of former building 16-7 (Figure 3.69-1). The building was a 14-ft-long × 13-ft-wide wooden structure. The building was constructed in 1944 and removed in 1956 (LANL 1994, 039440, p. 5-425).

3.70.1 Previous Investigations for AOC C-16-031

In September 2003, diesel-contaminated soil was discovered near building 16-7 while utilities to the building were being disconnected before removing the building. Initial and secondary characterization work was completed in October 2003 and May 2007, respectively (LANL 2007, 109805). The investigation activities are described in section 3.69.1.

3.70.2 Analytical Results for AOC C-16-031

Sample results are the same as those at AOC C-16-030, presented in section 3.69.2.

3.71 AOC C-16-034—Aboveground Tank (removed)

AOC C-16-034 is a former 50,000-gal. aboveground water tank (structure 16-1130) located near the main entrance to TA-16 (Figure 3.71-1). The 15-ft-high × 23-ft-diameter tank was located along Jemez Road near the current location of a 1,000,000-gal. water tank (structure 16-171). Tank 16-1130 was connected to the TA-16 water supply by pump station 16-20. The water tank was constructed in 1944 and removed in 1949 (LANL 1998, 059685, p. 6-20).

3.71.1 Previous Investigations for AOC C-16-034

No previous investigation has been conducted at this site.

3.71.2 Analytical Results for AOC C-16-034

No decision-level data are available at this site.

3.72 AOC C-16-035—Aboveground Tank (removed)

AOC C-16-035 is a former 50,000-gal. water tank (structure 16-1131) located near the main entrance to TA-16 (Figure 3.71-1). The 15-ft-high × 23.3-ft-diameter tank was located along Jemez Road near the current location of a 1,000,000-gal. water tank (structure 16-171). Tank 16-1131 was connected to the TA-16 water supply by pump station 16-20. The water tank was constructed in 1944 and removed in 1949 (LANL 1998, 059685, p. 6-20).

3.72.1 Previous Investigations for AOC C-16-035

No previous investigation has been conducted at this site.

3.72.2 Analytical Results for AOC C-16-035

No decision-level data are available at this site.

3.73 AOC C-16-046—Former Manhole

AOC C-16-046 is a former steam manhole (structure 16-1090) located near building 16-460 at TA-16 (Figure 3.4-1). The manhole was installed in 1965. It was constructed of 5-ft-diameter corrugated metal pipe and was 9-ft deep with a gravel bottom. The manhole contained pipes that carried distilled stream vapor and cool condensate water to and from the steam plant (LANL 1994, 039440, p. 6-25). The exact location of the manhole is not known. The manhole was removed in 1970.

3.73.1 Previous Investigations for AOC C-16-046

No previous investigation has been conducted at this site.

3.73.2 Analytical Results for AOC C-16-046

No decision-level data are available at this site.

3.74 AOC C-16-047—Former Oil Switch

AOC C-16-047 is a former oil switch (structure 16-1101) located at TA-16 (Figure 3.74-1), southeast of the intersection of K-Site and HE roads. The switch, installed in 1952, was mounted on a 7 × 7 ft concrete pad surrounded by a metal fence. The oil switch was one of three decommissioned 200-gal. to 400-gal. capacity oil switches used to control electrical power for several buildings at TA-16. Mineral oil was the common lubricant used in oil switches. The switch was removed in 1967 (LANL 1995, 057225, p. 6-31).

3.74.1 Previous Investigations for AOC C-16-047

No previous investigation has been conducted at this site.

3.74.2 Analytical Results for AOC C-16-047

No decision-level data are available at this site.

3.75 AOC C-16-058—Former Oil Switch

AOC C-16-058 is a former oil switch (structure 16-1102) located at TA-16 (Figure 3.74-1). The switch, installed in 1952, was mounted on an 8×6 ft concrete pad surrounded by a metal fence. The oil switch was one of a group of three decommissioned 200-gal. to 400-gal. capacity oil switches used to control electrical power for several buildings at TA-16. Mineral oil was the common lubricant used in oil switches. The switch was removed in 1967 (LANL 1995, 057225, p. 6-31).

3.75.1 Previous Investigations for AOC C-16-058

No previous investigation has been conducted at this site.

3.75.2 Analytical Results for AOC C-16-058

No decision-level data are available at this site.

3.76 AOC C-16-069—Former Trailer 16-87

AOC C-16-069 is a former trailer (structure 16-87) that was located at TA-16 approximately 100 ft northeast of former building 16-50 (Figure 3.76-1). The 8 × 7 ft trailer was installed in 1945 and removed in 1957 (LANL 1994, 067368, p. 15).

3.76.1 Previous Investigations for AOC C-16-069

An RFI was conducted at AOC C-16-069 in 1997. Field screening was conducted to select samples for laboratory analyses. One sample was submitted for laboratory analyses of HE and SVOCs.

3.76.2 Analytical Results for AOC C-16-069

The sample collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 3.76-1 and 3.76-2. The sample was collected from a depth interval of 0–1 ft bgs. The results of the analyses of the sample collected during the 1997 RFI are as follows.

- Pyrene was detected (Figure 3.76-2).
- Explosives compounds were not detected.

3.77 AOC C-16-071—One-Time Spill

AOC C-16-071 is the location of a one-time-spill of hydraulic fluid that occurred in an equipment pit located in bay 1 of building 16-430 (Figure 3.5-1). A release of approximately 500 gal. of hydraulic fluid occurred on June 6, 1986. The spill occurred when the hydraulic system was turned on and

malfunctioned. The malfunction caused a large amount of fluid to drain from the hydraulic press. The hydraulic fluid flowed along the floor of the pit into the pit's drain for approximately 1.5 hours until the drain could be temporarily plugged to contain the spill. The drain outlet pipe discharged onto a hillside above Water Canyon. The hillside was bermed and trenched to prevent the hydraulic fluid from reaching the canyon. The incident was reported immediately after the release occurred. After the spill was contained, the pit floor was cleaned. The hydraulic fluid used in the press was water-based Texaco Safety Oil, #46, an ethylene glycol/water mixture. Analysis of the fluid demonstrated that no PCBs or HE were present in the fluid (Nylander 1986, 052964.602, pp. 1207–1209). A site visit in 1994 showed the rock surface at the outfall had been chipped off, presumably to remove residual oil (LANL 1995, 057225, pp. 6-46–6-47).

The AOC C-16-071 spill discharged through the same drain and to the same area as did the operational release of hydraulic fluid associated with AOC 16-021(b). Because the discharge points of AOC 16-021(b) and AOC C-16-071 are identical, a single investigation will characterize both AOCs.

3.77.1 Previous Investigations for AOC C-16-071

Not applicable.

3.77.2 Analytical Results for AOC C-16-071

Not applicable.

3.78 AOC C-16-073—Underground Storage Tank

AOC C-16-073 is a UST (structure number unknown) at TA-16, located 6 ft from the southwest wall of building 16-200 (Figure 3.78-1). The tank was installed in 1952 and stored gasoline to serve an emergency generator located inside the basement equipment room of building 16-200. The emergency generator power source was subsequently changed to natural gas, and it is likely that the tank was decommissioned when the conversion occurred. It is not known if the tank has been removed or if it remains in place (LANL 1998, 057225, p. 5-27-3).

3.78.1 Previous Investigations for AOC C-16-073

No previous investigation has been conducted at this site.

3.78.2 Analytical Results for AOC C-16-073

No decision-level data are available at this site.

3.79 AOC C-16-076—HE Magazine Area A

AOC C-16-076 consists of HE Magazine Area A (TA-28), which currently lies within the boundary of TA-16 (Figure 3.79-1). Area A contained five former HE magazines (structures 28-1 through 28-5) surrounded by earthen berms. The magazines, constructed sometime between 1944 and 1947, were used to store explosives (LANL 1988, 035580). The magazines have been removed, but the berms that surrounded the structures remain. This is a New AOC, designated in 2010 (NMED 2010, 109033).

3.79.1 Previous Investigations for AOC C-16-076

No previous investigation has been conducted at this site.

3.79.2 Analytical Results for AOC C-16-076

No decision-level data are available at this site.

3.80 AOC C-16-077—HE Magazine Area B

AOC C-16-077 consists of HE Magazine Area B (former TA-29), which currently lies within the boundary of TA-16 (Figure 3.80-1). Area B contained two former HE magazines (structures 29-1 and 29-2) used to store explosives. The date the magazines were constructed is unknown; however, they were decommissioned by 1959 (LANL 1994, 039440, pp. 2-4–2-7). This is a New AOC, designated in 2010 (NMED 2010, 109033).

3.80.1 Previous Investigations for AOC C-16-077

No previous investigation has been conducted at this site.

3.80.2 Analytical Results for AOC C-16-077

No decision-level data are available at this site.

4.0 SITES ASSOCIATED WITH TA-37

Only one site is associated with TA-37: SWMU 37-001, a septic system, has been approved for NFA (EPA 2005, 088464). The site is listed in Table 1.1-1.

5.0 REFERENCES AND MAP DATA SOURCES

5.1 References

The following list includes all documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and ER ID. This information is also included in text citations. ER IDs are assigned by the Environmental Programs Directorate's Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the master reference set.

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

Bailey, M., March 9, 1993. "Subcontract No. 9-X86-Y7575-1, Closure Report for Non-Reportable PCB Release at TA-16, Structure 563, Station 9," Johnson Controls letter (JENV.93-202) to R. Morales (LANL EM-8) from M. Bailey (JCI/ENV), Los Alamos, New Mexico. (Bailey 1993, 052964.489)

- Dye, A., February 2003. "TA-16-197 Underground Storage Tank Removal 2/12/03," Los Alamos National Laboratory document LA-UR-03-2421, Los Alamos, New Mexico. (Dye 2003, 095409)
- EPA (U.S. Environmental Protection Agency), August 16, 1995. "NPDES Permit No. NM0028355-University of Calif. and Department of Energy "U.S. Environmental Protection Agency letter to L. Kirkman (DOE-LAAO) from J.V. Ferguson (EPA Region 6), Dallas, Texas. (EPA 1995, 109574)
- EPA (U.S. Environmental Protection Agency), December 6, 1995. "NPDES Permit No. NM0028355-University of Calif, and Department of Energy, Deletion of Outfalls," U.S. Environmental Protection Agency letter to L. Kirkman (DOE-LAAO) from J. Fontenot (EPA Region 6), Dallas, Texas. (EPA 1995, 109543)
- EPA (U.S. Environmental Protection Agency), September 19, 1997. "NPDES Permit No. NM0028355-University of California and Dept. of Energy (Los Alamos National Laboratory)," U.S.
 Environmental Protection Agency letter to G.T. Todd (DOE-LAAO) from J. Fontenot (EPA Region 6), Dallas, Texas. (EPA 1997, 109528)
- EPA (U.S. Environmental Protection Agency), January 14, 1998. "NPDES Permit No. NM0028355-University of California and Dept. of Energy (Los Alamos National Laboratory)," U.S.
 Environmental Protection Agency letter to G.T. Todd (DOE-LAAO) from J. Fontenot (EPA Region 6), Dallas, Texas. (EPA 1998, 109568)
- EPA (U.S. Environmental Protection Agency), March 10, 1998. "NPDES Permit No. NM0028355-University of Calif. and Dept. of Energy (Los Alamos National Laboratory)," U.S. Environmental Protection Agency letter to G.T. Todd (DOE-LAAO) from J.V. Ferguson (EPA Region 6), Dallas, Texas. (EPA 1998, 109792)
- EPA (U.S. Environmental Protection Agency), January 21, 2005. "EPA's Prior Decisions on SWMU/AOC Sites at Los Alamos National Laboratory (LANL)," U.S. Environmental Protection Agency letter to J. Bearzi (NMED-HRMB) from L.F. King (EPA Federal Facilities Section Chief), Dallas, Texas. (EPA 2005, 088464)
- EPA (U.S. Environmental Protection Agency), December 2007. "EPA Region 6 Human Health Medium-Specific Screening Levels," U.S. EPA Region 6, Dallas, Texas. (EPA 2007, 099314)
- Griffin, J.H. (Los Alamos National Laboratory), June 29, 1992. "TA-16 (S-Site) Operations, R.J. Daly Telecon," Los Alamos National Laboratory memorandum (CLS-ER-JHG-92-005) to W.B. Martin (CLS-DO) from J.H. Griffin (CLS-DO), Los Alamos, New Mexico. (LANL 1992, 109748)
- LANL (Los Alamos National Laboratory), 1988. "Magazines 28.001 Active," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 1988, 035580)
- LANL (Los Alamos National Laboratory), November 1990. "Solid Waste Management Units Report," Vol. I of IV (TA-0 through TA-9), Los Alamos National Laboratory document LA-UR-90-3400, Los Alamos, New Mexico. (LANL 1990, 007511)
- LANL (Los Alamos National Laboratory), November 1990. "Solid Waste Management Units Report," Vol. II of IV (TA-10 through TA-25), Los Alamos National Laboratory document LA-UR-90-3400, Los Alamos, New Mexico. (LANL 1990, 007512)

- LANL (Los Alamos National Laboratory), November 1990. "Solid Waste Management Units Report," Vol. IV of IV (TA-51 through TA-74), Los Alamos National Laboratory document LA-UR-90-3400, Los Alamos, New Mexico. (LANL 1990, 007514)
- LANL (Los Alamos National Laboratory), September 12, 1994. "Soil Sampling Results on Underground Storage Tank TA-16-205 Site Investigation," Los Alamos National Laboratory letter (ESH-8/HSWS-94-0289) to A. Moreland (NMED-RAS) from D. Garvey (EP), Los Alamos, New Mexico. (LANL 1992, 042497)
- LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1082," Los Alamos National Laboratory document LA-UR-93-1196, Los Alamos, New Mexico. (LANL 1993, 020948)
- LANL (Los Alamos National Laboratory), August 2, 1993. "Los Alamos National Laboratory, NPDES Permit No. NM0028355, Deletion of Outfalls, Comments on New NPDES Permit," Los Alamos National Laboratory letter (ADO:93-621-U) to J.L. Bellows (DOE-LAAO) from A.J. Tiedman (LANL), Los Alamos, New Mexico. (LANL 1993, 109580)
- LANL (Los Alamos National Laboratory), November 4, 1993. "Thirty Day Notification Report to NMED UST Bureau," Los Alamos National Laboratory letter (EM-DO:93-1149) to A. Moreland (NMED Underground Storage Tank Bureau) from T.C. Gunderson (H-8), Los Alamos, New Mexico. (LANL 1993, 033313)
- LANL (Los Alamos National Laboratory), July 1994. "RFI Work Plan for Operable Unit 1082, Addendum I," Los Alamos National Laboratory document LA-UR-94-1580, Los Alamos, New Mexico. (LANL 1994, 039440)
- LANL (Los Alamos National Laboratory), 1994. "Los Alamos National Laboratory Structure History Book, TA-16 S-Site, OU 1082 RCRA Corrective Actions," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 1994, 067368)
- LANL (Los Alamos National Laboratory), July 1995. "RFI Work Plan for Operable Unit 1082, Addendum 2," Los Alamos National Laboratory document LA-UR-95-1038, Los Alamos, New Mexico. (LANL 1995, 057225)
- LANL (Los Alamos National Laboratory), September 28, 1995. "Accelerated Cleanup Final Reports [and attachments]," Los Alamos National Laboratory letter (EM/ER:95-536) to T. Taylor (DOE-LAAO) from J. Jansen (ER Project), Los Alamos, New Mexico. (LANL 1995, 049989)
- LANL (Los Alamos National Laboratory), January 1996. "Voluntary Corrective Action Completion Report for Potential Release Site 16-016(f), Former Surface Disposal Area, Revision 1," Los Alamos National Laboratory document LA-UR-96-190, Los Alamos, New Mexico. (LANL 1996, 053776)
- LANL (Los Alamos National Laboratory), January 1996. "Voluntary Corrective Action Completion Report for Potential Release Site 16-011, Former Incinerator, Revision 1," Los Alamos National Laboratory document LA-UR-96-188, Los Alamos, New Mexico. (LANL 1996, 054400)

- LANL (Los Alamos National Laboratory), September 1996. "Voluntary Corrective Action Plan for Solid Waste Management Unit 11-001(c)," Los Alamos National Laboratory document LA-UR-96-3000, Los Alamos, New Mexico. (LANL 1996, 055016)
- LANL (Los Alamos National Laboratory), September 1996. "Voluntary Corrective Action Report for Solid Waste Management Unit 11-001(c)," Los Alamos National Laboratory document LA-UR-96-3349, Los Alamos, New Mexico. (LANL 1996, 062677)
- LANL (Los Alamos National Laboratory), October 2, 1996. "Notification of a SWMU at TA-16," Los Alamos National Laboratory letter (EM/ER:96-531) to B. Garcia (NMED-HRMB) from J. Jansen (LANL ER Project Manager) and T. Taylor (DOE-LAAO), Los Alamos, New Mexico. (LANL 1996, 055066)
- LANL (Los Alamos National Laboratory), May 21, 1997. "Notification of Institutional Interim Measure at TA-16-450, PRS 16-029(g)," Los Alamos National Laboratory letter (EM/ER:97-188) to S. Dinwiddle (NMED-HRMB) from J. Jansen (LANL ER Project Manager) and T. Taylor (DOE-LAAO), Los Alamos, New Mexico. (LANL 1997, 055837)
- LANL (Los Alamos National Laboratory), September 1997. "RFI Report for Potential Release Sites at TA-16: 16-024(c,d,f,g,k,m,o,p–s), 16-025(b2,d,g,h,j,k,m–o,y), 16-034(c–f,l,m), C-16-005, C-16-017," Los Alamos National Laboratory document LA-UR-97-3770, Los Alamos, New Mexico. (LANL 1997, 056660.289)
- LANL (Los Alamos National Laboratory), September 1997. "Voluntary Corrective Measures Completion Report for Potential Release Sites 16-013, 16-025(x), 16-031(d), C-16-065, C-16-068," Los Alamos National Laboratory document LA-UR-97-3677, Los Alamos, New Mexico. (LANL 1997, 056569)
- LANL (Los Alamos National Laboratory), September 1997. "RFI Report for Potential Release Sites at TA-16: 11-012(a,b), 13-003(a), 16-006(c,d), 16-010(a), 16-021(a), 16-026(c,d,v), 16-028(a), 16-030(g)," Los Alamos National Laboratory document LA-UR-97-3072, Los Alamos, New Mexico. (LANL 1997, 062539)
- LANL (Los Alamos National Laboratory), September 1998. "Decommissioning Completion Report for High-Explosive Facilities at Technical Area 16 (Buildings 27, 10, 13 and 63)," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 1998, 059602)
- LANL (Los Alamos National Laboratory), September 15, 1998. "SWRC Drains Database," online search results from database at Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 1998, 101808)
- LANL (Los Alamos National Laboratory), September 1998. "Replacement Chapter 6 for RFI Work Plan 1082, Addendum 2," enclosure to Los Alamos National Laboratory letter (EM/ER:98-317) to T. Taylor (DOE) from J. Canepa (LANL), Los Alamos, New Mexico. (LANL 1998, 059685)
- LANL (Los Alamos National Laboratory), September 22, 1998. "Inorganic and Radionuclide Background Data for Soils, Canyon Sediments, and Bandelier Tuff at Los Alamos National Laboratory," Los Alamos National Laboratory document LA-UR-98-4847, Los Alamos, New Mexico. (LANL 1998, 059730)

- LANL (Los Alamos National Laboratory), January 20, 1999. "Semi-Annual Transmittal of BMPs Implemented at PRSs at Los Alamos National Laboratory," Los Alamos National Laboratory letter (EM/ER:99-010) to R.S. Dinwiddie (NMED-HRMB) from J. Canepa (LANL) and T.J. Taylor (DOE-LAAO), Los Alamos, New Mexico. (LANL 1999, 063172)
- LANL (Los Alamos National Laboratory), January 20, 1999. "Status of Completion of the Surface Water Assessment Team (SWAT) Recommendations," Los Alamos National Laboratory memorandum (EM/ER:99-009) to S. Rae (ESH-18) from J. Canepa (EM/ER), Los Alamos, New Mexico. (LANL 1999, 062685)
- LANL (Los Alamos National Laboratory), July 1999. "Voluntary Corrective Measures Completion Report for Potential Release Sites 16-006(g), Drum Storage Area Aggregate–[16-029(g2) and C-16-074], 16-005(d), 16-034(p)," Los Alamos National Laboratory document LA-UR-99-3001, Los Alamos, New Mexico. (LANL 1999, 063973)
- LANL (Los Alamos National Laboratory), August 7, 2000. "Cerro Grande Fire Aftermath: Environmental Restoration Project Activities to Reduce the Migration of Contamination from Potential Release Sites," Los Alamos National Laboratory document LA-UR-00-3767, Los Alamos, New Mexico. (LANL 2000, 067370)
- LANL (Los Alamos National Laboratory), September 28, 2001. "Annual Transmittal of Best Management Practices Implemented at Potential Release Sites (PRSs) at the Los Alamos National Laboratory (LANL)," Los Alamos National Laboratory letter (ER2001-0809) to J. Young (NMED-HWB) from J. Canepa (LANL) and M. Johansen (DOE-LAAO), Los Alamos, New Mexico. (LANL 2001, 070305)
- LANL (Los Alamos National Laboratory), January 9, 2003. "Sampling Notification," Los Alamos National Laboratory letter (ER2003-0012) to J. Young (NMED-HWB) from R. Bohn (LANL), Los Alamos, New Mexico. (LANL 2003, 073838)
- LANL (Los Alamos National Laboratory), October 2, 2007. "Diesel Contaminated Soil Near Former Technical Area (TA) 16 Building 7, Request for Closure Under NMWQCC Regulations," Los Alamos National Laboratory letter (ENV-RCRA-07-230) to M. Leavitt (NMED-SWQB) from A.R. Grieggs (ENV-RCRA), Los Alamos, New Mexico. (LANL 2007, 109805)
- LASL (Los Alamos Scientific Laboratory), 1940s. "Utility Plot Plan S-Site (TA-16)," Engineering Drawing ENG-C-5708. 1940s, 109937)
- LASL (Los Alamos Scientific Laboratory), March 17, 1945. "Mechanical Equipment & Piping Bldg. (S-25 E), 'S' Site Expansion Number 2," Engineering Drawing ENG-C-5634, sheet number S-25E, M-2, Los Alamos, New Mexico. (LASL 1945, 109713)
- LASL (Los Alamos Scientific Laboratory), 1945. "(TA-16) S-Site Expansion-No.4 Analytical Laboratory (16-24) Mechanical Plan," Engineering Drawing ENG-C-5692, sheet number 3 of 3, Los Alamos, New Mexico. (LASL 1945, 109725)
- LASL (Los Alamos Scientific Laboratory), July 23, 1948. "Alterations to Building S-27 (16-37), TA-16, Mechanical," Engineering Drawing A5-C166, Los Alamos, New Mexico. (LASL 1948, 109945)

- LASL (Los Alamos Scientific Laboratory), July 1, 1952. "Structure Location Plan, TA-11, K-Site, Revision 4," Engineering Drawing ENG-R-126, Los Alamos, New Mexico. (LASL 1952, 095136.28)
- LASL (Los Alamos Scientific Laboratory), January 6, 1953. "Mechanical Alterations to Building (S-34) 16-45, 'S' Site Expansion Number 2, Revision 3," Engineering Drawing ENG-C-5645, sheet number S-34, M1-A, Los Alamos, New Mexico. (LASL 1953, 109943)
- LASL (Los Alamos Scientific Laboratory), September 1, 1959. "Utility Location Plan, TA-16, S-Site, Sewer System," Engineering Drawing ENG-R-867, sheet number 14 of 38, Los Alamos, New Mexico. (LASL 1959, 024177)
- LASL (Los Alamos Scientific Laboratory), September 1, 1959. "Utility Location Plan, TA-16, S-Site, Sewer System," Engineering Drawing ENG-R-869, sheet number 16 of 38. 1959, 024179)
- LASL (Los Alamos Scientific Laboratory), September 1, 1959. "Utility Location Plan, TA-16, S-Site, Sewer System," Engineering Drawings, Engineering Drawing ENG-R-876, sheet number 23 of 38. 1959, 024186)
- LASL (Los Alamos Scientific Laboratory), September 1, 1959. "Utility Location Plan, TA-16, S-Site, Sewer System," Engineering Drawings, Engineering Drawing ENG-R-877, sheet number 24 of 38. 1959, 024187)
- LASL (Los Alamos Scientific Laboratory), September 1, 1959. "Utility Location Plan, TA-16, S-Site, Sewer System," Engineering Drawings, Engineering Drawing ENG-R-881, sheet number 28 of 38. (LASL 1959, 024191)
- LASL (Los Alamos Scientific Laboratory), September 1, 1959. "Utility Location Plan, TA-16, S-Site, Sewer System," Engineering Drawings, Engineering Drawing ENG-R-882, sheet number 29 of 38. 1959, 024192)
- LASL (Los Alamos Scientific Laboratory), June 28, 1965. "TA-16 aerial photograph," Los Alamos Scientific Laboratory, Los Alamos, New Mexico. (LASL 1965, 016396)
- LASL (Los Alamos Scientific Laboratory), July 28, 1977. "TA-16 aerial photograph," Los Alamos Scientific Laboratory, Los Alamos, New Mexico. (LASL 1977, 017770)
- McInroy, D., May 30, 2003. "New Roadway Over the Location of SWMU 16-005(k)," Los Alamos National Laboratory memorandum (ER2003-0378) to A. Aglialoro (ESA-OPS) from D. McInroy (RRES-RS), Los Alamos, New Mexico. (McInroy 2003, 079571)
- NMED (New Mexico Environment Department), June 27, 1994. "No Further Action Required at TA-16 for UST #TA-16-205," New Mexico Environment Department letter to J. Vozella (DOE-LAAO) from A. Moreland (NMED-USTB), Santa Fe, New Mexico. (NMED 1994, 043565)

- NMED (New Mexico Environment Department), December 23, 1998. "Approval: Class III Permit Modification to Remove Ninety-nine (99) Solid Waste Management Units from the Department of Energy/Los Alamos National Laboratory RCRA Permit NM 0890010515," New Mexico Environment Department letter to T. Taylor (DOE-LAAO) and J.C. Browne (LANL Director) from E. Kelley (NMED-HRMB), Santa Fe, New Mexico. (NMED 1998, 063042)
- NMED (New Mexico Environment Department), March 8, 1999. "Requested Work at Los Alamos National Lab (LANL) Technical Area (TA) 16-197, Los Alamos, New Mexico," New Mexico Environment Department letter to A. Puglisi (LANL ESH-19) from L. Goerger (NMED-USTB), Santa Fe, New Mexico. (NMED 1999, 073897)
- NMED (New Mexico Environment Department), December 10, 2002. "Response to Response to Request for Supplemental Information for the Voluntary Corrective Measures Report for Potential Release Sites 16-006(g), Drum Storage Area Aggregate [16-029(g2) and C-16-074], 16-005(d), and 16-034(p)," New Mexico Environment Department letter to E. Trollinger (DOE-LAAO) and J.C. Browne (LANL Director) from J. Young (NMED-HWB), Santa Fe, New Mexico. (NMED 2002, 073818)
- NMED (New Mexico Environment Department), October 2006. "New Mexico Environment Department TPH Screening Guidelines," Santa Fe, New Mexico. (NMED 2006, 094614)
- NMED (New Mexico Environment Department), March 23, 2007. "Approval of Class 3 Permit Modification for No Further Action of 20 Solid Waste Management Units," New Mexico Environment Department letter to D. Glenn (DOE LASO) and R. Watkins (LANL) from C. Padilla (NMED), Santa Fe, New Mexico. (NMED 2007, 095495)
- NMED (New Mexico Environment Department), June 29, 2007. "Certificate of Completion, Area of Concern 16-024(v) and Solid Waste Management Unit 16-031(f) at Technical Area 16," 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 2007, 098419)
- NMED (New Mexico Environment Department), December 2009. "Technical Background Document for Development of Soil Screening Levels, Revision 5.0," with revised Table A-1, New Mexico Environment Department, Hazardous Waste Bureau and Ground Water Quality Bureau Voluntary Remediation Program, Santa Fe, New Mexico. (NMED 2009, 108070)
- NMED (New Mexico Environment Department), March 4, 2010. "Directions to Investigate Magazine Area A (TA-28) and Magazine Area B (TA-29)," New Mexico Environment Department letter to G.J. Rael (DOE-LASO) and M. Graham (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2010, 109033)
- Nylander, C., June 17, 1986. "Oil Spill at TA-16, Building 430," Los Alamos National Laboratory memorandum (HSE8-86-689) to J. Aragon (HSE Division Leader) from C. Nylander (HSE-8), Los Alamos, New Mexico. (Nylander 1986, 052964.602)
- Salgado, A., July 7, 2003. "New Access Roadway Over the Location of SWMU 16-015(B) " Los Alamos National Laboratory memorandum (ER2003-0459) to D. McInroy (RRES-RS) from A. Salgado (ESA-FM), Los Alamos, New Mexico. (Salgado 2003, 079624)

- Santa Fe Engineering Ltd., March 1992. "Wastewater Stream Characterization for TA 16-430, Environmental Study," report prepared for Los Alamos National Laboratory, Santa Fe, New Mexico. (Santa Fe Engineering, Ltd. 1992, 109806)
- Santa Fe Engineering Ltd., May 1992. "Wastewater Stream Characterization for Buildings TA 16-101, 410, 411, 413, 414, 415, 416, 418, 419, 435, 437, 442, 443, 444, 1364, 1366 and 1384, Environmental Study, Characterization Report #16," report prepared for Los Alamos National Laboratory, Santa Fe, New Mexico. (Santa Fe Engineering, Ltd. 1992, 015328)
- Santa Fe Engineering Ltd., May 1992. "Wastewater Stream Characterization for TA 16-360, 380, 1367, and 1368," report prepared for Los Alamos National Laboratory, Santa Fe, New Mexico. (Santa Fe Engineering, Ltd. 1992, 020973)
- SNL (Sandia National Laboratories), November 1, 1946. "TA-16 aerial photograph," Los Alamos Scientific Laboratory, Los Alamos, New Mexico. (SNL 1946, 015402)
- SNL (Sandia National Laboratories), November 1, 1946. "TA-16 aerial photograph ", Los Alamos Scientific Laboratory, Los Alamos, New Mexico. (SNL 1946, 015403)
- Watanabe, S., July 27, 1994. "HE Spot Tests at TA-16-222 and TA-16-360," Los Alamos National Laboratory memorandum (CST-ER SPW 94-004) to File from S. Watanabe, Los Alamos, New Mexico. (Watanabe 1994, 052964.653)

5.2 Map Data Sources

Sampling location- er_location_ids_pnt; Point Feature Locations of the Environmental Restoration Project Database; Los Alamos National Laboratory, Waste and Environmental Services Division, EP2010-0035; 21 January 2010.

SWMU or AOC: er_prs_all_reg, Potential Release Sites; Los Alamos National Laboratory, Waste and Environmental Services Division, Environmental Data and Analysis Group, EP2009-0633; 1:2,500 Scale Data; 25 January 2010.

Structure or Building: ksl_structures_ply; Structures; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Fence: ksl_fences_arc; Security and Industrial Fences and Gates; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Paved road: ksl_paved_rds_arc; Paved Road Arcs; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Dirt road: ksl_dirt_rds_arc; Dirt Road Arcs; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Storm drain: ksl_stormdrn_arc; Storm Drain Line Distribution System; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Contours: lanl_contour1991_; Hypsography, 2, 10, 20, 100 Foot Contour Interval; Los Alamos National Laboratory, ENV Environmental Remediation and Surveillance Program; 1991.

Communication: ksl_comm_arc; Communication Lines; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 08 August 2002; as published 28 May 2009.

Electric: ksl_electric_arc; Primary Electric Grid; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Gas: ksl_gas_arc; Primary Gas Distribution Lines; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Industrial waste: wfm_indstrl_waste_arc; Primary Industrial Waste Lines; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 15 January 2009.

Sewer: ksl_sewer_arc; Sewer Line System; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Steam: ksl_steam_arc; Steam Line Distribution System; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Water: ksl_water_arc; Water Lines; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

(inset)LANL Boundary: plan_ownerclip_reg; Ownership Boundaries around LANL Area; Los Alamos National Laboratory, Site Planning & Project Initiation Group, Infrastructure Planning Office; 19 September 2007; as published 04 December 2008.

(Inset)ROADS: lac_streets_arc; Streets; County of Los Alamos, Information Services; as published 16 May 2006.

Landscape: ksl_landscape_arc; Primary Landscape Features; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Former structures: frmr_structures_ply; Former Structures of the Los Alamos Site; Los Alamos National Laboratory, Waste and Environmental Services Division, EP2008-0441; 1:2,500 Scale Data; 08 August 2008.

Technical area boundary: plan_tecareas_ply; Technical Area Boundaries; Los Alamos National Laboratory, Site Planning & Project Initiation Group, Infrastructure Planning Office; September 2007; as published 04 December 2008.

Inactive Outfall: wqh_inact_outfalls_pnt; WQH Inactive Outfalls; Los Alamos National Laboratory, ENV Water Quality and Hydrology Group; Edition 2002.01; 01 September 2003.

NPDES Outfalls: wqh_npdes_outfalls_pnt: WQH NPDES Outfalls; Los Alamos National Laboratory, ENV Water Quality and Hydrology Group; Edition 2002.01; 01 September 2003.

Outfalls: er_outfalls_pnt: Outfalls; Los Alamos National Laboratory, ENV Environmental Remediation and Surveillance Program; Unknown publication date.

Monitoring wells: Environmental Surveillance at Los Alamos During 2006, Groundwater monitoring; LANL Report LA-14341-ENV, September 2007.

Supply Wells: Locations of Monitoring and Supply Wells at Los Alamos National Laboratory, Table A-2, 2009 General Facility Information; LANL Report LA-UR-09-1341; March 2009.

Drainage: wqh_drainage_arc: WQH Drainage_arc; Los Alamos National Laboratory, ENV Water Quality and Hydrology Group; 1:24,000 Scale Data; 03 June 2003.

Aggregate Area: er_agg_areas_ply: Aggregate Areas; Los Alamos National Laboratory, ENV Environmental Remediation & Surveillance Program, ER2005-0496; 1:2,500 Scale Data; 22 September 2005.

Canyon Reaches: er_reaches_ply: Canyon Reaches; Los Alamos National Laboratory, ENV Environmental Remediation and Surveillance Program, ER2002-0592; 1:24,000 Scale Data; Unknown publication date.

Springs: er_springs_pnt: Locations of Springs; Los Alamos National Laboratory, Waste and Environmental Services Division in cooperation with the New Mexico Environment Department, Department of Energy Oversight Bureau, EP2008-0138; 1:2,500 Scale Data; 17 March 2008.



Figure 1.0-1 Location of Upper Water Canyon Aggregate Area with respect to Laboratory TAs









Figure 2.1-2 Inorganic chemicals detected above BVs at SWMU 11-001(c)



Figure 2.1-3 Organic chemicals detected at SWMU 11-001(c)



Figure 2.2-1 Site features of AOC 11-012(a) and AOC 11-012(b)







Figure 3.1-1 Site features of SWMU 16-001(d)



Figure 3.1-2 Inorganic chemicals detected above BVs at SWMU 16-001(d)



Figure 3.1-3 Organic chemicals detected at SWMU 16-001(d)









Note: Concentrations are in mg/kg



-W- Water

--DL- Drainline

Figure 3.2-3 Organic chemicals detected at SWMU 16-003(a)

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Outfall

SWMU 11-001(c)

1614000

16-01591

0316-95-0265 0-0.5 ft SOIL Benzo(a)pyrene 0.11 (J) Benzo(b)fluoranthene 0.16 (J) Benzo(g,h,i)perylene 0.079 (J) Chrysene 0.12 (J) Fluoranthene 0.22 (J) Phenanthrene 0.088 (J) Pyrene 0.18 (J)

0316-95-0264 0-0.5 ft SOIL

Benzo(a)anthracene 0.33 (J) Benzo(a)pyrene 0.5 (J) Benzo(b)fluoranthene 0.68 (J) Benzo(g,h,i)perylene 0.36 (J) Benzo(k)fluoranthene 0.26 (J) Benzoic Acid 0.4 (J) Benzyl Alcohol 0.082 (J) Indeno(1,2,3-cd)pyrene 0.37 (J) Phenanthrene 0.48 (J)

1760000 -

16-01592 0316-95-0266 0-0.5 ft SOIL Benzo(b)fluoranthene 0.082 (J) Benzoic Acid 0.37 (J) Fluoranthene 0.12 (J) Phenanthrene 0.057 (J) Pyrene 0.089 (J)

759750 -

State Plane Coordinate System New Mexico, Central Zone, US Survey Feet North American Datum 1983 National Geodetic Vertical Datum 1929

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Figure 3.3-2 Inorganic chemicals detected above BVs at SWMU 16-003(b)


Organic chemicals detected at SWMU 16-003(b) Figure 3.3-3



Figure 3.4-1 Site features of Consolidated Unit 16-003(c)-99 [SWMU 16-003(c) and SWMU 16-026(v)] and AOC C-16-046

SWMU 16-005(c) 16-176 SWM⊌ 16-025(q) 1/62200 -SITERD SWMU 16-025(s)-SWMU 16-032(a) SWMU 16-026(w)-SWMU-16-017(m)-99 SWMU 16-025(y)-SWMU 16-029(a2)-7 BUTTRER RD 1761900 AOC-C-16-005 16-53 SWMU 16-029(b2) AOC 16-024(p) AOC 16-024(q) 16-87 AOC C-16-069 1761600 -SWMU 16-025(a2) AOC 16-015(d) -SWMU 16-029(d2) SWMU 16-029(e2) SWMU 16-029(v) 5 0 20 40 80 120 160 Feel

0 20 40 80 120 160 Feet State Plane Coordinate System New Mexico, Central Zone, US Survey Feet North American Datum 1983 National Geodetic Vertical Datum 1929 Los Alamos Technical Associates (LATA-LAO) MAP UWC-HIR-06.1-SITE 04 MAY 2010 TOOMEY



Figure 3.4-2 Inorganic chemicals detected above BVs at SWMU 16-026(v)

BUNKER RD 1261900



-- DL- Drainline

Figure 3.4-3 Organic chemicals detected at SWMU 16-026(v)

8 SWMU 16-025(q) 1/62200 SWMU 16-025(s)-2 SITE SWMU 16-032(a) SWMU 16-026(w)-SWMU-16-017(m)-99-SWMU 16-025(y)-SWMU 16-029(a2) SUNIKER RD 1261900 AOC C-16-005 16-53 SWMU 16-029(b2)4 AOC 16-024(p) AOC 16-024(q) AOC C-16-069 1761600 SWMU 16-025(a2) -AOC 16-015(d) SWMU 16-029(d2) SWMU 16-029(v) -SWMU 16-029(e2) 0 20 40 80 120 160

0 20 40 80 120 160 Feet State Plane Coordinate System New Mexico, Central Zone, US Survey Feet North American Datum 1983 National Geodetic Vertical Datum 1929 Los Alamos Technical Associates (LATA-LAO) MAP UWC-HIR-06.3-ORG 21 JUNE 2010 CRUZ



Figure 3.5-1 Site features of Consolidated Unit 16-003(I)-99 [SWMU 16-003(I) and SWMU 16-030(h)], SWMU 16-005(h), AOC 16-021(b), and AOC C-16-071



Figure 3.5-2 Inorganic chemicals detected above BVs at SWMU 16-030(h)







Figure 3.6-1 Site features of Consolidated Unit 16-003(m)-99 [SWMU 16-003(m), SWMU 16-006(d), and AOC 16-030(g)]



Figure 3.6-2 Inorganic chemicals detected above BVs at SWMU 16-006(d) and AOC 16-030(g)

Note: Concentrations are in mg/kg



-w- Water

- DL- - Drainline

Figure 3.6-3 Organic chemicals detected at SWMU 16-006(d) and AOC 16-030(g)

Underground structure

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Figure 3.10-1 Site features of SWMU 16-005(k)



Figure 3.11-1 Site features of SWMU 16-005(I)



Figure 3.12-1 Site features of Consolidated Unit 16-006(c)-00 [SWMU 16-006(c) and SWMU 16-026(a)] and SWMU 16-016(g)



Figure 3.12-2 Inorganic chemicals detected above BVs at SWMU 16-006(c)



Figure 3.12-3 Organic chemicals detected at SWMU 16-006(c)



Figure 3.13-1 Site features of SWMU 16-015(a)



Figure 3.14-1 Site features of SWMU 16-015(b)



Figure 3.14-2 Inorganic chemicals detected above BVs at SWMU 16-015(b)



Figure 3.14-3 Organic chemicals detected at SWMU 16-015(b)



Figure 3.15-1 Site features of SWMU 16-016(a) and SWMU 16-025(w)



Figure 3.16-1 Site features of SWMU 16-016(e) and AOC 16-016(f)



Figure 3.19-1 Site features of SWMU 16-017(j)-99



Figure 3.20-1 Site features of SWMU 16-017(k)-99



Figure 3.21-1 Site features of SWMU 16-017(I)-99



Figure 3.22-1 Site features of SWMU 16-017(m)-99



Figure 3.23-1 Site features of SWMU 16-017(n)-99



Figure 3.24-1 Site features of SWMU 16-017(o)-99



Figure 3.26-1 Site features of AOC 16-022(a)



Figure 3.27-1 Site features of AOC 16-022(b) and AOC 16-033(b)



Figure 3.27-2 Organic chemicals detected at AOC 16-022(b) and AOC 16-033(b)



Figure 3.28-1 Site features of AOC 16-024(i)



Figure 3.29-1 Site features of AOC 16-024(j)



Figure 3.30-1 Site features of AOC 16-024(k)



Figure 3.31-1 Site features of AOC 16-024(I)







Figure 3.32-2 Inorganic chemicals detected above BVs at AOC 16-024(o)










Figure 3.34-2 Inorganic chemicals detected above BVs at AOC 16-024(q)



Figure 3.34-3 Organic chemicals detected at AOC 16-024(q)



Figure 3.35-1 Site features of AOC 16-024(r) and SWMU 16-025(c2)



Figure 3.36-1 Site features of AOC 16-024(s)



Figure 3.36-2 Inorganic chemicals detected above BVs at AOC 16-024(s)



Figure 3.37-1 Site features of AOC 16-024(t)



Figure 3.40-1 Site features of Consolidated Unit 16-025(y)-99 [SWMU 16-025(y) and SWMU 16-029(a2)]



Figure 3.40-2 Inorganic chemicals detected above BVs at SWMU 16-025(y)



Figure 3.41-1 Site features of Consolidated Unit 16-026(b2)-00 [SWMU 16-026(b2) and SWMU 16-028(d)]



Figure 3.42-1 Site features of SWMU 16-026(c2)



Figure 3.44-1 Site features of SWMU 16-026(s) and AOC C-16-028





Figure 3.45-1 Site features of SWMU 16-026(u)

North American Datum 1983 National Geodetic Vertical Datum 1929 Los Alamos Technical Associates (LATA-LAO)

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Figure 3.45-2 Inorganic chemicals detected above BVs at SWMU 16-026(u)



Figure 3.45-3 Organic chemicals detected at SWMU 16-026(u)



Figure 3.46-1 Site features of SWMU 16-026(y)



Figure 3.47-1 Site features of AOC 16-027(c) and AOC 16-027(d)



Figure 3.49-1 Site features of SWMU 16-028(b)



Figure 3.49-2 Inorganic chemicals detected above BVs at SWMU 16-028(b)



Figure 3.49-3 Organic chemicals detected at SWMU 16-028(b)



Figure 3.50-1 Site features of Consolidated Unit 16-029(b2)-99 [SWMU 16-029(b2) and AOC C-16-005]



Figure 3.50-2 Inorganic chemicals detected above BVs at AOC C-16-005



Figure 3.51-1 Site features of Consolidated Unit 16-029(c2)-99 [SWMU 16-005(e), AOC 16-015(c), SWMU 16-025(z), and SWMU 16-029(c2)]



Figure 3.51-2 Inorganic chemicals detected above BVs at AOC 16-015(c)



Figure 3.51-3 Organic chemicals detected at AOC 16-015(c)



Figure 3.52-1 Site features of Consolidated Unit 16-029(e)-99 [SWMU 16-026(h2) and SWMU 16-029(e)]



Figure 3.52-2 Inorganic chemicals detected above BVs at SWMU 16-026(h2)



Figure 3.52-3 Organic chemicals detected at SWMU 16-026(h2)



Figure 3.53-1 Site features of Consolidated Unit 16-029(g)-99 [SWMU 16-021(a), SWMU 16-028(e), and SWMU 16-029(g)]



Figure 3.53-2 Inorganic chemicals detected above BVs at SWMU 16-021(a), SWMU 16-028(e), and SWMU 16-029(g)



Figure 3.53-3 Organic chemicals detected at SWMU 16-021(a), SWMU 16-028(e), and SWMU 16-029(g)



Figure 3.55-1 Site features of Consolidated Unit 16-029(y)-99 [SWMU 16-025(t) and SWMU 16-029(y)]



Figure 3.57-1 Site features of SWMU 16-031(a)



Figure 3.57-2 Inorganic chemicals detected above BVs at SWMU 16-031(a)



Figure 3.57-3 Organic chemicals detected at SWMU 16-031(a)


Figure 3.58-1 Site features of SWMU 16-031(e) and AOC 16-033(k)



Figure 3.59-1 Site features of AOC 16-033(a)



Figure 3.61-1 Site features of AOC 16-033(c) and AOC C-16-019



Figure 3.62-1 Site features of AOC 16-033(d)



Figure 3.63-1 Site features of AOC 16-033(i) and AOC 16-033(j)



Figure 3.67-1 Site features of AOC C-16-020



Figure 3.69-1 Site features of AOC C-16-030 and AOC C-16-031



Figure 3.69-2 Inorganic chemicals detected above BVs at AOC C-16-030 and AOC C-16-031



Figure 3.69-3 Organic chemicals detected at AOC C-16-030 and AOC C-16-031



Figure 3.71-1 Site features of AOC C-16-034 and AOC C-16-035



Figure 3.74-1 Site features of AOC C-16-047 and AOC C-16-058



Figure 3.76-1 Site features of AOC C-16-069



Figure 3.76-2 Organic chemicals detected at AOC C-16-069



Figure 3.78-1 Site features of AOC C-16-073



Figure 3.79-1 Site features of AOC C-16-076



Figure 3.80-1 Site features of AOC C-16-077

Table 1.1-1
SWMUs and AOCs within the Upper Water Canyon Aggregate Area

Consolidated Unit	Site ID	Brief Description	Site Status	HIR Section/ Reference	
TA-11				•	
	SWMU 11-001(c)	Firing Pit	In progress	HIR section 2.1	
	AOC 11-012(a)	Potential Soil Contamination Associated with Former Magazine 11-7	In progress	HIR section 2.2	
	AOC 11-012(b)	Potential Soil Contamination Associated with Former Magazine 11-8	In progress	HIR section 2.3	
TA-16					
	SWMU 16-001(d)	Dry Well	In progress	HIR section 3.1	
	SWMU 16-003(a)	Sump and Outfall	In progress	HIR section 3.2	
	SWMU 16-003(b)	Sump and Outfall	In progress	HIR section 3.3	
16-003(c)-99	SWMU 16-003(c)	Sump	In progress	HIR section 3.4.1	
	SWMU 16-026(v)	Outfall	In progress	HIR section 3.4.2	
16-003(l)-99	SWMU 16-003(I)	Sumps and Outfalls	In progress	HIR section 3.5.1	
	SWMU 16-030(h)	Outfalls In progress		HIR section 3.5.2	
16-003(m)-99	SWMU 16-003(m)	Sump	In progress	HIR section 3.6.1	
	SWMU 16-006(d)	Septic System	In progress	HIR section 3.6.2	
	AOC 16-030(g)	Outfall	In progress	HIR section 3.6.3	
	AOC 16-003(q)	Sump	In progress	HIR section 3.7	
	SWMU 16-005(a)	Former Septic System	In progress	HIR section 3.8	
	SWMU 16-005(h)	Former Septic System	In progress	HIR section 3.9	
	SWMU 16-005(k)	Former Septic System	In progress	HIR section 3.10	
	SWMU 16-005(I)	Former Grease Trap	In progress	HIR section 3.11	
	SWMU 16-005(o)	Septic Tank	Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042	
16-006(c)-00	SWMU 16-006(c)	Septic System	In progress	HIR section 3.12.1	
	SWMU 16-026(a)	Outfalls	In progress	HIR section 3.12.2	
	SWMU 16-006(f)	Septic System	Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042	
	SWMU 16-006(i)	Septic tank	Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042	
	SWMU 16-012(s)	Storage Area/Rest house	Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042	

Consolidated Unit	Site ID	Brief Description	Site Status	HIR Section/ Reference	
	SWMU 16-012(t)	Satellite Accumulation Area	Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042	
	SWMU 16-012(u)	Satellite Accumulation Area	Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042	
	SWMU 16-012(v)	Storage Area/Rest house	Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042	
	SWMU 16-012(w)	Storage Area/Rest house	Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042	
	SWMU 16-012(x)	Satellite Accumulation Area	Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042	
	SWMU 16-012(y)	Storage Area/Rest house	Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042	
	SWMU 16-015(a)	Former Building 16-15	In progress	HIR section 3.13	
	SWMU 16-015(b)	Former Building 16-18	In progress	HIR section 3.14	
	SWMU 16-016(a)	Landfill	In progress	HIR section 3.15	
	SWMU 16-016(e)	Surface Disposal Area	In progress	HIR section 3.16	
	AOC 16-016(f)	Surface Disposal Area	In progress	HIR section 3.17	
	SWMU 16-016(g)	Surface Disposal Area	In progress	HIR section 3.18	
	SWMU 16-017(j)-99	Former Magazine 16-63	In progress	HIR section 3.19	
	SWMU 16-017(k)-99	Former Magazine 16-78	In progress	HIR section 3.20	
	SWMU 16-017(I)-99	Former Magazine 16-77	In progress	HIR section 3.21	
	SWMU 16-017(m)-99	Former Magazine 16-76	In progress	HIR section 3.22	
	SWMU 16-017(n)-99	Former Magazine 16-75	In progress	HIR section 3.23	
	SWMU 16-017(o)-99	Former Magazine 16-59	In progress	HIR section 3.24	
	AOC 16-021(b)	Decommissioned Hydraulic Press and Associated Drain	In progress	HIR section 3.25	
	AOC 16-022(a)	Underground Storage Tank (removed)	In progress	HIR section 3.26	
	AOC 16-022(b)	Underground Storage Tank (removed)	In progress	HIR section 3.27	
	AOC 16-024(i)	Potential Soil Contamination Associated with Former Magazine 16-64	In progress	HIR section 3.28	

Table 1.1-1 ((continued)

Consolidated				HIR Section/		
Unit	Site ID	Brief Description	Site Status	Reference		
	AOC 16-024(j)	Potential Soil Contamination Associated with Former Magazine 16-65	In progress	HIR section 3.29		
	AOC 16-024(k)	Potential Soil Contamination Associated with Former Magazine 16-57	In progress	HIR section 3.30		
	AOC 16-024(I)	Potential Soil Contamination Associated with Former Magazine 16-72	In progress	HIR section 3.31		
	AOC 16-024(o)	Potential Soil Contamination Associated with Former Magazine 16-67	In progress	HIR section 3.32		
	AOC 16-024(p)	Potential Soil Contamination Associated with Former Magazine 16-70	In progress	HIR section 3.33		
	AOC 16-024(q)	Potential Soil Contamination Associated with Former Magazine 16-71	In progress	HIR section 3.34		
AOC 16-024(r) AOC 16-024(s)		Potential Soil Contamination Associated with Former Magazine 16-68	In progress	HIR section 3.35		
		Potential Soil Contamination Associated with Former Magazine 16-60	In progress	HIR section 3.36		
	AOC 16-024(t)	Potential Soil Contamination Associated with Former Magazine 16-464	In progress	HIR section 3.37		
	SWMU 16-025(c2)	Potential Soil Contamination Associated with Former Building 16-56	In progress	HIR section 3.38		
	SWMU 16-025(g2) Magazine Removed f Laboratory Waste Fac 12/23/98		Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042		
	SWMU 16-025(h2)	Potential Soil Contamination Associated with Former Magazine 16-109	Removed from the Laboratory's Hazardous Waste Facility Permit, 4/22/07	NMED 2007, 095495		
	SWMU 16-025(w)	Potential Soil Contamination Associated with Former Building 16-81	In progress	HIR section 3.39		
16-025(y)-99	SWMU 16-025(y)	Potential Soil Contamination Associated with Former HE Grinding Facility 16-55	In progress	HIR section 3.40.1		
	SWMU 16-029(a2)	Sumps (removed) and Outfall	In progress	HIR section 3.40.2		
16-026(b2)-00	SWMU 16-026(b2)	Outfall	In progress	HIR section 3.41.1		
	SWMU 16-028(d)	Outfall	In progress	HIR section 3.41.2		

Consolidated Unit	Site ID	Brief Description	Site Status	HIR Section/ Reference
	SWMU 16-026(a2)	Outfall	Removed from the Laboratory's Hazardous Waste Facility Permit, 4/22/07	NMED 2007, 095495
	SWMU 16-026(c2)	Outfalls	In progress	HIR section 3.42
	SWMU 16-026(d2)	Outfall	Removed from the Laboratory's Hazardous Waste Facility Permit, 4/22/07	NMED 2007, 095495
	SWMU 16-026(e2)	Outfall	Removed from the Laboratory's Hazardous Waste Facility Permit, 4/22/07	NMED 2007, 095495
	SWMU 16-026(f2)	Outfall	Removed from the Laboratory's Hazardous Waste Facility Permit, 4/22/07	NMED 2007, 095495
16-026(q)-99	SWMU 16-005(d)	Former Septic System	In progress	HIR section 3.43.1
	SWMU 16-017(h)-99	Former HE Casting Building In progress 16-27		HIR section 3.43.2
	SWMU 16-017(x)-99	Former Magazine 16-79	In progress	HIR section 3.43.3
	SWMU 16-025(k)	Potential Soil Contamination Associated with Former HE Powder Inspection Building 16-25	In progress	HIR section 3.43.4
	SWMU 16-025(I)	25(I) Potential Soil Contamination In progress Associated with Former HE Casting Building 16-26		HIR section 3.43.5
	SWMU 16-026(q)	Outfalls	In progress	
	SWMU 16-029(f2)	Sump (former) and Outfall	In progress	HIR section 3.43.7
	SWMU 16-029(r)	Outfall	In progress	HIR section 3.43.8
	SWMU 16-031(d)	Sumps (former) and Outfall	In progress	HIR section 3.43.9
	SWMU 16-032(c)	Sump (former) and Outfall	In progress	HIR section 3.43.10
	SWMU 16-034(a)	Potential Soil Contamination Associated with Former Laboratory 16-24	In progress	HIR section 3.43.11
	AOC C-16-006	Former Storage Building 16-148	In progress	HIR section 3.43.12
	AOC C-16-065	Storage Area	In progress	HIR section 3.43.13
	SWMU 16-026(s)	Outfall	In progress	HIR section 3.44
	SWMU 16-026(t)	Outfall	Removed from the Laboratory's Hazardous Waste Facility Permit, 4/22/07	NMED 2007, 095495

Consolidated Unit	Site ID	Brief Description	Site Status	HIR Section/ Reference	
	SWMU 16-026(u)	Outfall	In progress	HIR section 3.45	
	SWMU 16-026(x)	Outfall	Removed from the Laboratory's Hazardous Waste Facility Permit, 4/22/07	NMED 2007, 095495	
	SWMU 16-026(y)	Outfall	In progress	HIR section 3.46	
	AOC 16-027(c)	Former Transformer	In progress	HIR section 3.47	
	AOC 16-027(d)	Former Transformer	In progress	HIR section 3.48	
	SWMU 16-028(b)	Outfall	In progress	HIR section 3.49	
16-029(b2)-99	SWMU 16-029(b2)	Sumps (former) and Outfall	In progress	HIR section 3.50.1	
	AOC C-16-005	Potential Soil Contamination Associated with Former HE Processing Building 16-53	In progress	HIR section 3.50.2	
16-029(c2)-99	SWMU 16-005(e)	Former Septic System	In progress	HIR section 3.51.1	
	AOC 16-015(c)	Former Building 16-36	In progress	HIR section 3.51.2	
	SWMU 16-025(z)	Potential Soil Contamination Associated with Former HE Testing Building 16-37	In progress	HIR section 3.51.3	
	SWMU 16-029(c2)	Sumps (former) and Outfall	In progress	HIR section 3.51.4	
16-029(e)-99	SWMU 16-026(h2)	Outfalls	In progress	HIR section 3.52.1	
	SWMU 16-029(e)	Sump and Outfall	In progress	HIR section 3.52.2	
16-029(g)-99	SWMU 16-021(a)	Plating Operation in Building 16-450	In progress	HIR section 3.53.1	
	SWMU 16-028(e)	Outfall	In progress	HIR section 3.53.2	
	SWMU 16-029(g)	Former Sump	In progress	HIR section 3.53.3	
16-029(v)-99	AOC 16-015(d)	Former Steam Cleaning Building 16-51	In progress	HIR section 3.54.1	
	SWMU 16-025(a2)	Potential Soil Contamination Associated with Former HE Casting Building 16-50	In progress	HIR section 3.54.2	
	SWMU 16-025(b2)	SWMU 16-025(b2) Potential Soil Contamination Associated with Former HE Casting Building 16-52		HIR section 3.54.3	
	SWMU 16-029(d2)	Sumps (former) and Outfalls	In progress	HIR section 3.54.4	
	SWMU 16-029(e2)	Sumps (former) and Outfalls	In progress	HIR section 3.54.5	
	SWMU 16-029(v)	Sump (former) and Outfall	In progress	HIR section 3.54.6	
	SWMU 16-034(o)	Potential Soil Contamination Associated with Former Laboratory 16-49	In progress	HIR section 3.54.7	

Consolidated Unit	Site ID	Brief Description	Site Status	HIR Section/ Reference	
16-029(y)-99	SWMU 16-025(t)	Potential Soil Contamination Associated with Former HE Equipment Casting Building 16-38	In progress	HIR section 3.55.1	
	SWMU 16-029(y)	Sumps (former) and Outfall	In progress	HIR section 3.55.2	
16-029(z)-99	SWMU 16-005(c)	Former Septic System	In progress	HIR section 3.56.1	
	AOC 16-011 Former Incin		In progress	HIR section 3.56.2	
	AOC 16-023(b)	Former Incinerator	In progress	HIR section 3.56.3	
	SWMU 16-025(p)	Potential Soil Contamination Associated with Former HE Processing Building 16-44	In progress	HIR section 3.56.4	
	SWMU 16-025(q)	Potential Soil Contamination Associated with Former HE Processing Building 16-45	In progress	HIR section 3.56.5	
	SWMU 16-025(r)	Potential Soil Contamination Associated with Former Rest House 16-46	In progress	HIR section 3.56.6	
	SWMU 16-025(s)	Potential Soil Contamination Associated with Former Radium Source Building 16-48	In progress	HIR section 3.56.7	
	SWMU 16-025(u)	Potential Soil Contamination Associated with Former HE Processing Building 16-42	In progress	HIR section 3.56.8	
	SWMU 16-025(v)	Potential Soil Contamination Associated with Former HE Processing Building 16-43	In progress	HIR section 3.56.9	
	SWMU 16-026(w)	Outfall	In progress	HIR section 3.56.10	
	SWMU 16-029(z)	Former Sumps	In progress	HIR section 3.56.11	
	SWMU 16-032(a)	Sump (former) and Outfall	In progress	HIR section 3.56.12	
	SWMU 16-034(I)	Potential Soil Contamination Associated with Former Equipment and Control Building 16-47	In progress	HIR section 3.56.13	
	SWMU 16-034(p)	Potential Soil Contamination Associated with Former Building 16-41	In progress	HIR section 3.56.14	
	SWMU 16-031(a)	Outfall	In progress	HIR section 3.57	
	SWMU 16-031(e)	Outfall	In progress	HIR section 3.58	
	SWMU 16-031(f)	Outfall	Certificate of Completion without Controls	NMED 2007, 098419	

Consolidated Unit	Site ID	Brief Description	Site Status	HIR Section/ Reference
	SWMU 16-031(g)	Outfall	Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042
	AOC 16-032(b)	Sump	NFA approved	EPA 2005, 088464
	SWMU 16-032(d)	Sump	Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042
	SWMU 16-032(e)	Sump	Removed from the Laboratory's Hazardous Waste Facility Permit, 12/23/98	NMED 1998, 063042
	AOC 16-033(a)	Underground Tank (removed)	In progress	HIR section 3.59
	AOC 16-033(b)	Underground Tank (removed)	In progress	HIR section 3.60
	AOC 16-033(c)	Aboveground Tank (removed)	In progress	HIR section 3.61
	AOC 16-033(d)	Aboveground Tank (removed)	In progress	HIR section 3.62
	AOC 16-033(i)	Underground Storage Tank (removed)	In progress	HIR section 3.63
	AOC 16-033(j)	Underground Storage Tank (removed)	In progress	HIR section 3.64
	AOC 16-033(k)	Underground Storage Tank	In progress	HIR section 3.65
	AOC C-16-004	Building 16-150	NFA approved	EPA 2005, 088464
	AOC C-16-019	Former Building 16-19	In progress	HIR section 3.66
	AOC C-16-020	Former Building 16-22	In progress	HIR section 3.67
	AOC C-16-021	Former Building 16-001	NFA approved	EPA 2005, 088464
	AOC C-16-022	Former Building 16-002	NFA approved	EPA 2005, 088464
	AOC C-16-024	Former Building 16-009	NFA approved	EPA 2005, 088464
	AOC C-16-027	Former Building 16-017	NFA approved	EPA 2005, 088464
	AOC C-16-028	Former Building 16-5	In progress	HIR section 3.68
	AOC C-16-029	Former Building 16-003	NFA approved	EPA 2005, 088464
	AOC C-16-030	Former Building 16-181	In progress	HIR section 3.69
	AOC C-16-031	Former Building 16-182	In progress	HIR section 3.70
	AOC C-16-032	Former Building 16-167	NFA approved	EPA 2005, 088464
	AOC C-16-033	Former Building 16-085	NFA approved	EPA 2005, 088464
	AOC C-16-034	Aboveground Tank (removed)	In progress	HIR section 3.71
	AOC C-16-035	Aboveground Tank (removed)	In progress	HIR section 3.72
	AOC C-16-037	Storage area	NFA approved	EPA 2005, 088464
	AOC C-16-039	Former Building 16-151	NFA approved	EPA 2005, 088464
	AOC C-16-040	Former Building	NFA approved	EPA 2005, 088464
	AOC C-16-045	Former Manhole	NFA approved	EPA 2005, 088464

Table	1.1-1 ((continued)	
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Consolidated Unit	Site ID	Brief Description	Site Status	HIR Section/ Reference	
	AOC C-16-046	Former Manhole	In progress	HIR section 3.73	
	AOC C-16-047	Former Oil Switch	In progress	HIR section 3.74	
	AOC C-16-048	Former Steam manhole	NFA approved	EPA 2005, 088464	
	AOC C-16-058 Former Oil Switch		In progress	HIR section 3.75	
	AOC C-16-069	Former Trailer 16-87	In progress	HIR section 3.76 HIR section 3.77 HIR section 3.78 HIR section 3.79	
	AOC C-16-071	One-Time Spill	In progress		
	AOC C-16-073	Underground Storage Tank	In progress		
	AOC C-16-076	HE Magazine Area A	In progress		
	AOC C-16-077	HE Magazine Area B	E Magazine Area B In progress		
TA-37					
	AOC 37-001	Septic system	NFA approved	EPA 2005, 088464	

Note: Shading denotes NFA approved.

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	Cyanide (Total)
0311-95-0001	11-00001	0–0.5	SOIL	1192	1193, 1194	1192	1193
0311-95-0002	11-00001	0.5–0.8333	QBT4	1192	1193, 1194	1192	1193
0311-95-0003	11-00002	0–0.33	FILL	1192	1193, 1194	1192	1193
0311-95-0004	11-00002	0.4167–0.6667	SOIL	1192	1193, 1194	1192	1193
0311-95-0005	11-00003	0–0.5	SOIL	1192	1193, 1194	1192	1193
0311-95-0006	11-00003	0.5–0.9167	SOIL	1192	1193, 1194	1192	1193
0311-95-0007	11-00004	0.5–1	SOIL	1192	1193, 1194	1192	1193
0311-95-0008	11-00004	1–1.33	QBT4	1192	1193, 1194	1192	1193
0311-96-0001	11-00013	0–0.5	FILL	*	2584		2584
0311-96-0002	11-00014	0–0.5	FILL	_	2584		2584
0311-96-0003	11-00015	0–0.5	FILL	_	2584	—	2584
0311-96-0004	11-00016	0.5–1	FILL	—	2584	—	2584
0311-96-0005	11-00017	0–0.5	FILL	—	2584	_	2584
0311-96-0006	11-00018	3–3.5	FILL	_	2624	_	2624

 Table 2.1-1

 Samples Collected and Analyses Requested at SWMU 11-001(c)

Note: Numbers in analyte columns are request numbers.

* — =Analyses not requested.

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Barium	Cadmium	Cobalt	Copper	Cyanide (Total)	Lead	Thallium	Uranium
Qbt2, 3, 4 BV ^a		·		0.5	2.79	46	1.63	3.14	4.66	0.5	11.2	1.1	2.4
Soil BV ^a				0.83	8.17	295	0.4	8.64	14.7	0.5	22.3	0.73	1.82
Construction	Worker SSL ⁱ	b		124	65.4	4350	309	34.6	12400	6190	800	20.4	929
Industrial SSL	С			454	17.7	224000	1120	300 ^d	45400	227000	800	74.9	3410
Residential SS	SL ^c			31.3	3.9	15600	77.9	23 ^d	3130	1560	400	5.16	235
0311-95-0001	11-00001	0–0.5	SOIL	6.1 (J)	21.2	e	0.52	—	19	1.1 (U)	40.2	—	3.04
0311-95-0002	11-00001	0.5–0.8333	QBT4	5.2 (U)	6.5	127	—	3.4 (J)	8.5	1.1 (U)	12.8	—	2.75
0311-95-0003	11-00002	0–0.33	FILL	7.6	—	—	0.55 (U)	—	—	1.1 (U)	—	—	2.49
0311-95-0004	11-00002	0.4167–0.6667	SOIL	5.3 (U)	—	—	0.53 (U)	—	—	1.1 (U)	—	—	2.19
0311-95-0005	11-00003	0–0.5	SOIL	5.3 (U)	—	—	0.53 (U)	—	—	1.1 (U)	—	_	2.1
0311-95-0006	11-00003	0.5–0.9167	SOIL	5.4 (U)	—	—	0.54 (U)	—	—	1.1 (U)	—	_	—
0311-95-0007	11-00004	0.5–1	SOIL	5.1 (U)	—	—	0.51 (U)	—	—	1.1 (U)	—	—	—
0311-95-0008	11-00004	1–1.33	QBT4	5.2 (U)	—	—	—	—	—	1 (U)	—	_	—
0311-96-0001	11-00013	0–0.5	FILL	—	—	—	—	—	—	—	—	1.5 (J)	NA ^f
0311-96-0002	11-00014	0–0.5	FILL	1.7 (J)	—	—	—	—	—	—	—	0.88 (U)	NA
0311-96-0003	11-00015	0–0.5	FILL	—	—	—	—	—	—	—	—	0.76 (U)	NA
0311-96-0004	11-00016	0.5–1	FILL	0.9 (J)	—	—	—	—	—	—	—	0.76 (U)	NA
0311-96-0005	11-00017	0–0.5	FILL	2 (J)	—		—	—	—	—	—	0.8 (U)	NA
0311-96-0006	11-00018	3–3.5	FILL	—	—	_	_	—	—	—	—	1.2 (J)	NA

Table 2.1-2Inorganic Chemicals above BVs at SWMU 11-001(c)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

 e — = Not detected or not above BV.

^f NA = Not analyzed.

Sample ID	Location ID	Depth (ft)	Media	Benzoic Acid	Di-n-butylphthalate
Construction W	orker SSL ^a			952000	23800
Industrial SSL ^b				2500000 ^c	68400
Residential SSL	b			245000 [°]	6110
0311-95-0001	11-00001	0–0.5	SOIL	0.16 (J)	0.1 (J)
0311-95-0002	11-00001	0.5–0.8333	QBT4	0.12 (J)	d
0311-95-0003	11-00002	0–0.33	FILL	0.085 (J)	
0311-95-0004	11-00002	0.4167–0.6667	SOIL	0.06 (J)	—
0311-95-0005	11-00003	0–0.5	SOIL	0.089 (J)	_

Table 2.1-3Organic Chemicals Detected at SWMU 11-001(c)

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b SSLs are from NMED (2009, 108070), unless otherwise noted.

^c SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^d — = Not detected.

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	Cyanide (Total)
0311-95-0012	11-00008	1–1.5	SOIL	1251	1252	1251	1252

 Table 2.2-1

 Samples Collected and Analyses Requested at AOC 11-012(a)

Note: Numbers in analyte columns are request numbers.

	0				()	
Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Cyanide (Total)
Soil BV ^a				0.83	0.4	0.5
Construction W	orker SSL ^b			124	309	6190
Industrial SSL ^c				454	1120	227000
Residential SSL	c			31.3	77.9	1560
0311-95-0012	11-00008	1–1.5	SOIL	5.5 (U)	0.55 (U)	1.12 (U)

Table 2.2-2Inorganic Chemicals above BVs at AOC 11-012(a)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070).

 Table 2.3-1

 Samples Collected and Analyses Requested at AOC 11-012(b)

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	Cyanide (Total)
0311-95-0014	11-00010	0.5–1	SOIL	328	329	328	329

Note: Numbers in analyte columns are request numbers.

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Cyanide (Total)
Soil BV ^a				0.83	0.4	0.5
Construction We	orker SSL ^b			124	309	6190
Industrial SSL ^c				454	1120	227000
Residential SSL	с			31.3	77.9	1560
0311-95-0014	11-00010	0.5–1	SOIL	5.9 (U)	0.592 (U)	1.2 (U)

Table 2.3-2 Inorganic Chemicals above BVs at AOC 11-012(b)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070).

	- j			•••••=(*)	
Sample ID	Location ID	Depth (ft)	Media	Benzoic Acid	Di-n-butylphthalate
Construction W	orker SSL ^a			952000	23800
Industrial SSL ^b				2500000 ^c	68400
Residential SSL	b			245000 ^c	6110
0311-95-0014	11-00010	0.5–1	SOIL	0.056 (J)	0.061 (J)

Table 2.3-3Organic Chemicals Detected at AOC 11-012(b)

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

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b SSLs are from NMED (2009, 108070).

^c SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

Sample ID	Location ID	Depth (ft)	Media	Metals	SVOC	TPH-DRO	TPH-GRO	VOC
RE16-03-50405	16-03-21705	0.5–0.67	SOIL	1508S	1508S	1508S	1508S	1508S
RE16-03-50407	16-21943	0.5–0.67	SOIL	1508S	1508S	1508S	1508S	1508S
RE16-03-50410	16-22323	1.33–1.5	SOIL	1508S	1508S	1508S	1508S	1508S
RE16-03-50411	16-22327	1.33–1.5	SOIL	1508S	1508S	1508S	1508S	1508S

 Table 3.1-1

 Samples Collected and Analyses Requested at SWMU 16-001(d)

Note: Numbers in analyte columns are request numbers.

Table 3.1-2
Inorganic Chemicals above BVs at SWMU 16-001(d)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Calcium
Soil BV ^a				29200	6120
Construction W	orker SSL ^b			40700	na ^c
Industrial SSL ^d				1130000	na
Residential SSL	d			78100	na
RE16-03-50407	16-21943	0.5–0.67	SOIL	e	8680
RE16-03-50410	16-22323	1.33–1.5	SOIL	31400	—

Notes: Results are in mg/kg.

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c na = Not available.

^d SSLs are from NMED (2009, 108070).

 e — = Not detected or not above BV.

Table 3.1-3 Organic Chemicals Detected at SWMU 16-001(d)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Chrysene	Dibenzofuran	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	TPH-DRO
Construction W	orker SSL ^a			18600	66800	213	21.3	213	20600	552	8910	8910	702	7150	6680	na ^b
Industrial SSL ^c				36700	183000	23.4	2.34	23.4	2340	1000 ^d	24400	24400	252	20500	18300	200 ^e
Residential SSL	с			3440	17200	6.21	0.621	6.21	621	78 ^d	2290	2290	45	1830	1720	200 ^e
RE16-03-50405	16-03-21705	0.5–0.67	SOIL	0.075	0.12	0.26	0.24	0.42	0.29	0.034	0.64	0.066	0.061	0.53	0.66	60
RE16-03-50407	16-21943	0.5–0.67	SOIL	f	0.053	0.11	0.1	0.16	0.11		0.28	—	_	0.22	0.31	_
RE16-03-50411	16-22327	1.33–1.5	SOIL	0.071	0.084	0.17	0.16	0.23	0.16	0.037	0.42	0.052	0.062	0.42	0.52	—

Notes: Results are in mg/kg.

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).
 ^b na = Not available.

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^e SSLs are from NMED (2006, 094614).

^f — = Not detected.

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	VOC	Cyanide (Total)
0316-95-0256	16-01587	0–0.5	SOIL	1391	1392, 1393	1391	*	1392
0316-95-0257	16-01587	3–4	QBT4	1391	1392, 1393	1391	1391	1392
0316-95-0258	16-01587	5.5-6.5	QBT4	1391	1392, 1393	1391	1391	1392
0316-95-0262	16-01588	0–0.5	SOIL	306	307, 308	306	—	307
0316-95-0263	16-01589	0–0.5	SOIL	306	307, 308	306	—	307
0316-95-0264	16-01590	0–0.5	SOIL	306	307, 308	306	_	307
0316-95-0265	16-01591	0–0.5	SOIL	306	307, 308	306	_	307
0316-95-0266	16-01592	0–0.5	SOIL	306	307, 308	306	_	307
0316-95-0259	16-01666	0–0.5	SED	1391	1392, 1393	1391	_	1392
0316-95-0260	16-01666	0.67–1	QBT4	1391	1392, 1393	1391	1391	1392

 Table 3.2-1

 Samples Collected and Analyses Requested at SWMU 16-003(a)

Note: Numbers in analyte columns are request numbers.

* — =Analyses not requested.

Table 3.2-2
Inorganic Chemicals above BVs at SWMU 16-003(a)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Cadmium	Chromium	Copper	Cyanide (Total)	Lead	Magnesium	Selenium	Silver	Uranium	Zinc
Qbt2, 3, 4 BV ^a				7340	0.5	2.79	46	1.63	7.14	4.66	0.5	11.2	1690	0.3	1	2.4	63.5
Sediment BV ^a				15400	0.83	3.98	127	0.4	10.5	11.2	0.82	19.7	2370	0.3	1	2.22	60.2
Soil BV ^a				29200	0.83	8.17	295	0.4	19.3	14.7	0.5	22.3	4610	1.52	1	1.82	48.8
Construction V	Norker SSL	ь -		40700	124	65.4	4350	309	449 ^c	12400	6190	800	na ^d	1550	1550	929	92900
Industrial SSL	e			1130000	454	17.7	224000	1120	2920 [°]	45400	227000	800	na	5680	5680	3410	341000
Residential SS	SL ^e			78100	31.3	3.9	15600	77.9	219 [°]	3130	1560	400	na	391	391	235	23500
0316-95-0256	16-01587	0–0.5	SOIL	f	7.7 (U)	_	_	0.77 (U)	—	22.9	1.63 (U)	_	_	—	_	4.68	303
0316-95-0257	16-01587	3–4	QBT4	_	5.76 (U)			_	_	10	1.18 (U)			_	_		76.6
0316-95-0258	16-01587	5.5–6.5	QBT4	—	4.7 (U)		_	—	—	7.29	1.01 (U)	_		—	—		—
0316-95-0262	16-01588	0–0.5	SOIL	_	8.1 (U)			0.851	_	17.1	0.817 (U)			_	_	3.81	265
0316-95-0263	16-01589	0–0.5	SOIL	_	7.83 (U)			0.885	_	_	0.794 (U)			_	_	6.29	152
0316-95-0264	16-01590	0–0.5	SOIL	—	10.1 (U)		_	1.03	—	24.4	1.04 (U)	_		—	1.01 (U)	3.46	277
0316-95-0265	16-01591	0–0.5	SOIL	_	7.55 (U)			0.755 (U)	_	—	1.6 (U)			_	_	2.45	61.5
0316-95-0266	16-01592	0–0.5	SOIL	—	6.21 (U)			0.621 (U)	_	—	0.649 (U)			_	_		—
0316-95-0259	16-01666	0–0.5	SED	—	7.46 (U)	_	_	0.746 (U)	11.3 (J-)	24.4	1.5 (U)	21.7	_	0.363 (UJ)	_	4.58	340
0316-95-0260	16-01666	0.67–1	QBT4	9700	6.53 (U)	2.99	47.8	_	7.61 (J-)	9.15	1.38 (U)	28.8	1740	0.335 (UJ)	_	2.48	114

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are for hexavalent chromium.

^d na = Not available.

^e SSLs are from NMED (2009, 108070).

^f — = Not detected or not above BV.

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl Alcohol	Bis(2-ethylhexyl)phthalate	Chrysene	Dibenzo(a,h)anthracene	Diethylphthalate	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Methylene Chloride	Methylphenol[4-]	Naphthalene	Phenanthrene	Pyrene	Trichlorofluoromethane
Construction	Worker SS	L ^a		18600	66800	213	21.3	213	6680 ^b	2060	952000	na ^c	4760	20600	21.3	191000	8910	8910	213	10600	na	702	7150	6680	5820
Industrial SSL ^d				36700	183000	23.4	2.34	23.4	18300 ^b	234	2500000 ^e	62000 ^e	1370	2340	2.34	547000	24400	24400	23.4	1090	3400 ^f	252	20500	18300	6760
Residential SS	SL ^d			3440	17200	6.21	0.621	6.21	1720 ^b	62.1	245000^e	6100 ^e	347	621	0.621	48900	2290	2290	6.21	199	310 ^f	45	1830	1720	2010
0316-95-0256	16-01587	0–0.5	SOIL	0.096 (J)	0.11 (J)	0.26 (J)	0.35 (J)	0.47 (J)	0.24 (J)	0.17 (J)	0.36 (J)	g	—	0.42 (J)	—	—	0.81	0.094 (J)	0.26 (J)	NA ^h	0.3 (J)	0.1 (J)	0.69	0.59	NA
0316-95-0257	16-01587	3–4	QBT4	—	—	—	—	—	—	—	—	—	—	—	—	—	0.059 (J)	—	—	0.003 (J)			0.04 (J)	0.052 (J)	0.004 (J)
0316-95-0258	16-01587	5.5–6.5	QBT4	—	—	—	_	_	_	—	—	—	_	—	—	0.038 (J)	_	—	—	0.003 (J)	—		—	_	0.01
0316-95-0262	16-01588	0–0.5	SOIL	—	0.12 (J)	0.43 (J)	0.62	0.85	0.44 (J)	0.32 (J)	—	—	—	0.66	0.084 (J)	—	1.4	_	0.43 (J)	NA			0.65	1	NA
0316-95-0263	16-01589	0–0.5	SOIL	0.098 (J)	0.14 (J)	0.23 (J)	0.32 (J)	0.4 (J)	0.2 (J)	0.16 (J)	0.091 (J)	—	—	0.32 (J)	0.14 (J)	—	0.76	0.099 (J)	0.21 (J)	NA	0.09 (J)	0.17 (J)	0.63	0.55	NA
0316-95-0264	16-01590	0–0.5	SOIL	—	0.098 (J)	0.33 (J)	0.5 (J)	0.68 (J)	0.36 (J)	0.26 (J)	0.4 (J)	0.082 (J)	_	0.53 (J)	—	—	1	—	0.37 (J)	NA			0.48 (J)	0.84	NA
0316-95-0265	16-01591	0–0.5	SOIL	—	—	—	0.11 (J)	0.16 (J)	0.079 (J)	—	—	—	_	0.12 (J)	—	—	0.22 (J)	—	—	NA	—	-	0.088 (J)	0.18 (J)	NA
0316-95-0266	16-01592	0–0.5	SOIL	—	—	—	—	0.082 (J)	—	—	0.37 (J)	—	—	—	—	—	0.12 (J)	—	—	NA	—		0.057 (J)	0.089 (J)	NA
0316-95-0259	16-01666	0–0.5	SED	0.088 (J)	0.27 (J)	1	1.3	1.9	0.84	0.7	_	0.052 (J)	1.6	_	0.17 (J)	_	2.9	0.096 (J)	0.87	NA	—	_	1.4	2.1	NA
0316-95-0260	16-01666	0.67–1	QBT4	_	0.072 (J)	0.26 (J)	0.33 (J)	0.5	0.26 (J)	0.18 (J)	_	_	_	0.44 (J)	0.064 (J)	_	0.74	_	0.27 (J)	0.004 (J)	_	_	0.44 (J)	0.6	0.01

Table 3.2-3Organic Chemicals Detected at SWMU 16-003(a)

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b Pyrene used as a surrogate based on structural similarity.

^c na = Not available.

 $^{\rm d}$ SSLs are from NMED (2009, 108070), unless otherwise noted.

^e EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^f SSLs are from EPA (2007, 099314).

^g — = Not detected.

^h NA = Not analyzed.

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	VOC	Cyanide (Total)
0316-95-0177	16-01503	0–0.5	SED	621	622, 623	621	*	622
0316-95-0178	16-01503	1.83–2.33	QBT4	621	622, 623	621	621	622
0316-95-0201	16-01503	3.5–5.5	QBT4	923	924, 925	923	923	924
0316-95-0205	16-01504	0–0.5	SED	140	141, 142	140	_	141
0316-95-0206	16-01505	0–0.5	SED	140	141, 142	140		141
0316-95-0207	16-01506	0–0.5	SOIL	140	141, 142	140	—	141
0316-95-0208	16-01507	0–0.5	SOIL	140	141, 142	140	_	141
0316-95-0209	16-01508	0–0.5	SED	140	141, 142	140		141
0316-95-0180	16-01659	0–0.5	SED	621	622, 623	621	—	622
0316-95-0181	16-01659	2.5–3	QBT4	621	622, 623	621	621	622
0316-95-0204	16-01659	4.5-6.5	QBT4	972	978, 979	972	972	978

Note: Numbers in analyte columns are request numbers. * — =Analyses not requested.

Table 3.3-1 Samples Collected and Analyses Requested at SWMU 16-003(b)

Table 3.3-2 Inorganic Chemicals above BVs at SWMU 16-003(b)

Sample ID	Location ID	Dopth (ft)	Modia	luminum	ntimony	arium	admium	alcium	hromium	obalt	opper	yanide (Total)	uo	ead	lagnesium	anganese	ercury	ickel	elenium	ilver	ranium	anadium	inc
	LUCATION ID	Deptil (It)	Ivieula	<	<u>ح</u>	<u> </u>		0	U 744	0	ن ۵		<u> </u>	<u> </u>	≥ 4000	≥ 400	2	2	م	N N	\supset	>	
QD12, 3, 4 BV				7340	0.5	46	1.63	2200	7.14	3.14	4.66	0.5	14500	11.2	1690	482	0.1	6.58	0.3	1	2.4	17	63.5
Sediment BV ^a				15400	0.83	127	0.4	4420	10.5	4.73	11.2	0.82	13800	19.7	2370	543	0.1	9.38	0.3	1	2.22	19.7	60.2
Soil BV ^a				29200	0.83	295	0.4	6120	19.3	8.64	14.7	0.5	21500	22.3	4610	671	0.1	15.4	1.52	1	1.82	39.6	48.8
Construction Worker SSL ^b				40700	124	4350	309	na ^c	449 ^d	34.6	12400	6190	217000	800	na	463	92.9	6190	1550	1550	929	1550	92900
Industrial SSL ^e				1130000	454	224000	1120	na	2920 ^d	300 ^f	45400	227000	795000	800	na	145000	310 ^f	22700	5680	5680	3410	5680	341000
Residential SSI	е			78100	31.3	15600	77.9	na	219 ^d	23 ^f	3130	1560	54800	400	na	10700	23 ^f	1560	391	391	235	391	23500
0316-95-0177	16-01503	0–0.5	SED	g	6.1 (U)	295	0.97	_	38.6	7.9	43.5	1.3 (U)	15600	265	—	—	0.23 (U)	13.7	0.31 (UJ)	1.4	2.77	28.3	175 (J-)
0316-95-0178	16-01503	1.83–2.33	QBT4	15400	5.9 (U)	164	—	_	8.7	8.9	8.3	1.2 (U)	14900	_	2070	596	_	7.6	—	—	2.53	22.5	—
0316-95-0201	16-01503	3.5–5.5	QBT4	—	5.79 (U)	50.1	—	—	17.8 (J-)	_	—	1.2 (U)	—	—	—	—	—	—	—	—	—	_	—
0316-95-0205	16-01504	0–0.5	SED	—	6 (U)	149	0.6 (U)		—	6.5	—	1.2 (U)	—	_	—	—	_	—	—	_	2.83	20.2	—
0316-95-0206	16-01505	0–0.5	SED	—	6 (U)	232	0.6 (U)	—		7.5	—	1.2 (U)	—	—	—	—	_	—	0.302 (UJ)	—	2.43	19.9	_
0316-95-0207	16-01506	0–0.5	SOIL	_	5.6 (U)	523	1.11	_	—		16.2	1.2 (U)	_	42.4	—	—	0.16	—	—		3.98		67.1
0316-95-0208	16-01507	0–0.5	SOIL	—	6.5 (U)	500	0.71	—	—	-	—	1.3 (U)	—	40		—	—	—	—	—	3.05	-	—
0316-95-0209	16-01508	0–0.5	SED	—	5.8 (U)	244	0.58 (U)	—	—	6.1	—	1.2 (U)	—		—	—	—	—	—		3.67	_	—
0316-95-0180	16-01659	0–0.5	SED	_	5.8 (U)	148	0.58 (U)	—	—	7.2	_	1.2 (U)	_	21.2	—	—	—	_	—	—	2.55	24.7	—
0316-95-0181	16-01659	2.5–3	QBT4	17000	5.8 (U)	158	—	2700	13.8	7.1	9.5	1.2 (U)	17400	12.5	3440	—	—	12.2	—	—	2.54	27.2	—
0316-95-0204	16-01659	4.5–6.5	QBT4	—	5.4 (U)	48 (J+)	—	—	58.9	—	—	1.1 (U)	—	—	—	—	—	—	—	—	—	—	—

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c na = Not available.

^d SSLs are for hexavalent chromium.

^e SSLs are from NMED (2009, 108070), unless otherwise noted.

^f SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

 g — = Not detected or not above BV.

Table 3.3-3Organic Chemicals Detected at SWMU 16-003(b)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Amino-2,6-dinitrotoluene[4-]	Amino-4,6-dinitrotoluene[2-]	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate	Chrysene	Dibenz(a,h)anthracene
Construction Wo		18600	6680 ^b	263000	601	601	66800	213	21.3	213	6680 ^b	2060	4760	20600	21.3		
Industrial SSL ^c		36700	18300 ^b	851000	1900 ^d	2000 ^d	183000	23.4	2.34	23.4	18300 ^b	234	1370	2340	2.34		
Residential SSL ^c	:			3440	1720 ^b	67500	150 ^d	150 ^d	17200	6.21	0.621	6.21	1720 ^b	62.1	347	621	0.621
0316-95-0177	16-01503	0–0.5	SED	0.76	0.058 (J)	NA ^e	f	—	1.4	4.7	3.4	6	2.7	1.6	_	4.7	0.78
0316-95-0178	16-01503	1.83–2.33	QBT4	_	_	0.004 (J)		—	—	0.1 (J)	0.12 (J)	0.16 (J)	0.098 (J)	0.072 (J)		0.14 (J)	0.076 (J)
0316-95-0201	16-01503	3.5–5.5	QBT4	_	_	0.019 (J)		—	—			_	—	—			
0316-95-0205	16-01504	0–0.5	SED	_	_	NA		—	0.084 (J)	0.34 (J)	0.4	0.45	0.24 (J)	0.23 (J)		0.44	0.06 (J)
0316-95-0206	16-01505	0–0.5	SED	0.61	—	NA		—	1	1.8	1.8	2.3	1	0.83	0.28 (J)	2	0.27 (J)
0316-95-0207	16-01506	0–0.5	SOIL	0.048 (J)	_	NA	0.59	0.381	0.21 (J)	1.1	1.1	1.6	0.65	—	0.36 (J)	1.2	0.19 (J)
0316-95-0208	16-01507	0–0.5	SOIL	1.5	_	NA	1.07	1.46	2.8	4.8	4.8	6.1	2.6	2.7	0.25 (J)	5.3	0.67 (J)
0316-95-0209	16-01508	0–0.5	SED	—	_	NA		_	0.041 (J)	0.16 (J)	0.19 (J)	0.25 (J)	0.14 (J)	0.12 (J)	0.27 (J)	0.23 (J)	
0316-95-0180	16-01659	0–0.5	SED	0.077 (J)	_	NA	_	_	0.15 (J)	0.49	0.56	0.79	0.32 (J)	0.3 (J)	_	0.63	0.093 (J)
0316-95-0181	16-01659	2.5–3	QBT4	_	_	0.006 (J)	_	—	_	_	_	_	_	_	_	_	_
Table 3.3-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dibenzofuran	Dinitrotoluene[2,4-]	Fluoranthene	Fluorene	ХМН	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Naphthalene	Nitroglycerin	Phenanthrene	Pyrene	RDX	Tetryl	Trinitrobenzene[1,3,5-]	Trinitrotoluene[2,4,6-]
Construction Wor	ker SSL ^a			552	476	8910	8910	11900	213	1240	702	23.8	7150	6680	715	953	8760	141
Industrial SSL ^c				1000 ^d	103	24400	24400	34200	23.4	4100 ^d	252	68.4	20500	18300	174	2740	27000 ^d	469
Residential SSL ^c				78 ^d	15.7	2290	2290	3060	6.21	310 ^d	45	6.11	1830	1720	44.2	244	2200 ^d	35.9
0316-95-0177	16-01503	0–0.5	SED	0.3 (J)	0.755	8.6	0.64	7.13	3.1	0.15 (J)	0.35 (J)	NA	4.4	10	_	1.81	0.183	2.28
0316-95-0178	16-01503	1.83–2.33	QBT4		_	0.22 (J)		0.272	0.095 (J)	—	—	NA	0.1 (J)	0.2 (J)	—			—
0316-95-0201	16-01503	3.5–5.5	QBT4			—	_	—	—	—	—	NA	—	—	—			—
0316-95-0205	16-01504	0–0.5	SED			0.74		24.7	0.31 (J)	—	—		0.34 (J)	0.65	_			—
0316-95-0206	16-01505	0–0.5	SED	0.3 (J)		3.8	0.59	5.84	1.2	0.2 (J)	0.64	3.78	3.2	4.1	—	0.796		—
0316-95-0207	16-01506	0–0.5	SOIL			1.6	0.045 (J)	234	0.74	—	—		0.43	2.3	2.04			0.841
0316-95-0208	16-01507	0–0.5	SOIL	0.7 (J)		9.4	1.4	31.4	2.9	0.45 (J)	1.3		8.2	12	_	0.229		3.24
0316-95-0209	16-01508	0–0.5	SED		_	0.38 (J)	_	_	0.15 (J)	_	_	_	0.17 (J)	0.35 (J)	_	_		_
0316-95-0180	16-01659	0–0.5	SED	_	_	1.2	0.066 (J)	0.279	0.35 (J)	_	_	NA	0.64	0.95	_	_		—
0316-95-0181	16-01659	2.5–3	QBT4		_	_		0.395	_	_	_	NA		_		_		—

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b Pyrene used as a surrogate based on structural similarity.

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^e NA = Not analyzed.

^f — = Not detected.

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	VOC	Cyanide (Total)
0316-95-0188	16-01513	0–0.16	SED	923	924, 925	923	*	924
0316-95-0189	16-01513	0.17–1	QBT4	1391	1392, 1393	1391	1391	1392
0316-95-0190	16-01513	2–3.5	QBT4	1391	1392, 1393	1391	1391	1392
0316-95-0194	16-01514	0–0.5	SED	140	141, 142	140	—	141
0316-95-0195	16-01515	0–0.5	SED	140	141, 142	140	_	141
0316-95-0196	16-01516	0–0.5	SED	140	141, 142	140	_	141
0316-95-0197	16-01517	0–0.5	SED	140	141, 142	140	_	141
0316-95-0198	16-01518	0–0.5	SOIL	140	141, 142	140	_	141
0316-95-0191	16-01660	0–0.33	SED	923	924, 925	923	_	924
0316-95-0193	16-01660	2.5–4	QBT4	980	981, 982	980	980	981

Note: Numbers in analyte columns are request numbers. * — =Analyses not requested.

Table 3.4-1 Samples Collected and Analyses Requested at SWMU 16-026(v)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Mercury	Nickel	Selenium	Silver	Uranium	Vanadium	Zinc
Qbt2, 3, 4 BV ^a				7340	0.5	2.79	46	1.21	1.63	2200	7.14	3.14	4.66	0.5	14500	11.2	0.1	6.58	0.3	1	2.4	17	63.5
Sediment BV ^a				15400	0.83	3.98	127	1.31	0.4	4420	10.5	4.73	11.2	0.82	13800	19.7	0.1	9.38	0.3	1	2.22	19.7	60.2
Soil BV ^a				29200	0.83	8.17	295	1.83	0.4	6120	19.3	8.64	14.7	0.5	21500	22.3	0.1	15.4	1.52	1	1.82	39.6	48.8
Construction W	Vorker SSL ^b			40700	124	65.4	4350	144	309	na ^c	449 ^d	34.6	12400	6190	217000	800	92.9	6190	1550	1550	929	1550	92900
Industrial SSL ^e				1130000	454	17.7	224000	2260	1120	na	2920 ^d	300 ^f	45400	227000	795000	800	310 ^f	22700	5680	5680	3410	5680	341000
Residential SS	Le			78100	31.3	3.9	15600	156	77.9	na	219 ^d	23 ^f	3130	1560	54800	400	23 ^f	1560	391	391	235	391	23500
0316-95-0188	16-01513	0–0.16	SED	g	7.13 (U)	—	194		0.713 (U)		26.5 (J-)		412 (J-)	1.45 (U)	36100	103 (J-)	4.11	26.1	0.352 (U)	5.27	_	_	321
0316-95-0189	16-01513	0.17–1	QBT4	—	5.45 (U)	2.83	317	_	—	—	19.6		65.8	1.12 (U)		79.9	4.33	9.88	—	5.25	3.86	_	101
0316-95-0190	16-01513	2–3.5	QBT4	8080	5.71 (U)	—	190	2.02	—	3610	—	_	50.4	1.17 (U)	_	—	—	22	—	—	_	_	73.4
0316-95-0194	16-01514	0–0.5	SED	—	12 (U)	—	—	_	1.2 (U)	—	14.8	_	32.8	2.5 (U)	_	33.6	9.2	—	0.604 (UJ)	4.1	3.41	_	141
0316-95-0195	16-01515	0–0.5	SED	—	11.9 (U)	—	—	_	1.2 (U)	—	23.8		53.3	2.5 (U)		43	4.8	—	3.03 (UJ)	5	3.61	_	157
0316-95-0196	16-01516	0–0.5	SED	—	10.7 (U)	—	—		1.1 (U)	_	14.2	4.9 (J)	19.3	2.2 (U)	_	23	1.4	—	2.77 (UJ)	1.7 (J)	3.25	23	71.9
0316-95-0197	16-01517	0–0.5	SED	—	8.6 (U)	—	142	_	0.86 (U)	—	—	_	_	1.7 (U)	_	—	0.3	—	2.1 (UJ)	—	2.89	_	_
0316-95-0198	16-01518	0–0.5	SOIL	—	6.5 (U)	—	—	_	0.65 (U)	_	—	_	_	1.3 (U)	_	—		—	1.67 (UJ)	—	2.41	_	_
0316-95-0191	16-01660	0–0.33	SED	—	8.76 (U)	—	_		0.876 (U)	_	24.4 (J-)		126 (J-)	1.82 (U)	_	64.7 (J-)	4.17	14.4	0.438 (U)	7.77	3.7		167
0316-95-0193	16-01660	2.5–4	QBT4	_	5.5 (U)	_			_		160	_		1.1 (U)	_	—		—	_			_	

Table 3.4-2Inorganic Chemicals above BVs at SWMU 16-026(v)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c na = Not available.

^d SSLs are for hexavalent chromium.

^e SSLs are from NMED (2009, 108070), unless otherwise noted.

^f SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^g — = Not detected or not above BV.

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Diethylphthalate
Construction	Worker SSL	a		18600	66800	213	21.3	213	6680 ^b	2060	952000	4760	20600	21.3	552	191000
Industrial SSL	c			36700	183000	23.4	2.34	23.4	18300 ^b	234	2500000	1370	2340	2.34	1000 ^d	547000
Residential SS	SL ^c			3440	17200	6.21	0.621	6.21	1720 ^b	62.1	245000	347	621	0.621	78 ^d	48900
0316-95-0188	16-01513	0–0.16	SED	0.32 (J)	1.3	4.9	3.4	6.5	1.2	2.3	e	—	5.8	0.36 (J)	0.13 (J)	—
0316-95-0189	16-01513	0.17–1	QBT4	—	—	_	—	—	—	—	—	—		—	—	0.093 (J)
0316-95-0190	16-01513	2–3.5	QBT4	0.18 (J)	0.36 (J)	1.4	1.6	2.4	0.81	0.86	—	_	1.9	0.24 (J)	0.071 (J)	_
0316-95-0194	16-01514	0–0.5	SED	0.33 (J)	0.72 (J)	1.9	2	2.2	1.2	1	0.59 (J)	2	2.2	0.31 (J)	0.12 (J)	—
0316-95-0195	16-01515	0–0.5	SED	—	—	—	—	2.5 (J)	—	—	—	2.9 (J)		—	—	—
0316-95-0196	16-01516	0–0.5	SED	—	—	_	—	—	—	—	—	0.44 (J)	_	—	—	—
0316-95-0197	16-01517	0–0.5	SED	—	—	_	—	—	—	—	—	1.7	_	—	—	—
0316-95-0198	16-01518	0–0.5	SOIL	—	—	_	—	—	—	—	—	0.098 (J)	0.074 (J)	—	—	—
0316-95-0191	16-01660	0–0.33	SED	0.67 (J)	1.3 (J)	3.6	3.9	6.1	1.4 (J)	2.7 (J)	_	_	5.6	0.44 (J)	0.35 (J)	_
0316-95-0193	16-01660	2.5–4	QBT4	_	0.1 (J)	_	_	_	_	_	_	0.24 (J)	0.041 (J)	_	_	_

Table 3.4-3Organic Chemicals Detected at SWMU 16-026(v)

Table 3.4-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Methylene Chloride	Methylphenol[4-]	Naphthalene	Phenanthrene	Pyrene	TATB	Tetryl	Trichlorofluoromethane	Trinitrotoluene[2,4,6-]
Construction V	Norker SSL [®]	a		8910	8910	213	10600	na ^f	702	7150	6680	na	953	5820	141
Industrial SSL	0			24400	24400	23.4	1090	3400 ^g	252	20500	18300	na	2740	6760	469
Residential SS	L ^c			2290	2290	6.21	199	310 ^g	45	1830	1720	na	244	2010	35.9
0316-95-0188	16-01513	0–0.16	SED	10	0.34 (J)	1.4	NA ^h		0.08 (J)	4.5	7.3	NA	0.122	NA	_
0316-95-0189	16-01513	0.17–1	QBT4	—	_	_	0.004 (J)	_	_	—	—	NA	—	0.007	—
0316-95-0190	16-01513	2–3.5	QBT4	3.3	0.16 (J)	0.93	0.004 (J)		0.07 (J)	1.7	2.9	NA	—	0.013	0.09
0316-95-0194	16-01514	0–0.5	SED	4.5	0.31 (J)	1.3	NA	0.42 (J)	0.1 (J)	2.8	5	10.5	0.101	NA	
0316-95-0195	16-01515	0–0.5	SED	4.2 (J)	_		NA			2.2 (J)	4.8 (J)	11.1	-	NA	
0316-95-0196	16-01516	0–0.5	SED	0.94 (J)	_		NA			0.51 (J)	1 (J)	2.41	_	NA	
0316-95-0197	16-01517	0–0.5	SED	—	_	_	NA	0.06 (J)		—	0.067 (J)		_	NA	
0316-95-0198	16-01518	0–0.5	SOIL	0.14 (J)	_		NA			0.093 (J)	0.12 (J)		-	NA	
0316-95-0191	16-01660	0–0.33	SED	10	0.66 (J)	1.6 (J)	NA	_	0.36 (J)	6.6	9.5	NA	_	NA	—
0316-95-0193	16-01660	2.5–4	QBT4	0.058 (J)	_	_	_	_	_	0.048 (J)	0.058 (J)	NA	_	_	_

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070). ^b Pyrene used as a surrogate based on structural similarity.

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070)

^e — = Not detected or not above BV.

^f na = Not available.

^g SSLs are from EPA (2007, 099314).

^h NA = Not analyzed.

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	VOC	Cyanide (Total)
0316-95-0154	16-01495	0–0.5	SED	874	875	874	*	875
0316-95-0155	16-01495	6.4–8	QBT4	1183	1184	1183	1183	1184
0316-95-0156	16-01495	8.5–9.5	QBT4	1183	1184	1183	1183	1184
0316-95-0160	16-01496	0–0.5	SOIL	903	904	903	—	904
0316-95-0161	16-01496	3–4.5	QBT4	1251	1252	1251	1251	1252
0316-95-0162	16-01496	5.5–6.5	QBT4	1251	1252	1251	1251	1252
0316-95-0166	16-01497	0–0.5	SOIL	903	904	903	—	904
0316-95-0167	16-01497	6–7.5	SOIL	1297	1298	1297	1297	1298
0316-95-0168	16-01497	8.5–10.5	QBT4	1297	1298	1297	1297	1298
0316-95-0172	16-01498	0–0.5	SED	874	875	874	—	875
0316-95-0173	16-01499	0–0.5	SED	874	875	874	—	875
0316-95-0174	16-01500	0–0.5	SED	874	875	874	—	875
0316-95-0175	16-01501	0–0.5	SED	874	875	874	—	875
0316-95-0176	16-01502	0–0.5	SED	874	875	874	—	875
0316-95-0169	16-01658	0–0.5	SED	903	904	903	—	904
0316-95-0170	16-01658	6.5–8	QBT4	1391	1392	1391	1391	1392
0316-95-0171	16-01658	8.5–10.5	QBT4	1391	1392	1391	1391	1392
0316-95-0157	16-01672	0–0.5	SED	874	875	874	—	875
0316-95-0158	16-01672	8–9	QBT4	1268	1269	1268	1268	1269
0316-95-0159	16-01672	9–10	QBT4	1268	1269	1268	1268	1269
0316-95-0163	16-01673	0–0.5	SED	874	875	874	_	875
0316-95-0164	16-01673	0.6–2	QBT4	1268	1269	1268	1268	1269
0316-95-0165	16-01673	2–4.5	QBT4	1268	1269	1268	1268	1269

Note: Numbers in analyte columns are request numbers. * — =Analyses not requested.

Table 3.5-1 Samples Collected and Analyses Requested at SWMU 16-030(h)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Thallium	Vanadium	Zinc
Qbt2, 3, 4 BV ^a		•	•	7340	0.5	2.79	46	1.21	1.63	2200	7.14	3.14	4.66	0.5	14500	11.2	1690	482	0.1	6.58	3500	0.3	1	1.1	17	63.5
Sediment BV ^a				15400	0.83	3.98	127	1.31	0.4	4420	10.5	4.73	11.2	0.82	13800	19.7	2370	543	0.1	9.38	2690	0.3	1	0.73	19.7	60.2
Soil BV ^a				29200	0.83	8.17	295	1.83	0.4	6120	19.3	8.64	14.7	0.5	21500	22.3	4610	671	0.1	15.4	3460	1.52	1	0.73	39.6	48.8
Construction V	Vorker SSL ^I	b		40700	124	65.4	4350	144	309	na ^c	449 ^d	34.6	12400	6190	217000	800	na	463	92.9	6190	na	1550	1550	20.4	1550	92900
Industrial SSL ⁶	9			1130000	454	17.7	224000	2260	1120	na	2920 ^d	300 ^f	45400	227000	795000	800	na	145000	310 ^f	22700	na	5680	5680	74.9	5680	341000
Residential SS	L ^e			78100	31.3	3.9	15600	156	77.9	na	219 ^d	23 ^f	3130	1560	54800	400	na	10700	23 ^f	1560	na	391	391	5.16	391	23500
0316-95-0154	16-01495	0–0.5	SED	g	6.4 (U)	18.3	705	—	4	—	44.6	—	263	1.3 (U)	103000	94.5	—	—	4.7	23.1	—	0.37 (J)	—	—	114	337
0316-95-0155	16-01495	6.4–8	QBT4	—	6.1 (U)	—	47.6	—	—	—	58.1 (J+)	_	—	1.3 (U)	—	—	—	—	—	—	—	0.31 (U)	—	—	—	—
0316-95-0156	16-01495	8.5–9.5	QBT4	—	5.8 (U)	—	48.2	—	—	—	107 (J+)	—	—	1.2 (U)	—	_	—		—	—	—	—	—	—	—	—
0316-95-0160	16-01496	0–0.5	SOIL	—	6.31 (U)	10.6	7870	—	5.92	7960	38.8	_	571	1.61	46000	82.4	—	—	4.67	20.2	—	—	1.13 (J)	—	—	447
0316-95-0161	16-01496	3–4.5	QBT4	_	6.7 (U)	—	107	—	—	—	—	3.8 (J)	90	1.3 (U)	—	—	—	—	—	20.9	—	0.33 (UJ)	—	—	—	—
0316-95-0162	16-01496	5.5–6.5	QBT4	—	5.6 (U)	—	—	—	—	—	—	132	697	1.2 (U)	_	_	—		—	155	—	—	5.1	—	—	594
0316-95-0166	16-01497	0–0.5	SOIL	—	5.3	—	1860	—	1.3	—	35.5	_	164	1.1 (U)	105000	46.2	—	—	0.2	25.5	—	—	—	—	—	220
0316-95-0167	16-01497	6–7.5	SOIL	—	5.74 (U)	—	—	—	0.574 (U)	—	94.8	12.9	—	1.2 (U)	—	—	—	—	—	49.2 (J-)	—	—	—	—	—	—
0316-95-0168	16-01497	8.5–10.5	QBT4	—	5.6 (U)	—	64.7	—	—	3460	72.8	3.3 (J)	25.3	1.2 (U)	—	15.4	—	—	—	40.9 (J-)	—	—	—	—	—	—
0316-95-0172	16-01498	0–0.5	SED	22900	8 (U)	8.24	1090	—	0.8 (U)	4600	20.7	6.7 (J)	78.5	1.6 (U)	21600	46.3	3240	—	0.13 (J)	10.7	2890	0.41 (J)	—	—	54.5	120
0316-95-0173	16-01499	0–0.5	SED	16800	7.2 (U)	—	531	—	0.72 (U)	—	13.2	5.1 (J)	35.1	1.5 (U)	16000	_	—	—	—	_	—	0.35 (U)	—	—	39.4	71.4
0316-95-0174	16-01500	0–0.5	SED	21000	9.3 (U)	—	985	1.5	0.93 (U)	5490	18.9	6.2 (J)	66.9	1.9 (U)	20500	20.7	3040	—	—	10.3	2900	0.46 (U)	—	—	54.5	103
0316-95-0175	16-01501	0–0.5	SED	—	4.9 (U)	—	—	—	0.49 (U)	—	—	—	—	1 (U)	_	_	—		—	—	—	—	—	—	—	—
0316-95-0176	16-01502	0–0.5	SED	_	5.2 (U)	—	398	—	0.52 (U)	—	—	—	—	1.1 (U)	_	_	—		—	—	—	—	6	—	—	—
0316-95-0169	16-01658	0–0.5	SED	—	5.4 (U)	—	2310	—	2	8170	15.2	—	58.3	1.1 (U)	17600	41.2	—	1860	0.14	_	—	—	—	26 (U)	22.3	340
0316-95-0170	16-01658	6.5–8	QBT4	—	5.3 (U)	—	—	—	—	4950	30.2 (J-)	—	16.4	1.13 (U)		13.9	—		—	18.2	—	—	—	—	—	—
0316-95-0171	16-01658	8.5–10.5	QBT4	—	5.81 (U)	—	—	—	—	—	—	—	28.8	1.17 (U)	_	_	—		—	8.2	—	—	—	_	—	—
0316-95-0157	16-01672	0–0.5	SED	26100	8.2 (U)	5.1	309	1.6	0.82 (U)	—	17.7	—	26.8	1.7 (U)	20900	30.5	3570	—	0.14 (J)	11.7	3070	0.41 (U)	—	—	48	156
0316-95-0158	16-01672	8–9	QBT4	_	5.5 (U)	—	70	—	—	—	—	50.6	3810	1.2 (U)	_	_	—	—	—	626	—	—	3	_	—	1870
0316-95-0159	16-01672	9–10	QBT4	_	5.3 (U)	—	68.5	—	—	—	12.4	40.6	1050	1.1 (U)	—	—	—	—	—	193	—	—	—	—	—	656
0316-95-0163	16-01673	0–0.5	SED	_	5.8 (U)	_	407		0.58 (U)	4570	14.2	_	97.8	1.2 (U)	15600	33.9	_		0.38			—			31.2	112
0316-95-0164	16-01673	0.6–2	QBT4	—	6.3 (U)		377	—	—	—	131	—	23.5	1.3 (U)	—	—	—	—	—	6.6		0.31 (U)	—			—
0316-95-0165	16-01673	2–4.5	QBT4	—	6 (U)	4.1	_	—	—	—	64.9	—	44.4	1.2 (U)		12.2	—		_	38.3	_	—	—	—		_

Table 3.5-2 Inorganic Chemicals above BVs at SWMU 16-030(h)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c na = Not available.

^d SSLs are for hexavalent chromium.

^e SSLs are from NMED (2009, 108070), unless otherwise noted .

^f SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

 g — = Not detected or not above BV.

Table 3.5-3Organic Chemicals Detected at SWMU 16-030(h)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Amino-2,6-dinitrotoluene[4-]	Amino-4,6-dinitrotoluene[2-]	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate	Butylbenzylphthalate
Construction V	Worker SSL	а		18600	6680 ^b	263000	601	601	66800	213	21.3	213	6680 ^b	2060	4760	47600
Industrial SSL	c			36700	18300 ^b	851000	1900 ^d	2000 ^d	183000	23.4	2.34	23.4	18300 ^b	234	1370	9100 ^d
Residential SS	SL ^c			3440	1720 ^b	67500	150 ^d	150 ^d	17200	6.21	0.621	6.21	1720 ^b	62.1	347	2600 ^d
0316-95-0154	16-01495	0–0.5	SED	e	0.22 (J)	NA ^f	_	0.644	0.64 (J)	2.4 (J)	2.9 (J)	4.2 (J)	1.5 (J)	1.4 (J)	—	—
0316-95-0155	16-01495	6.4–8	QBT4	—	_	—	_	_	_	—	_	—	—	_	—	—
0316-95-0156	16-01495	8.5–9.5	QBT4	_	_	—	_	_	_	_	_	_	_	_	—	_
0316-95-0160	16-01496	0–0.5	SOIL	1.9	0.29 (J)	NA	26.4	16.7	3.1	5.9	5.9	11	3	3.2	—	—
0316-95-0161	16-01496	3–4.5	QBT4	_	_	—	_	_	_	_	_	_	_	_	—	_
0316-95-0162	16-01496	5.5–6.5	QBT4	_	_	—	_	_	_	_	_	_	_	_	_	_
0316-95-0166	16-01497	0–0.5	SOIL	_	_	NA	0.946	0.849	_	_	_	_	_	_	—	_
0316-95-0168	16-01497	8.5–10.5	QBT4	_	_	0.016 (J)	_	_	_	_	_	_	_	_	—	_
0316-95-0172	16-01498	0–0.5	SED	_	_	NA	0.746	0.765	0.48 (J)	1.6 (J)	1.8 (J)	2.5 (J)	0.85 (J)	0.87 (J)	_	_
0316-95-0173	16-01499	0–0.5	SED	1.6	0.12 (J)	NA	_	_	1.6	2.6	3.2	4.6	1.5	1.6	—	—
0316-95-0174	16-01500	0–0.5	SED	_	_	NA	0.153	_	_	_		_	_	_	—	_
0316-95-0176	16-01502	0–0.5	SED	_	_	NA	_	0.173	_	_	_	_	_	_	_	_
0316-95-0169	16-01658	0–0.5	SED	—	_	NA	1.5	1.05	_	—	_	0.32 (J)	—	_	—	—
0316-95-0170	16-01658	6.5–8	QBT4	—	—	—	_	_	_	—	_	—	—	_	—	—
0316-95-0171	16-01658	8.5–10.5	QBT4	—	—	—	—	_	_	—	_	—	—	—	—	—
0316-95-0157	16-01672	0–0.5	SED	—	_	NA	—	_	0.12 (J)	0.43 (J)	0.47 (J)	0.72	0.25 (J)	0.29 (J)	—	0.3 (J)
0316-95-0158	16-01672	8–9	QBT4	_	_	—	—	—	_	_	_	—	—	_	0.29 (J)	—
0316-95-0159	16-01672	9–10	QBT4			_	_	_	_		_				0.37 (J)	
0316-95-0163	16-01673	0–0.5	SED	—	—	NA	0.418	0.197	0.2 (J)	0.76 (J)	0.93 (J)	—	0.46 (J)	0.46 (J)	—	—
0316-95-0164	16-01673	0.6–2	QBT4	—	—	—	_	_	_	—	_	—	—	—	0.054 (J)	—
0316-95-0165	16-01673	2–4.5	QBT4			_	_	_	_	_	_	_			0.081 (J)	

Sample ID	Location ID	Depth (ft)	Media	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Diethylphthalate	Dimethyl Phthalate	Dimethylphenol[2,4-]	Di-n-butylphthalate	Dinitrobenzene[1,3-]	Dinitrotoluene[2,4-]	Di-n-octylphthalate	Fluoranthene	Fluorene
Construction V	Norker SSL [®]	3		20600	21.3	552	191000	2380000	4760	23800	23.8	476	4760	8910	8910
Industrial SSL	С			2340	2.34	1000 ^d	547000	6840000	13700	68400	62 ^d	103	25000 ^g	24400	24400
Residential SS	6L°			621	0.621	78 ^d	48900	611000	1220	6110	6.1 ^d	15.7	2400 ^g	2290	2290
0316-95-0154	16-01495	0–0.5	SED	3.4 (J)	0.4 (J)		_	—	—	—	—	—	—	3.6 (J)	—
0316-95-0155	16-01495	6.4–8	QBT4	—	—	_	_	—	—	0.76	—	—	—	—	—
0316-95-0156	16-01495	8.5–9.5	QBT4	—		_		_		—	—	—	_	—	—
0316-95-0160	16-01496	0–0.5	SOIL	6.8	0.82	1.6		_	0.13 (J)	0.14 (J)	11.1	—	_	9.9	2.5
0316-95-0161	16-01496	3–4.5	QBT4	_	—		-	—	Ι	—	—	—		—	—
0316-95-0162	16-01496	5.5–6.5	QBT4	_	—	-	0.081 (J)	—		—	—	—		—	—
0316-95-0166	16-01497	0–0.5	SOIL	_	_		_	—		_	0.308	—		—	_
0316-95-0168	16-01497	8.5–10.5	QBT4	_	—		0.04 (J)	—		—	—	—		—	—
0316-95-0172	16-01498	0–0.5	SED	2.3 (J)	—	-	_	—		—	—	0.087		3.6	—
0316-95-0173	16-01499	0–0.5	SED	3.5	0.48 (J)	1.7	_	—		0.059 (J)	—	—		6.8	2.1
0316-95-0174	16-01500	0–0.5	SED	_	_		_	—		_	—	—		0.43 (J)	—
0316-95-0176	16-01502	0–0.5	SED	_	—	-	_	—	Ι	—	—	—		—	—
0316-95-0169	16-01658	0–0.5	SED	0.25 (J)	_		_	—		_	—	—		0.14 (J)	—
0316-95-0170	16-01658	6.5–8	QBT4	_	_	-	0.078 (J)	—		_	—	—		—	—
0316-95-0171	16-01658	8.5–10.5	QBT4	_	_	_	_	_	—	_	—	—	_	—	—
0316-95-0157	16-01672	0–0.5	SED	0.8	_		_	—		_	—	—	0.38 (J)	1.5	—
0316-95-0158	16-01672	8–9	QBT4	_	_		0.61	0.052 (J)		_	—	—		—	—
0316-95-0159	16-01672	9–10	QBT4	_	—	-	1.4	0.2 (J)	Ι	—	—	—		—	—
0316-95-0163	16-01673	0–0.5	SED	1.2 (J)	_		_	—		_	0.229	—		—	—
0316-95-0164	16-01673	0.6–2	QBT4	_	—	—	_	_	_	_	—	—	—	_	—
0316-95-0165	16-01673	2–4.5	QBT4	_	_	_	0.15 (J)	_	_	_	_	_	_	_	_

Table 3.5-3 (continued)

Table 3.5-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	ХМН	Indeno(1,2,3-cd)pyrene	Methylene Chloride	Methylnaphthalene[2-]	Methylphenol[2-]	Methylphenol[4-]	Naphthalene	Nitrosodiphenylamine[N-]	Phenanthrene	Pyrene	RDX	Trichlorofluoromethane	Trinitrotoluene[2,4,6-]
Construction	Worker SSL	а		11900	213	10600	1240	na ^h	na	702	34000	7150	6680	715	5820	141
Industrial SSL	с 			34200	23.4	1090	4100 ^d	34000 ^g	3400 ^g	252	3910	20500	18300	174	6760	469
Residential S	SL ^c			3060	6.21	199	310 ^d	3100 ^g	310 ^g	45	993	1830	1720	44.2	2010	35.9
0316-95-0154	16-01495	0–0.5	SED	207	1.6 (J)	NA	—	—	—	—	—	1.2 (J)	4.1 (J)	1.64	NA	9
0316-95-0155	16-01495	6.4–8	QBT4	_	_	0.004 (J)	_	—	—	_	_	_	—	_	—	—
0316-95-0156	16-01495	8.5–9.5	QBT4	—	—	0.003 (J)	—	—	—	—	—	—	—	—	—	—
0316-95-0160	16-01496	0–0.5	SOIL	9300	3.4	NA	1.9	0.076 (J)	0.2 (J)	5.3	0.34 (J)	9.8	11	2.5	NA	11.4
0316-95-0161	16-01496	3–4.5	QBT4	2.47		—	_	—	_		_	_	_		—	—
0316-95-0162	16-01496	5.5–6.5	QBT4	0.527	_	—	_	—	—	_	_	_	—	_	—	—
0316-95-0166	16-01497	0–0.5	SOIL	100	_	NA	_	—	—	_	_	_	_	_	NA	0.631
0316-95-0168	16-01497	8.5–10.5	QBT4	_	_	—	_	—	_	_	_	_	_		—	—
0316-95-0172	16-01498	0–0.5	SED	4.09	_	NA	_	—	—	_	_	1.3 (J)	2.7	_	NA	—
0316-95-0173	16-01499	0–0.5	SED	_	1.9	NA	1.7	0.064 (J)	0.21 (J)	5.5	_	9.4	5.5	_	NA	—
0316-95-0174	16-01500	0–0.5	SED	1.54	_	NA	_	—	_	_	_	_	0.32 (J)		NA	—
0316-95-0176	16-01502	0–0.5	SED	_	_	NA	_	—	_		_	_	_		NA	—
0316-95-0169	16-01658	0–0.5	SED	1720	_	NA	_	—	—	_	_	0.051 (J)	0.14 (J)	_	NA	1.69
0316-95-0170	16-01658	6.5–8	QBT4	1.32	_	—	_	—	—	_	_	—	_	_	—	—
0316-95-0171	16-01658	8.5–10.5	QBT4	_	—	0.003 (J)	_	—	—	_	_	—	_	_	0.006	—
0316-95-0157	16-01672	0–0.5	SED	_	0.31 (J)	NA	_	—	—	0.1 (J)	_	0.64	0.85	—	NA	—
0316-95-0158	16-01672	8–9	QBT4	—	—	_	—	—	—	—	—	_	—	—	—	—
0316-95-0159	16-01672	9–10	QBT4		_	—		—	_			_			—	—
0316-95-0163	16-01673	0–0.5	SED	3280	0.5 (J)	NA	_	—	—	_	_	0.73 (J)	_	—	NA	0.463
0316-95-0164	16-01673	0.6–2	QBT4	—	—	—	—	—	—	—	_	—	—	—	—	—
0316-95-0165	16-01673	2–4.5	QBT4	_		_	_	_	_	_	_	_	_	_	—	_

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b Pyrene used as a surrogate based on structural similarity.

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^e — = Not detected.

^f NA = Not analyzed.

^g SSLs are from EPA (2007, 099314).

^h na = Not available.

Table 3.6-1 Samples Collected and Analyses Requested at SWMU 16-006(d) Cyanide (Total) Gamma Spectroscopy High Explosives Metals SVOC VOC Sample ID Location ID Depth (ft) Media SOIL 1106 0316-95-0297 16-01617 2–4 1108 1102 1102 1106 1102 0316-95-0298 16-01617 4–6.5 QBT4 1108 1102 1102 1106 1106 1102 0316-95-0299 16-01618 2–2.5 SOIL 1108 1102 1106 1102 1102 1106

1108

1108

1108

1102

1102

1102

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1102

1102

1102

1102

1102

1102

1106

1106

1106

0316-95-0302 16-01619 4.5–7 QBT4

Note: Numbers in analyte columns are request numbers.

16-01618

16-01619

4.5–6.5

3–4

QBT4

SOIL

0316-95-0300

0316-95-0301

Table 3.6-2Inorganic Chemicals above BVs at SWMU 16-006(d)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Chromium	Cyanide (Total)
Qbt2, 3, 4 BV ^a				0.5	1.63	7.14	0.5
Soil BV ^a				0.83	0.4	19.3	0.5
Construction W	orker SSL ^b			124	309	449 ^c	6190
Industrial SSL ^d				454	1120	2920 ^c	227000
Residential SSL	d			31.3	77.9	219 ^c	1560
0316-95-0297	16-01617	2–4	SOIL	5.98 (U)	0.598 (U)	e	1.22 (UJ)
0316-95-0298	16-01617	4–6.5	QBT4	5.07 (U)	—	21.1	1.06 (UJ)
0316-95-0299	16-01618	2–2.5	SOIL	6.08 (U)	0.608 (U)	—	1.27 (UJ)
0316-95-0300	16-01618	4.5–6.5	QBT4	5.18 (U)	—	23.8	1.05 (UJ)
0316-95-0301	16-01619	3–4	SOIL	5.55 (U)	0.555 (U)	_	1.14 (UJ)
0316-95-0302	16-01619	4.5–7	QBT4	5.23 (U)	_	17	1.07 (UJ)

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are for hexavalent chromium.

^d SSLs are from NMED (2009, 108070).

 e — = Not detected or not above BV.

Table 3.6-3 Organic Chemicals Detected at SWMU 16-006(d)

Sample ID	Location ID	Depth (ft)	Media	Chrysene	Diethylphthalate	Fluoranthene	Phenanthrene	Pyrene
Construction W	orker SSL ^a			20600	191000	8910	7150	6680
Industrial SSL ^b				2340	547000	24400	20500	18300
Residential SSL	b			621	48900	2290	1830	1720
0316-95-0298	16-01617	4–6.5	QBT4	c	0.041 (J)	_	_	_
0316-95-0300	16-01618	4.5–6.5	QBT4	_	0.054 (J)	_	_	_
0316-95-0301	16-01619	3–4	SOIL	0.06 (J)	—	0.1 (J)	0.085 (J)	0.07 (J)

Notes: Results are in mg/kg. Data qualifiers are defined in Appendix A. ^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b SSLs are from NMED (2009, 108070).

 c — = Not detected or not above BV.

Table 3.6-4 Samples Collected and Analyses Requested at AOC 16-030(g)

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	VOC	Cyanide (Total)
0316-95-0267	16-01606	0–0.5	SOIL	923	924	923	*	924
0316-95-0268	16-01606	0.5–1.5	SOIL	923	924	923	923	924
0316-95-0505	16-01606	8.5–9.5	QBT4	972	978	972	972	978
0316-95-0269	16-01606	11–12.5	QBT4	972	978	972	972	978
0316-95-0273	16-01607	0–0.5	SED	215	206			206
0316-95-0274	16-01608	0–0.5	SED	215	206	_	_	206
0316-95-0275	16-01609	0–0.5	SED	215	206	_	_	206
0316-95-0276	16-01610	0–0.5	SED	215	206			206
0316-95-0277	16-01611	0–0.5	SED	215	206			206
0316-95-0270	16-01668	0–0.5	SED	923	924	923	_	924
0316-95-0271	16-01668	0.5–0.83	QBT4	923	924	923	923	924
0316-95-0272	16-01668	5–7	QBT4	1242	1243	1242	1242	1243

Note: Numbers in analyte columns are request numbers. * — = Analyses not requested.

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Chromium	Copper	Cyanide (Total)	Lead	Selenium	
Qbt2, 3, 4 BV ^a				0.5	46	1.63	7.14	4.66	0.5	11.2	0.3	
Sediment BV ^a				0.83	127	0.4	10.5	11.2	0.82	19.7	0.3	
Soil BV ^a				0.83	295	0.4	19.3	14.7	0.5	22.3	1.52	
Construction We	orker SSL ^b			124	4350	309	449 ^c	12400	6190	800	1550	
Industrial SSL ^d				454	224000	1120	2920 ^c	45400	227000	800	5680	
Residential SSL	d			31.3	15600	77.9	219 [°]	3130	1560	400	391	
0316-95-0267	16-01606	0–0.5	SOIL	6.45 (U)	e	0.645 (U)	_	—	1.35 (U)	27.1 (J-)		
0316-95-0268	16-01606	0.5–1.5	SOIL	6.4 (U)	391	0.64 (U)	36.9 (J-)	—	1.33 (U)	138 (J-)		
0316-95-0505	16-01606	8.5–9.5	QBT4	5.7 (U)	—	—	10.7	—	1.2 (U)	—	_	
0316-95-0269	16-01606	11–12.5	QBT4	5.6 (U)	—	—	38.5	—	1.1 (U)	—	_	
0316-95-0273	16-01607	0–0.5	SED	6.7 (U)	150	0.67 (U)	_	73	1.4 (U)	434	0.34 (U)	
0316-95-0274	16-01608	0–0.5	SED	7.3 (U)	_	0.73 (U)	_	34.9	1.5 (U)	37	0.38 (U)	
0316-95-0275	16-01609	0–0.5	SED	8.6 (U)	—	0.86 (U)	_	62.4	1.7 (U)	25.9	0.42 (U)	
0316-95-0276	16-01610	0–0.5	SED	5.8 (U)	_	0.58 (U)	_	—	1.2 (U)	—	_	
0316-95-0277	16-01611	0–0.5	SED	5.8 (U)	_	0.58 (U)	_	_	1.2 (U)	_	_	
0316-95-0270	16-01668	0–0.5	SED	6.12 (U)	214	0.612 (U)	12.6 (J-)	—	1.28 (U)	40 (J-)	0.315 (U)	
0316-95-0271	16-01668	0.5–0.83	QBT4	5.74 (U)	76.3	—	_	—	1.22 (U)	—	0.303 (U)	
0316-95-0272	16-01668	5–7	QBT4	5.3 (U)	_	—	_	40.9	1.1 (U)	—	_	

Table 3.6-5 Inorganic Chemicals above BVs at AOC 16-030(g)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are for hexavalent chromium.

^d SSLs are from NMED (2009, 108070).

 e — = Not detected or not above BV.

Vanadium	Zinc
17	63.5
19.7	60.2
39.6	48.8
1550	92900
5680	341000
391	23500
_	102
_	107
_	
	_
_	88.8
_	65.6
	_
_	
_	_
20.9	88.5
_	_
_	_

Table 3.6-6Organic Chemicals Detected at AOC 16-030(g)

Sample ID	Location	Depth (ft)	Media	Acenaphthene	Acetone	Amino-2,6-dinitrotoluene[4-]	Amino-4,6-dinitrotoluene[2-]	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran
Construction W	orker SSL ^a			18600	263000	601	601	66800	213	21.3	213	6680 ^b	2060	4760	20600	21.3	552
Industrial SSL^{c}				36700	851000	1900 ^d	2000 ^d	183000	23.4	2.34	23.4	18300 ^b	234	1370	2340	2.34	1000 ^d
Residential SSL	c			3440	67500	150d	150 ^d	17200	6.21	0.621	6.21	1720 ^b	62.1	347	621	0.621	78 ^d
0316-95-0267	16-01606	0–0.5	SOIL	0.84 (J)	NA ^e	f		1.8 (J)	3.3	3.2	4.8	1.4 (J)	2.5	—	4.9	0.41 (J)	0.53 (J)
0316-95-0268	16-01606	0.5–1.5	SOIL	—	—	0.218	0.109	0.11 (J)		0.074 (J)	0.09 (J)			—	0.1 (J)		—
0316-95-0505	16-01606	8.5–9.5	QBT4	—	—	—	—	—		_	—			—	—		—
0316-95-0269	16-01606	11–12.5	QBT4	—	—	_	—	—		—	—	_	_	_	—		—
0316-95-0273	16-01607	0–0.5	SED	NA	NA	0.124	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0316-95-0275	16-01609	0–0.5	SED	NA	NA	—	—	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0316-95-0276	16-01610	0–0.5	SED	NA	NA	—		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0316-95-0270	16-01668	0–0.5	SED	0.095 (J)	NA	_	_	0.43	1.9	2	2.8	0.99	1	—	2.7	0.29 (J)	0.049 (J)
0316-95-0271	16-01668	0.5–0.83	QBT4	—	0.009 (J)	_	—	_	_	—	—	_	—	—	_	_	—
0316-95-0272	16-01668	5–7	QBT4	—	—	_	—		_		—	_		0.076 (J)	_	_	

Table 3.6-6 (continued)

Sample ID	Location ID	Depth (ft)	Media	Di-n-butylphthalate	Dinitrotoluene[2,4-]	Fluoranthene	Fluorene	ХМН	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	RDX	TATB	Tetryl	Trinitrobenzene[1,3,5-]	Trinitrotoluene[2,4,6-]
Construction W	orker SSL ^a			23800	476	8910	8910	11900	213	702	7150	6680	715	na ^g	953	8760 ^d	141
Industrial SSL^{c}				68400	103	24400	24400	34200	23.4	252	20500	18300	174	na	2740	27000 ^d	469
Residential SSL	с -			6110	15.7	2290	2290	3060	6.21	45	1830	1720	44.2	na	244	2200 ^d	35.9
0316-95-0267	16-01606	0–0.5	SOIL	_		9	0.96 (J)	—	1.4 (J)	0.86 (J)	6.6	8.5	_	NA	0.144	—	
0316-95-0268	16-01606	0.5–1.5	SOIL	—	_	0.16 (J)	—	0.356	_	—	0.1 (J)	0.12 (J)	_	NA	_	—	0.309
0316-95-0505	16-01606	8.5–9.5	QBT4	_			—	—		_		—	_	NA		0.184	
0316-95-0269	16-01606	11–12.5	QBT4	—	_	_	—	—	_	—	—	—	0.682	NA	_	0.966	0.256
0316-95-0273	16-01607	0–0.5	SED	NA	_	NA	NA	—	NA	NA	NA	NA	_	3.34	_	—	0.206
0316-95-0275	16-01609	0–0.5	SED	NA	0.114	NA	NA	—	NA	NA	NA	NA	_		0.096	—	0.109
0316-95-0276	16-01610	0–0.5	SED	NA		NA	NA	—	NA	NA	NA	NA	_			—	0.478
0316-95-0270	16-01668	0–0.5	SED	0.051 (J)		3.7	0.11 (J)	1.72	1.1	_	1.4	2.6	—	NA		_	_
0316-95-0271	16-01668	0.5–0.83	QBT4	0.041 (J)	_	_	—	_	_	_	_	_	_	NA	_	_	_
0316-95-0272	16-01668	5–7	QBT4	_			_	—		_	_	_	—	NA		_	_

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

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b Pyrene used as a surrogate based on structural similarity.

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^e NA = Not analyzed.

f = Not detected.

^g na = Not available.

Sample ID	Location ID	Depth (ft)	Media	Gamma Spectroscopy	High Explosives	Metals	SVOC	VOC	Cyanide (Total)
0316-95-0295	16-01612	0–0.5	SOIL	330	*	329	328	—	329
0316-95-0296	16-01613	0–0.5	SOIL	330	_	329	328		329
0316-95-0293	16-01614	0–0.5	SOIL	330	_	329	328	_	329
0316-95-0294	16-01614	0.5–0.67	SOIL	330	_	329	328	328	329
0316-95-0289	16-01615	2.5–4	SOIL	1194	_	1193	1192	1192	1193
0316-95-0290	16-01615	5.1–6	QBT4	1194	_	1193	1192	1192	1193
0316-95-0291	16-01616	0–1	SOIL	1253	_	1252	1251	1251	1252
0316-95-0292	16-01616	1–3.5	QBT4	1253	_	1252	1251	1251	1252
0316-96-0170	16-02640	0–0.5	SOIL	_	2635	2636	2634	2634	2636

Note: Numbers in analyte columns are request numbers. * — =Analyses not requested.

Table 3.12-1 Samples Collected and Analyses Requested at SWMU 16-006(c)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Mercury	Nickel	Thallium	Vanadium	Zinc
Qbt2, 3, 4 BV ^a				7340	0.5	46	1.63	2200	7.14	3.14	4.66	0.5	14500	11.2	0.1	6.58	1.1	17	63.5
Soil BV ^a				29200	0.83	295	0.4	6120	19.3	8.64	14.7	0.5	21500	22.3	0.1	15.4	0.73	39.6	48.8
Construction V	Norker SSL ^b			40700	124	4350	309	na ^c	449 ^d	34.6	12400	6190	217000	800	92.9	6190	20.4	1550	92900
Industrial SSL ^e				1130000	454	224000	1120	na	2920 ^d	300 ^f	45400	227000	795000	800	310 ^f	22700	74.9	5680	341000
Residential SS	SL ^e			78100	31.3	15600	77.9	na	219 ^d	23 ^f	3130	1560	54800	400	23 ^f	1560	5.16	391	23500
0316-95-0295	16-01612	0–0.5	SOIL	^g	6.4 (U)	4590	0.64 (U)	—	_	_	_	1.3 (U)	_	23	0.15	—	_	_	55
0316-95-0296	16-01613	0–0.5	SOIL	—	7.2 (U)	6540	0.72 (U)	—	—	-	25.1	1.5 (U)	—	23.3	0.11 (J)	—	—	_	107
0316-95-0293	16-01614	0–0.5	SOIL	—	6.5 (U)	668	0.65 (U)	—	_		—	1.3 (U)	—	22.8	—	—	—	_	65.5
0316-95-0294	16-01614	0.5–0.67	SOIL	—	7 (U)	2610	0.7 (U)	_	—		18.2	1.4 (U)	_	—	0.17	—	—		
0316-95-0289	16-01615	2.5–4	SOIL	—	5.3 (U)	_	0.53 (U)	_	—		—	1.1 (U)	_		—	—	—		
0316-95-0290	16-01615	5.1–6	QBT4	11800	5.2 (U)	133		2500	50.1	18.1	334	1.1 (U)	15000	—	—	89.2 (J+)	—	17.4	206
0316-95-0291	16-01616	0–1	SOIL	—	5.2 (U)	—	0.52 (U)	—	—		—	1 (U)	—	—	—	—	—		_
0316-95-0292	16-01616	1–3.5	QBT4	_	4.9 (U)	_		_	_		21.9	1 (U)	_	_	_	_	_		
0316-96-0170	16-02640	0–0.5	SOIL	_	_	_	_		_		_	_	_		_	_	1 (J)		_

Table 3.12-2 Inorganic Chemicals above BVs at SWMU 16-006(c)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070). ^c na = Not available.

^d SSLs are for hexavalent chromium.

 $^{\rm e}$ SSLs are from NMED (2009, 108070), unless otherwise noted.

^f SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

 g — = Not detected or not above BV.

Table 3.12-3
Organic Chemicals Detected at SWMU 16-006(c)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acetone	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Chrysene	Dibenzofuran
Construction We	orker SSL ^a			18600	263000	66800	213	21.3	213	6680 ^b	2060	952000	4760	20600	552
Industrial SSL ^c				36700	851000	183000	23.4	2.34	23.4	18300 ^b	234	2500000 ^d	1370	2340	1000 ^d
Residential SSL ^c				3440	67500	17200	6.21	0.621	6.21	1720 ^b	62.1	245000 ^d	347	621	78 ^d
0316-95-0295	16-01612	0–0.5	SOIL	e	NA ^f	—	_	—		—	—	0.35 (J)	—		—
0316-95-0296	16-01613	0–0.5	SOIL		NA	—	-	_		_	_	0.67 (J)	_		—
0316-95-0293	16-01614	0–0.5	SOIL		NA	_	-	_		_	-	0.2 (J)	_		—
0316-95-0294	16-01614	0.5–0.67	SOIL			—	-	_		_	_	0.62 (J)			—
0316-95-0289	16-01615	2.5–4	SOIL	_		0.063 (J)	0.17 (J)	0.15 (J)	0.19 (J)	0.08 (J)	0.068 (J)	—	16	0.24 (J)	—
0316-95-0290	16-01615	5.1–6	QBT4	0.058 (J)		0.12 (J)	0.21 (J)	0.19 (J)	0.22 (J)	0.098 (J)	0.093 (J)	—	0.11 (J)	0.28 (J)	0.038 (J)
0316-95-0291	16-01616	0–1	SOIL	_	0.012 (J)	_	_	_		_	_	_	_	_	_
0316-95-0292	16-01616	1–3.5	QBT4			_	_	_	_	—	_	—	_		—
0316-96-0170	16-02640	0–0.5	SOIL	_	_	—	_		_	_	NA	_	_	_	—

Table 3.12-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dichlorobenzene[1,4-]	Di-n-butylphthalate	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]	Methylene Chloride	Naphthalene	Phenanthrene	Pyrene	Toluene
Construction We	orker SSL ^a			3780	23800	8910	8910	213	10300 ^g	10600	702	7150	6680	21100
Industrial SSL ^c				180	68400	24400	24400	23.4	14900 ^g	1090	252	20500	18300	57900
Residential SSL	C			32.2	6110	2290	2290	6.21	3210 ^g	199	45	1830	1720	5570
0316-95-0295	16-01612	0–0.5	SOIL	-	_	_	_	_	NA	NA	_	_		NA
0316-95-0296	16-01613	0–0.5	SOIL		_	—	—	_	NA	NA			-	NA
0316-95-0293	16-01614	0–0.5	SOIL	0.05 (J)	0.054 (J)	0.048 (J)	—	_	NA	NA	-	-	_	NA
0316-95-0294	16-01614	0.5–0.67	SOIL		_	—	—	_	_	_	_		_	_
0316-95-0289	16-01615	2.5–4	SOIL		_	0.38	—	0.089 (J)	_	0.004 (J)	0.039 (J)	0.26 (J)	0.26 (J)	_
0316-95-0290	16-01615	5.1–6	QBT4	_	_	0.49	0.065 (J)	0.1 (J)	_	0.003 (J)	0.064 (J)	0.44	0.41	_
0316-95-0291	16-01616	0–1	SOIL		_	—	—	_	0.014	_	-	-	_	—
0316-95-0292	16-01616	1–3.5	QBT4	_	_	_	_	_	0.024	_	_	_		_
0316-96-0170	16-02640	0–0.5	SOIL	_	_	_	_	_	_	0.003 (J)	_	_	_	0.003 (J)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSL are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

e - = Not detected.

^f NA = Not analyzed.

^g Isopropylbenzene used as surrogate.

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	TPH-DRO	TPH-GRO	VOC
RE16-05-63419	16-25154	2–2.5	SOIL	3799S	3800S	3799S	3799S	3799S	3799S
RE16-05-63420	16-25154	5.5–6	SOIL	3799S	3800S	3799S	3799S	3799S	3799S
RE16-05-63421	16-25155	2–2.5	SOIL	3799S	3800S	3799S	3799S	3799S	3799S
RE16-05-63422	16-25155	5–5.5	SOIL	3799S	3800S	3799S	3799S	3799S	3799S
RE16-05-63423	16-25156	2–2.5	SOIL	3799S	3800S	3799S	3799S	3799S	3799S
RE16-05-63424	16-25156	5.5–6	SOIL	3799S	3800S	3799S	3799S	3799S	3799S
RE16-05-63425	16-25157	2–2.5	SOIL	3799S	3800S	3799S	3799S	3799S	3799S
RE16-05-63426	16-25157	5.5–6	SOIL	3799S	3800S	3799S	3799S	3799S	3799S

Note: Numbers in analyte columns are request numbers.

Table 3.14-2 Inorganic Chemicals above BVs at SWMU 16-015(b)

Sample ID	Location ID	Depth (ft)	Media	Barium	Cobalt	Lead
Soil BV ^a				295	8.64	22.3
Construction Wor	ker SSL ^b			4350	34.6	800
Industrial SSL^{c}				224000	300 ^d	800
$\textbf{Residential SSL}^{c}$				15600	23 ^d	400
RE16-05-63419	16-25154	2–2.5	SOIL		8.7	
RE16-05-63421	16-25155	2–2.5	SOIL	625		26.6
RE16-05-63422	16-25155	5–5.5	SOIL	410	_	_
Notes: Results are in r	ng/kg.					
^a BVs are from LANL ((1998, 059730).					

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^e — = Not detected or not above BV.

Table 3.14-1 Samples Collected and Analyses Requested at SWMU 16-015(b)

Sample ID	Location ID	Depth (ft)	Media	Acetone	Amino-2,6-dinitrotoluene[4-]	Amino-4,6-dinitrotoluene[2-]	Di-n-butylphthalate	Dinitrotoluene[2,4-]	Dinitrotoluene[2,6-]	HMX	Methylene Chloride	RDX	Tetrachloroethene	Toluene	TPH-DRO	Trichloroethane[1,1,1-]	Trichloroethene	Trinitrobenzene[1,3,5-]	Trinitrotoluene[2,4,6-]
Construction Wor	ker SSL ^a			263000	601	601	23800	476	239	11900	10600	715	338	21100	na ^b	64300	4600	8760	141
Industrial SSL ^c					beest	a a a a d		100							e e e			b	
				851000	1900 [°]	2000*	68400	103	687	34200	1090	174	36.4	57900	200°	77100	253	27000 °	469
Residential SSL ^c				851000 67500	1900 ^{°°} 150 ^d	2000 ⁻ 150 ^d	68400 6110	103 15.7	687 61.2	34200 3060	1090 199	174 44.2	36.4 6.99	57900 5570	200° 200 [°]	77100 21800	253 45.7	27000 [°] 2200 [°]	469 35.9
Residential SSL ^c RE16-05-63419	16-25154	2–2.5	SOIL	851000 67500 ^f	1900 ^d 150 ^d —	2000 ⁻ 150 ^d	68400 6110 —	103 15.7 —	687 61.2 —	34200 3060 2	1090 199 —	174 44.2 1.3	36.4 6.99 0.0015 (J)	57900 5570 0.00079 (J)	200° 200 [°] —	77100 21800 —	253 45.7 0.006	27000 [°] 2200 [°] —	469 35.9 —
Residential SSL ^c RE16-05-63419 RE16-05-63420	16-25154 16-25154	2–2.5 5.5–6	SOIL	851000 67500 f 	1900 [°] 150 [°] —	2000 ⁻ 150 ^d —	68400 6110 — —	103 15.7 — —	687 61.2 — —	34200 3060 2 0.24 (J)	1090 199 0.0034 (J)	174 44.2 1.3 0.37	6.99 0.0015 (J)	57900 5570 0.00079 (J) 0.0011 (J)	200° 200 ^e —	77100 21800 — —	45.7 0.006 0.0086	27000 [°] 2200 [°] —	469 35.9 —
Residential SSL ^c RE16-05-63419 RE16-05-63420 RE16-05-63421	16-25154 16-25154 16-25155	2–2.5 5.5–6 2–2.5	SOIL SOIL SOIL	851000 67500 f 0.0016 (J-)	1900 [°] 150 [°] — 4.4	2000 ⁻ 150 ^d — 5.5	68400 6110 — 0.29 (J)	103 15.7 — 0.074 (J)	687 61.2 — 0.1 (J)	34200 3060 2 0.24 (J) 240	1090 199 0.0034 (J) 0.0077 (J-)	174 44.2 1.3 0.37 —	36.4 6.99 0.0015 (J) 0.0072 (J-)	57900 5570 0.00079 (J) 0.0011 (J) 0.0032 (J-)	200° 200 ^e — —	77100 21800 0.0012 (J-)	253 45.7 0.006 0.0086 0.043 (J-)	27000 [°] 2200 ^d — —	469 35.9 — — 14
Residential SSL ^c RE16-05-63419 RE16-05-63420 RE16-05-63421 RE16-05-63422	16-25154 16-25154 16-25155 16-25155	2–2.5 5.5–6 2–2.5 5–5.5	SOIL SOIL SOIL SOIL	851000 67500 ^f 0.0016 (J-) 0.0025 (J-)	1900 [°] 150 [°] — 4.4 0.57	2000 ⁻ 150 ^d — 5.5 1.2	68400 6110 — 0.29 (J) —	103 15.7 — 0.074 (J) —	687 61.2 — 0.1 (J) —	34200 3060 2 0.24 (J) 240 9.9	1090 199 	174 44.2 1.3 0.37 96	36.4 6.99 0.0015 (J) 0.0072 (J-) 	57900 5570 0.00079 (J) 0.0011 (J) 0.0032 (J-) —	200° 200° — — 46	77100 21800 0.0012 (J-) 	253 45.7 0.006 0.0086 0.043 (J-) 0.0042 (J-)	27000 ^d 2200 ^d — — 0.1 (J)	469 35.9 — 14 24
Residential SSL ^c RE16-05-63419 RE16-05-63420 RE16-05-63421 RE16-05-63422 RE16-05-63423	16-25154 16-25154 16-25155 16-25155 16-25156	2–2.5 5.5–6 2–2.5 5–5.5 2–2.5	SOIL SOIL SOIL SOIL SOIL	851000 67500 f 0.0016 (J-) 0.0025 (J-) 	1900 ^d 150 ^d — 4.4 0.57 0.41	2000 ⁻ 150 ^d — 5.5 1.2 0.72	68400 6110 — 0.29 (J) —	103 15.7 	687 61.2 — 0.1 (J) —	34200 3060 2 0.24 (J) 240 9.9 5.1	1090 199 0.0034 (J) 0.0077 (J-) 0.0089 (J-) 0.0093 (J-)	174 44.2 1.3 0.37 96 26	36.4 6.99 0.0015 (J) 0.0072 (J-) 0.0077 (J-)	57900 5570 0.00079 (J) 0.0011 (J) 0.0032 (J-) 0.0033 (J-)	200° 200° — — — 46 —	77100 21800 0.0012 (J-) 0.00064 (J-)	253 45.7 0.006 0.0086 0.043 (J-) 0.0042 (J-) 0.041 (J-)	27000 ^d 2200 ^d — — 0.1 (J) —	469 35.9 — 14 24 —
Residential SSL ^c RE16-05-63419 RE16-05-63420 RE16-05-63421 RE16-05-63422 RE16-05-63423 RE16-05-63424	16-25154 16-25154 16-25155 16-25155 16-25156 16-25156	2–2.5 5.5–6 2–2.5 5–5.5 2–2.5 5.5–6	SOIL SOIL SOIL SOIL SOIL SOIL	851000 67500 ^f 0.0016 (J-) 0.0025 (J-) 0.0023 (J-)	1900 ^d 150 ^d 4.4 0.57 0.41 0.33	2000 ⁻ 150 ^d 5.5 1.2 0.72 0.62	68400 6110 0.29 (J) 	103 15.7 0.074 (J) 	687 61.2 0.1 (J) 	34200 3060 2 0.24 (J) 240 9.9 5.1 8.6	1090 199 0.0034 (J) 0.0077 (J-) 0.0089 (J-) 0.0093 (J-) 0.0075 (J-)	174 44.2 1.3 0.37 96 26 72	36.4 6.99 0.0015 (J) 0.0072 (J-) 0.0077 (J-)	57900 5570 0.00079 (J) 0.0011 (J) 0.0032 (J-) 0.0033 (J-) 	200° 200° — — 46 —	77100 21800 0.0012 (J-) 0.00064 (J-) 	253 45.7 0.006 0.0086 0.043 (J-) 0.0042 (J-) 0.041 (J-) 0.0029 (J-)	27000 ^d 2200 ^d — — 0.1 (J) —	469 35.9 14 24 3.7
Residential SSL ^c RE16-05-63419 RE16-05-63420 RE16-05-63421 RE16-05-63422 RE16-05-63422 RE16-05-63423 RE16-05-63424 RE16-05-63425	16-25154 16-25155 16-25155 16-25155 16-25156 16-25156 16-25157	2–2.5 5.5–6 2–2.5 5–5.5 2–2.5 5.5–6 2–2.5	SOIL SOIL SOIL SOIL SOIL SOIL	851000 67500 f 0.0016 (J-) 0.0025 (J-) 0.0023 (J-) 	1900 ^d 150 ^d 4.4 0.57 0.41 0.33 	2000 ⁻ 150 ^d 5.5 1.2 0.72 0.62 	68400 6110 	103 15.7 0.074 (J) 	687 61.2 0.1 (J) 	34200 3060 2 0.24 (J) 240 9.9 5.1 8.6 —	1090 199 0.0034 (J) 0.0077 (J-) 0.0089 (J-) 0.0093 (J-) 0.0075 (J-) 0.0092	174 44.2 1.3 0.37 — 96 26 72 —	36.4 6.99 0.0015 (J) 0.0072 (J-) 0.0077 (J-) 	57900 5570 0.00079 (J) 0.0011 (J) 0.0032 (J-) 0.0033 (J-) 	200° 200° — — 46 — —	77100 21800 0.0012 (J-) 0.00064 (J-) 	253 45.7 0.006 0.0086 0.043 (J-) 0.0042 (J-) 0.041 (J-) 0.0029 (J-) 0.0045 (J)	27000 ^d 2200 ^d — — 0.1 (J) — — —	469 35.9 14 24 3.7

Table 3.14-3 Organic Chemicals Detected at SWMU 16-015(b)

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070). ^b na = Not available.

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^e SSLs are from NMED (2006, 094614).

^f — = Not detected.

Table 3.27-1 Samples Collected and Analyses Requested at AOC 16-022(b) and AOC 16-033(b)

Sample ID	Location ID	Depth (ft)	Media	SVOC	TPH-GRO	VOC
RE16-03-50573	16-03-21857	0.5–1	SOIL	1576S	1576S	1576S
RE16-03-50574	16-03-21858	0.5–1	SOIL	1576S	1576S	1576S
RE16-03-50575	16-03-21859	1–1.5	SOIL	1576S	1576S	1576S
RE16-03-50576	16-03-21860	1–1.5	SOIL	1576S	1576S	1576S
RE16-03-50577	16-03-21860	3.5–4	SOIL	1576S	1576S	1576S

Note: Numbers in analyte columns are request numbers.

Table 3.27-2 Organic Chemicals Detected at AOC 16-022(b) and AOC 16-033(b)

Sample ID	Location ID	Depth (ft)	Media	Benzene	Ethylbenzene	Methylnaphthalene[2-]	Naphthalene	TPH-GRO
Construction Wor	ker SSL ^a			471	6630	1240	702	na ^b
Industrial SSL^{c}				85.4	385	4100 ^d	252	na
Residential SSL^{c}				15.5	69.7	310 ^d	45	na
RE16-03-50574	16-03-21858	0.5–1	SOIL	e	_	_	0.035	_
RE16-03-50577	16-03-21860	3.5–4	SOIL	0.033	0.029	0.098	_	30
Notes: Results are in r	ng/kg.	-	•	•	•	•	•	

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b na = Not available.

 $^{\rm c}$ SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

 e — = Not detected or not above BV.

Table 3.30-1 Samples Collected and Analyses Requested at AOC 16-024(k)

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC
0316-97-0547	16-04101	0–1	SOIL	3418R	3419R	3417R

Note: Numbers in analyte columns are request numbers.

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium		
Soil BV ^a			0.83	0.4			
Construction W	orker SSL ^b			124	309		
Industrial SSL ^c				454	1120		
Residential SSL	Residential SSL ^c						
0316-97-0547	16-04101	0–1	SOIL	6.7 (UJ)	0.58 (U)		

Table 3.30-2 Inorganic Chemicals above BVs at AOC 16-024(k)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070).

 Table 3.32-1

 Samples Collected and Analyses Requested at AOC 16-024(o)

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC
0316-97-0532	16-04052	0-0.41	SOIL	3353R	3352R	3351R

Note: Numbers in analyte columns are request numbers.

Table 3.32-2
Inorganic Chemicals above BVs at AOC 16-024(o)

Sample ID	Location ID	Depth (ft)	Media	Lead
Soil BV ^a	22.3			
Construction Wor	800			
Industrial SSL ^c				800
Residential SSL ^c	400			
0316-97-0532	16-04052	0–0.41	SOIL	23.6

Notes: Results are in mg/kg.

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070).

-		-	-			
Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC
0316-97-0535	16-04061	0–1	SOIL	3353R	3352R	3351R

 Table 3.33-1

 Samples Collected and Analyses Requested at AOC 16-024(p)

Note: Numbers in analyte columns are request numbers.

 Table 3.34-1

 Samples Collected and Analyses Requested at AOC 16-024(q)

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC
0316-97-0536	16-04063	0–1	SOIL	3353R	3352R	3351R

Note: Numbers in analyte columns are request numbers.

Table 3.34-2							
Inorganic Chemicals above BVs at AOC 16-024(q)							

Sample ID	Location ID	Depth (ft)	Media	Cobalt	Lead	Manganese	Mercury	Selenium
Soil BV ^a	Soil BV ^a				22.3	671	0.1	1.52
Construction W	orker SSL ^b			34.6	800	463	92.9	1550
Industrial SSL ^c				300 ^d	800	145000	310 ^d	5680
Residential SSL [°]				23 ^d	400	10700	23 ^d	391
0316-97-0536	16-04063	0–1	SOIL	19.5	28.3	1390	0.11	1.6

Notes: Results are in mg/kg.

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

Sample ID	Location ID	Depth (ft)	Media	Pyrene			
Construction Wo	orker SSL ^a			6680			
Industrial SSL ^b				18300			
Residential SSL ^b 1720							
0316-97-0536	16-04063	0–1	SOIL	0.091 (J)			

Table 3.34-3 Organic Chemicals Detected at AOC 16-024(q)

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b SSLs are from NMED (2009, 108070).

Sample	es Collected	and Anal	yses Req	uested at A	AOC 16-024	l(r)
Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC

0–1

FILL

3439R

3440R

3438R

Table 3.35-1
Samples Collected and Analyses Requested at AOC 16-024(r)

16-04092 Note: Numbers in analyte columns are request numbers.

0316-97-0544

Table 3.35-2

Inorganic Chemicals above BVs at AOC 16-024(r)

Sample ID	Location ID	Depth (ft)	Media	Thallium
Soil BV ^a				0.73
Construction W	orker SSL ^b			20.4
Industrial SSL ^c				74.9
Residential SSL	5.16			
0316-97-0544	16-04092	0–1	FILL	0.97 (U)

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070).

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC
0316-97-0545	16-04093	0–1	SOIL	3418R	3419R	3417R
0316-97-0598	16-04093	1–2	SOIL	3527R	3528R	3526R

Table 3.36-1 Samples Collected and Analyses Requested at AOC 16-024(s)

Note: Numbers in analyte columns are request numbers.

Table 3.36-2
Inorganic Chemicals above BVs at AOC 16-024(s)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Copper	Lead	Zinc
Soil BV ^a	0.83	0.4	14.7	22.3	48.8			
Construction W	orker SSL ^b			124	309	12400	800	92900
Industrial SSL ^c				454	1120	45400	800	341000
Residential SSL ^c				31.3	77.9	3130	400	23500
0316-97-0545	16-04093	0–1	SOIL	7.3 (UJ)	0.63 (U)	15.2	35.6	62.8

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070).

Samples Conected and Analyses Requested at SWMO 10-025(y)											
Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC					
0316-97-0524	16-04019	0–1	SOIL	3335R	3334R	3333R					
0316-97-0525	16-04020	0–1	SOIL	3335R	3334R	3333R					
0316-97-0596	16-04020	1–2	SOIL	3527R	3528R	3526R					

Table 3.40-1 mples Collected and Analyses Requested at SWMU 16-025(v)

Note: Numbers in analyte columns are request numbers.

Sample ID	Location ID	Depth (ft)	Media	Barium
Soil BV ^a				295
Construction Wo	orker SSL ^b			4350
Industrial SSL ^c				224000
Residential SSL ^c	15600			
0316-97-0525	16-04020	0–1	SOIL	353

Table 3.40-2Inorganic Chemicals above BVs at SWMU 16-025(y)

Notes: Results are in mg/kg.

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070).

Sai	mples Collec	ted and A	Table 3 Analyses	3.43-1 Request	ed at SWMU 16-	005(d)	
				es			

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	NOC
RE16-98-0003	16-03341	3.6–4.6	SOIL	4216R	4215R, 4217R	4214R	4214R
RE16-99-0001	16-03341	5.5–6.5	QBT4	*	5198R–1	—	
RE16-98-0004	16-03343	3–4	SOIL	4216R	4215R, 4217R	4214R	4214R
RE16-99-0002	16-03345	5–5.5	QBT4	5199R	5198R, 5200R	—	
RE16-98-0001	16-05791	2–3	FILL	4216R	4215R, 4217R	4214R	4214R
RE16-98-0002	16-05792	2–3	FILL	4216R	4215R, 4217R	4214R	4214R
RE16-98-0005	16-05793	9–9.5	SOIL	4236R	4235R, 4237R	4234R	4234R

Note: Numbers in analyte columns are request numbers.

* — =Analyses not requested.

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	Inorganic Chemicals above BVs at SWMU 16-005(d)										
Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Mercury	Silver	Thallium	Uranium
Soil BV ^a				0.83	295	0.4	6120	0.1	1	0.73	1.82
Construction Worker SSL ^b			124	4350	309	na ^c	92.9	1550	20.4	929	
Industrial SSL ^d			454	224000	1120	na	310 ^e	5680	74.9	3410	
Residential SSL	d			31.3	15600	77.9	na	23 ^e	391	5.16	235
RE16-98-0003	16-03341	3.6–4.6	SOIL	13 (UJ)	f	0.64 (U)		0.13 (U)	2.6 (U)		1.98
RE16-98-0004	16-03343	3–4	SOIL	12 (UJ)	1200	0.6 (U)		0.12 (U)	2.4 (U)		2.65
RE16-98-0001	16-05791	2–3	FILL	11 (UJ)	—	0.57 (U)		0.11 (U)	2.3 (U)		1.85
RE16-98-0002	16-05792	2–3	FILL	11 (UJ)	—	0.57 (U)		0.11 (U)	2.3 (U)		1.89
RE16-98-0005	16-05793	9–9.5	SOIL	1.2 (U)	—	_	12000	_	_	1.2 (U)	28.5 (U)

Table 3.43-2Inorganic Chemicals above BVs at SWMU 16-005(d)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c na = Not available.

^d SSLs are from NMED (2009, 108070), unless otherwise noted.

^e SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

 f — = Not detected or not above BV.

Table 3.43-3Organic Chemicals Detected at SWMU 16-005(d)

Sample ID	Location ID	Depth (ft)	Media	Amino-2,6-dinitrotoluene[4-]	Amino-4,6-dinitrotoluene[2-]	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	ХМН	Indeno(1,2,3-cd)pyrene	Methylene Chloride	RDX	Trinitrotoluene[2,4,6-]
Construction W	orker SSL ^a			601	601	213	6680 ^b	21.3	11900	213	10600	715	141
Industrial SSL ^c	I SSL ^c			1900 ^d	2000 ^d	23.4	18300 ^b	2.34	34200	23.4	1090	174	469
Residential SSL	tial SSL ^c			150 ^d	150 ^d	6.21	1720 ^b	0.621	3060	6.21	199	44.2	35.9
RE16-98-0004	16-03343	3–4	SOIL	0.433	0.299	e	—	_	0.164 (J)	_	_	0.373	5.18
RE16-98-0005	16-05793	9–9.5	SOIL	—	—	0.099 (J)	0.15 (J)	0.15 (J)		0.14 (J)	0.0048 (J)	_	_

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b Pyrene used as a surrogate based on structural similarity.

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^e — = Not detected.

Samples Collected and Analyses Requested at Swillo 16-017(II)-99														
Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	РСВ	SVOC	VOC						
0316-98-0151	16-03424	0–0.5	QBT4	4168R	4169R, 4170R	4167R	4167R	4167R						
0316-98-0140	16-03462	2–2.5	SOIL	4110R	4111R, 4112R	4109R	4109R	4109R						

 Table 3.43-4

 Samples Collected and Analyses Requested at SWMU 16-017(h)-99

Note: Numbers in analyte columns are request numbers.

Table 3.43-5	
Inorganic Chemicals above BVs at SWMU 16-017(h)-99	

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Boron	Copper	Lead	Mercury	Selenium	Silver	Uranium
Qbt2, 3, 4 BV ^a				0.5	2.79	na ^b	4.66	11.2	0.1	0.3	1	2.4
Soil BV ^a				0.83	8.17	na ^b	14.7	22.3	0.1	1.52	1	1.82
Construction W	orker SSL ^c			124	65.4	46500	12400	800	92.9	1550	1550	929
Industrial SSL ^d				454	17.7	227000	45400	800	310 ^e	5680	5680	3410
Residential SSL	d			31.3	3.9	15600	3130	400	23 ^e	391	391	235
0316-98-0151	16-98-0151 16-03424 0–0.5 QBT4		QBT4	12 (UJ)	3.2	f	_	_	0.12 (U)	0.6 (U)	2.4 (U)	3.1
0316-98-0140)316-98-0140 16-03462 2–2.5 SOIL		_		4.2	20.3 (J+)	32.2	_	_	_	2.36 (J)	

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

^a BVs are from LANL (1998, 059730).

^b na = Not available.

^c Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^d SSLs are from NMED (2009, 108070), unless otherwise noted.

^e SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

 f — = Not detected or not above BV.

Sample ID	Location ID	Depth (ft)	Media	Acetone	Amino-2,6-dinitrotoluene[4-]	Amino-4,6-dinitrotoluene[2-]	Aroclor-1260	ХМН	RDX	Trinitrotoluene[2,4,6-]
Construction W	orker SSL ^a			263000	601	601	7.58	11900	715	141
Industrial SSL ^b				851000	1900 [°]	2000 ^c	8.26	34200	174	469
Residential SSL	b			67500	150 [°]	150 [°]	2.22	3060	44.2	35.9
0316-98-0151	16-03424	0–0.5	QBT4	0.11	d	—	_	—	0.407	_
0316-98-0140	16-03462	2–2.5	SOIL	—	0.154	0.081 (J)	0.0427	0.127 (J)	3.28	0.119

Table 3.43-6Organic Chemicals Detected at SWMU 16-017(h)-99

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b SSLs are from NMED (2009, 108070), unless otherwise noted.

^c SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^d — = Not detected.

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC
0316-97-0548	16-04102	0–1	FILL	3458R	3459R	3457R
0316-97-0580	16-04104	0–1	SOIL	3458R	3459R	3457R
0316-97-0581	16-04105	0–1	SOIL	3458R	3459R	3457R

Table 3.43-7 Samples Collected and Analyses Requested at SWMU 16-025(k)

Note: Numbers in analyte columns are request numbers.

Table 3.43-8											
Inorganic Chemicals above BVs at SWMU 16-025(k)											

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Copper	Lead	Silver	Zinc
Soil BV ^a				0.83	0.4	14.7	22.3	1	48.8
Construction	Worker SSL ⁱ	D		124	309	12400	800	1550	92900
Industrial SSL	C			454	1120	45400	800	5680	341000
Residential SS	SL ^c			31.3	77.9	3130	400	391	23500
0316-97-0548	16-04102	0–1	FILL	7.3 (UJ)	0.66 (J)	96.8	43.1	1.1 (J)	91.3
0316-97-0580	16-04104	0–1	SOIL	7.3 (UJ)	0.63 (U)	150	33.1	—	61.4
0316-97-0581 16-04105 0–1 SOIL				6.7 (UJ)	0.58 (U)	18.6	d	_	_

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070).

^d — = Not detected or not above BV.

0				()
Sample ID	Location ID	Depth (ft)	Media	Chloronaphthalene[2-]
Construction W	orker SSL ^a			24800
Industrial SSL ^b				90800
Residential SSL	b			6260
0316-97-0580	16-04104	0–1	SOIL	0.36

Table 3.43-9 Organic Chemicals Detected at SWMU 16-025(k)

Notes: Results are in mg/kg.

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b SSLs are from NMED (2009, 108070).

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	Uranium	VOC
0316-97-0057	16-03173	3.75–4	FILL	3149R	3150R, 3151R	3148R	*	3148R
0316-97-0061	16-03173	9.75–10	QBT4	3162R	3163R, 3164R	3161R	—	3161R
0316-97-0064	16-03181	0–2	SOIL	3233R	3234R, 3235R	3232R	—	3232R
0316-97-0065	16-03181	5–6	SOIL	3233R	3234R, 3235R	3232R	—	3232R
0316-97-0066	16-03181	6–8	QBT4	3233R	3234R, 3235R	3232R	—	3232R
0316-97-0058	16-03197	3–5	SOIL	3153R	3154R, 3155R	3152R	—	3152R
0316-97-0059	16-03197	8–9	QBT4	3153R	3154R, 3155R	3152R	—	3152R
0316-97-0060	16-03205	5.5–6	SOIL	3162R	3163R, 3164R	3161R	—	3161R
0316-97-0056	16-03205	6–6.5	QBT4	3138R	3139R, 3140R	3137R	—	3137R
0316-97-0062	16-03213	4–5	QBT4	3175R	3176R	3174R	3177R	3174R
0316-97-0063	16-03213	7–8	QBT4	3175R	3176R	3174R	3177R	3174R
0316-97-0067	16-03221	0–2	SOIL	3199R	3200R, 3201R	3198R	—	3198R
0316-97-0068	16-03221	5–6	SOIL	3199R	3200R, 3201R	3198R	—	3198R
0316-97-0086	16-03221	8–10	QBT4	3199R	3200R, 3201R	3198R	—	3198R
0316-97-0071	16-03237	2–4	SOIL	3225R	3226R	3224R	3227R	3224R
0316-97-0072	16-03237	7–9	QBT4	3225R	3226R	3224R	3227R	3224R
0316-97-0073	16-03245	4–5	SOIL	3208R	3209R, 3210R	3207R		3207R
0316-97-0074	16-03245	8–9	QBT4	3208R	3209R, 3210R	3207R		3207R
0316-97-0083	16-03253	5–5.25	SOIL	3171R	3172R, 3173R	3170R	—	3170R
0316-97-0081	16-03258	5.5–6.5	QBT4	3162R	3163R, 3164R	3161R	—	3161R
0316-97-0082	16-03263	5–5.5	SOIL	3162R	3163R, 3164R	3161R	—	3161R
0316-97-0079	16-03268	4–5	SOIL	3199R	3200R, 3201R	3198R	—	3198R
0316-97-0084	16-03273	1–2	FILL	3191R	3192R, 3193R	3190R	—	3190R
0316-97-0085	16-03273	4.5–5.5	SOIL	3191R	3192R, 3193R	3190R	—	3190R
0316-97-0075	16-03278	5–5.25	SOIL	3091R	3092R, 3093R	3090R	—	3090R
0316-97-0080	16-03288	3.5–4	FILL	3145R	3146R, 3147R	3144R	—	3144R
0316-97-0055	16-03293	5–5.25	SOIL	3132R	3133R	3135R	3134R	3135R
0316-97-0076	16-03298	4–4.5	FILL	3099R	3100R, 3101R	3098R	—	3098R
0316-97-0077	0077 16-03303 3.5–4 SO		SOIL	3127R	3127R 3128R		3129R	3126R
0316-98-0094	16-03318	6–7	SOIL	4186R	4187R, 4188R	4185R	_	4185R

 Table 3.43-10

 Samples Collected and Analyses Requested at SWMU 16-026(q)

Note: Numbers in analyte columns are request numbers.

* — =Analyses not requested.

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Uranium	Vanadium
Qbt2, 3, 4 BV ^a	•			7340	0.5	2.79	46	1.21	1.63	2200	7.14	3.14	4.66	11.2	1690	482	0.1	6.58	0.3	1	1.1	2.4	17
Sediment BV ^a				15400	0.83	3.98	127	1.31	0.4	4420	10.5	4.73	11.2	19.7	2370	543	0.1	9.38	0.3	1	0.73	2.22	19.7
Soil BV ^a				29200	0.83	8.17	295	1.83	0.4	6120	19.3	8.64	14.7	22.3	4610	671	0.1	15.4	1.52	1	0.73	1.82	39.6
Construction	Worker SSL)		40700	124	65.4	4350	144	309	na ^c	449 ^d	34.6	12400	800	na	463	92.9	6190	1550	1550	20.4	929	1550
Industrial SSL	e			1130000	454	17.7	224000	2260	1120	na	2920 ^d	300 ^f	45400	800	na	145000	310 ^f	22700	5680	5680	74.9	3410	5680
Residential SS	SL ^e			78100	31.3	3.9	15600	156	77.9	na	219 ^d	23 ^f	3130	400	na	10700	23 ^f	1560	391	391	5.16	235	391
0316-97-0057	16-03173	3.75–4	FILL	g	1.3 (UJ)	8.5	—	—	0.63 (U)	—	—	—	—	—	—	—	0.13 (U)	—	—	2.5 (U)	—	2.93	—
0316-97-0061	16-03173	9.75–10	QBT4	—	7.4 (UJ)	—	129	—	_	—	—	—	—	—	—	—	—	—	—	_	—	2.45	—
0316-97-0064	16-03181	0–2	SOIL	—	—	—	910	—	0.61 (U)	18000	—	—	18	48	—	—	0.12 (UJ)	—	—	2.4 (U)	—		—
0316-97-0065	16-03181	5–6	SOIL	—	—	—	—	2.1	0.62 (U)	—	—	—	—	—	—	—	0.12 (UJ)	—	—	2.5 (U)	—	2.74	—
0316-97-0066	16-03181	6–8	QBT4	7700	—	_	110	—	—	2300	—	—	4.9	13	—	—	0.13 (UJ)	_	0.38 (U)	2.6 (U)	—	11.2	—
0316-97-0058	16-03197	3–5	SOIL	_	1.3 (U)	—		—	0.64 (U)	—	—	—	—	—	—	—	0.13 (U)	—	—	2.6 (U)	—	3.51	—
0316-97-0059	16-03197	8–9	QBT4	13000	1.3 (U)	4.7	97	—	—	2500	—	—	6.2	—	1800	—	0.13 (U)	—	0.53 (U)	2.6 (U)	—	2.6	—
0316-97-0060	16-03205	5.5–6	SOIL	_	7.8 (UJ)	_	_	—	0.75 (U)	—	—	—	—	—	—	—	—	_	—	_	—	2.65	—
0316-97-0056	16-03205	6–6.5	QBT4		5.6 (U)	—	384		—	—	—	—	—	—	—	—	—	—	—	—	—		—
0316-97-0062	16-03213	4–5	QBT4	11000	—	3 (J-)	160	—	—	2500	8.9	8.5	8.3	—	1800	—	—	7	—	2.3 (U)	—		24
0316-97-0063	16-03213	7–8	QBT4	16000	—	_	210	1.9	—	4000	8.6	4.3	8.4	14 (J-)	2700	—	—	9.4	—	2.6 (U)	—	2.45	—
0316-97-0067	16-03221	0–2	SOIL	—	12 (U)	_	—	—	0.61 (U)	—	—	8.8	—	—	—	—	0.12 (U)	_	—	2.4 (U)	—	3.32	—
0316-97-0068	16-03221	5–6	SOIL	_	12 (U)	—	_	—	0.6 (U)	—		—	—	—	—	—	0.12 (U)	—	—	2.4 (U)	0.8	2.37	—
0316-97-0086	16-03221	8–10	QBT4	12000	14 (U)	_	69	—	—	2600	—	—	—	13	1700	—	0.14 (U)	_	1.4 (U)	2.9 (U)	—	—	—
0316-97-0071	16-03237	2–4	SOIL	_	12 (UJ)	_	3400	—	0.61 (U)	—	—	—	—	—	—	—	0.12 (U)	_	—	2.4 (U)	—	2.63	—
0316-97-0072	16-03237	7–9	QBT4	16000	14 (UJ)	—	420	1.4	—	3500	7.3	—	8	—	2600	—	0.14 (U)	8.9	—	2.7 (U)	—	2.79	—
0316-97-0073	16-03245	4–5	SOIL	—	—	_	—	2.8	0.91 (U)	7130	—	—	—	—	—	—	—	16.1	—	1.2 (U)	—	2.62	—
0316-97-0074	16-03245	8–9	QBT4	7430	—	—	142	—	—	3070	—	4.5 (J)	6.5	—	—	—	—	9.3	—	_	—	3.76	—
0316-97-0083	16-03253	5–5.25	SOIL	—	16 (U)	—	1000	—	0.82 (U)	—	—	—	—	—	—	—	0.41 (U)	—	1.6 (U)	3.3 (U)	—	4.02	—
0316-97-0081	16-03258	5.5–6.5	QBT4	7580	7.1 (UJ)	_	177	—	—	2960	—	16.6	7.4	17.2	1700	815	—	9.1	—	_	—	2.55	—
0316-97-0082	16-03263	5–5.5	SOIL	—	5.8 (UJ)	—	_	—	0.55 (U)	—	—	—	—	—	—	—	—	—	—	—	—	2.53	—
0316-97-0079	16-03268	4–5	SOIL	_	13 (U)	—	_	—	0.63 (U)	—		—	—	—	—	—	0.13 (U)	—	—	2.5 (U)	—	3.29	—
0316-97-0084	16-03273	1–2	FILL	_	12 (U)	_	_	—	0.61 (U)	—	—	—	—	—	—	—	0.12 (U)	_	—	2.4 (U)	—	3.89	—
0316-97-0085	16-03273	4.5–5.5	SOIL		12 (U)	_	—	2.3	0.62 (U)	—	_	—	_	—	_	—	0.12 (U)	_	—	2.5 (U)	1.4	2.39	_
0316-97-0075	16-03278	5–5.25	SOIL	—	6.2 (U)	_	_	_	0.62 (U)	—	_	—		22.4	_	_	—	_	_	—	_	3.01	_
0316-97-0080	16-03288	3.5–4	FILL		5.3 (U)	_	—		0.53 (U)	—	_						—	_	_	_		3.01	_
0316-97-0055	16-03293	5–5.25	SOIL	_	_	—	—	—	—	—	—	—	—	—	—	—	—	—	—		1.4 (U)		

Table 3.43-11 Inorganic Chemicals above BVs at SWMU 16-026(q)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Uranium	Vanadium
Qbt2, 3, 4 BV ^a	1			7340	0.5	2.79	46	1.21	1.63	2200	7.14	3.14	4.66	11.2	1690	482	0.1	6.58	0.3	1	1.1	2.4	17
Sediment BV ^a	l			15400	0.83	3.98	127	1.31	0.4	4420	10.5	4.73	11.2	19.7	2370	543	0.1	9.38	0.3	1	0.73	2.22	19.7
Soil BV ^a				29200	0.83	8.17	295	1.83	0.4	6120	19.3	8.64	14.7	22.3	4610	671	0.1	15.4	1.52	1	0.73	1.82	39.6
Construction	Worker SSL	b		40700	124	65.4	4350	144	309	na	449 ^d	34.6	12400	800	na	463	92.9	6190	1550	1550	20.4	929	1550
Industrial SSL	е			1130000	454	17.7	224000	2260	1120	na	2920 ^d	300 ^f	45400	800	na	145000	310 ^f	22700	5680	5680	74.9	3410	5680
Residential SS	SL ^e			78100	31.3	3.9	15600	156	77.9	na	219 ^d	23 ^f	3130	400	na	10700	23 ^f	1560	391	391	5.16	235	391
0316-97-0076	16-03298	4–4.5	FILL	—	5.6 (U)	—	—	_	0.56 (U)	—	—	_	—	—	—	—	—	—	—	—	—	2.84	—
0316-97-0077	16-03303	3.5–4	SOIL	—	—	—	—	_	—	_	—	_	—	_	—	—	—	—	—	—	0.87 (U)	2.93	—
0316-98-0094	16-03318	6–7	SOIL	_	13 (UJ)	_	_	-	0.67 (U)	_	_	_	—	_	—	_	0.13 (U)	_	—	2.7 (U)	1	5.08	_

Table 3.43-11 (continued)

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c na = Not available.

^d SSLs are for hexavalent chromium.

^e SSLs are from NMED (2009, 108070), unless otherwise noted.

^f SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^g — = Not detected or not above BV.
Sample ID	Location ID	Depth (ft)	Media	Acetone	Amino-2,6-dinitrotoluene[4-]	Amino-4,6-dinitrotoluene[2-]	Amino-DNTs	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Chloromethane	Dibenz(a,h)anthracene	Dibenzofuran	Dinitrotoluene[2,4-]
Construction We	orker SSL ^a			263000	601	601	na⁵	66800	213	21.3	213	6680 ^c	1130	21.3	552	476
Industrial SSL ^d				851000	1900 ^e	2000 ^e	150 ^e	183000	23.4	2.34	23.4	18300 ^c	198	2.34	100 ^e	103
Residential SSL	d		r	67500	150 ^e	150 ^e	200 ^e	17200	6.21	0.621	6.21	1720 [°]	35.6	0.621	78 ^e	15.7
0316-97-0061	16-03173	9.75–10	QBT4	f	NA ^g	NA		—	—	—	—	—	—	_		—
0316-97-0064	16-03181	0–2	SOIL	—	1.22	1.62	NA	8.1	—	—	—	—	—	_	1	—
0316-97-0065	16-03181	5–6	SOIL	_	_	—	NA	—	—	—	—	—	—	_		—
0316-97-0066	16-03181	6–8	QBT4	—	_	_	NA	—	_	—	—	—	—	—		—
0316-97-0056	16-03205	6–6.5	QBT4	—	0.086	—	NA	—	—	—	—	—	—	—		—
0316-97-0068	16-03221	5–6	SOIL	—	_	—	NA	—	—	—	—	—	—	—		—
0316-97-0086	16-03221	8–10	QBT4	—	_	0.097	NA	—	—	—	—	—	—	—		0.09
0316-97-0071	16-03237	2–4	SOIL	0.045		_	NA			_	—	_	—	_		—
0316-97-0072	16-03237	7–9	QBT4	—	_	—	NA	—	—	—	—	—	—	—		—
0316-97-0073	16-03245	4–5	SOIL	—	_	—	NA	—	—	—	—	—	—	—		—
0316-97-0074	16-03245	8–9	QBT4	—	_	_	NA	—	_	—	—	—	—	—		—
0316-97-0083	16-03253	5–5.25	SOIL	—	_	0.087	NA	_	_	—	—	—	—	—		—
0316-97-0081	16-03258	5.5–6.5	QBT4	—	NA	NA	—	—	—	—	—	—	0.016	—		—
0316-97-0082	16-03263	5–5.5	SOIL	_	NA	NA	0.59			_	—	_	—	_		—
0316-97-0079	16-03268	4–5	SOIL	—	_	—	NA	_	—	—	—	—	—	—		—
0316-97-0085	16-03273	4.5–5.5	SOIL	—	_	—	NA	—	—	—	—	—	—	—		—
0316-97-0075	16-03278	5–5.25	SOIL	_		_	NA			_	—	_	—	_		—
0316-97-0080	16-03288	3.5–4	FILL	—	_	—	NA	—	—	0.2 (J)	0.18 (J)	0.14 (J)	—	—		—
0316-97-0055	16-03293	5–5.25	SOIL	—	_	_	NA	—	—	_	_		—	—		—
0316-97-0076	16-03298	4-4.5	FILL	_	_	0.214	NA			—	—	_	_	_		—
0316-97-0077	16-03303	3.5–4	SOIL	0.006 (J)	_	_	NA	0.17 (J)	0.14 (J)	0.38 (J)	0.4 (J)	0.45	—	0.14 (J)		—
0316-98-0094	16-03318	6–7	SOIL	0.039		_	NA	—	—	_	_	_	_	_		—

Table 3.43-12Organic Chemicals Detected at SWMU 16-026(q)

Table 3.43-12 (continued)

Sample ID	Location ID	Depth (ft)	Media	Fluoranthene	Fluorene	ХМН	Indeno(1,2,3-cd)pyrene	Methylene Chloride	Naphthalene	Nitroaniline[4-]	Pentachlorophenol	Phenanthrene	RDX	Trinitrobenzene[1,3,5-]	Trinitrotoluene[2,4,6-]
Construction W	orker SSL ^a			8910	8910	11900	213	10600	702	na	1030	7150	715	8760	141
Industrial SSL ^d				24400	24400	34200	23.4	1090	252	860 ^e	100	20500	174	27000 ^e	469
Residential SSL	d			2290	2290	3060	6.21	199	45	240 ^e	29.8	1830	44.2	2200 ^e	35.9
0316-97-0061	16-03173	9.75–10	QBT4	—	—	_	—	—	—		—	—	_	—	0.25
0316-97-0064	16-03181	0–2	SOIL	0.43	2.7	5.43	—		_	_	—	3.9	14	—	6.4
0316-97-0065	16-03181	5–6	SOIL	0.61	0.4	_	—	—		0.8	—	1	0.323	—	0.239
0316-97-0066	16-03181	6–8	QBT4	—	—	_	—	_	1.4	_	—	—	0.248	—	0.147
0316-97-0056	16-03205	6–6.5	QBT4	_	—	_	—	—	_	_	—	_	_		0.1
0316-97-0068	16-03221	5–6	SOIL	_	—	1.84	—	—	_	_	—	_	_		_
0316-97-0086	16-03221	8–10	QBT4	—	—	0.302	—	_	_	_	—	—	0.424	—	—
0316-97-0071	16-03237	2–4	SOIL	_	—	_	—	—	_	_	—	_	_		0.77
0316-97-0072	16-03237	7–9	QBT4	—	—	_	—	—	_	_	—	—	—	4.1	—
0316-97-0073	16-03245	4–5	SOIL	—	—	0.174	—	_	_	_	—	—	—	—	—
0316-97-0074	16-03245	8–9	QBT4	—	—	_	—		_	_	—	—	0.311	—	—
0316-97-0083	16-03253	5–5.25	SOIL	_	—	_	—	—			—	—		—	_
0316-97-0081	16-03258	5.5–6.5	QBT4	_	_	_	—		_		_	—	_	—	_
0316-97-0082	16-03263	5–5.5	SOIL	_	—	_	—	—	_	_	—	_	5.4	1.5	0.52
0316-97-0079	16-03268	4–5	SOIL	_	—	0.54	—	—	_	_	—	_	_		_
0316-97-0085	16-03273	4.5–5.5	SOIL	—	—	0.352	—	—	_	_	—	—	0.933		—
0316-97-0075	16-03278	5–5.25	SOIL	—	—	_	—	—	_	—	—	—	0.179		—
0316-97-0080	16-03288	3.5–4	FILL	_	—		0.17 (J)	—			—	—	_		_
0316-97-0055	16-03293	5-5.25	SOIL	_	—	_	_	0.006 (J)	_	_	—	—	_	_	_
0316-97-0076	16-03298	4-4.5	FILL	—	—	0.407	—	_	_	_	—	—	0.995	—	0.213
0316-97-0077	16-03303	3.5–4	SOIL	—	—	_	0.4 (J)	_	_	_	0.095 (J)	—	—	—	—
0316-98-0094	16-03318	6–7	SOIL	_		0.309	—	—	_	_	_		1.27	_	_

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b na = Not available.

^d SSLs are from NMED (2009, 108070), unless otherwise noted.

^e SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^f — = Not detected.

^g NA = Not analyzed.

^c <u>Pyrene</u> used as a surrogate based on structural similarity.

Table 3.43-13
Samples Collected and Analyses Requested at SWMU 16-031(d)

Sample ID	Location ID	Depth (ft)	Media	Metals
0316-97-0141	16-03003	0–1	SOIL	3064R

Table 3.43-14Inorganic Chemicals above BVs at SWMU 16-031(d)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Copper	Mercury	Silver	Thallium
Soil BV ^a				0.83	0.4	14.7	0.1	1	0.73
Construction W	orker SSL ^b			124	309	12400	92.9	1550	20.4
Industrial SSL ^c	Industrial SSL [°]					45400	310 ^d	5680	74.9
Residential SSL	31.3	77.9	3130	23 ^d	391	5.16			
0316-97-0141	16-03003	0–1	SOIL	1.1 (UJ)	0.57 (U)	17	0.11 (U)	2.3 (U)	2.3 (U)

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

Table 3.43-15 Samples Collected and Analyses Requested at AOC C-16-065

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	VOC
0316-97-0006	16-03026	0–1	SOIL	3088R	3086R	3085R	3085R

Note: Numbers in analyte columns are request numbers.

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium
Soil BV ^a	0.83	0.4			
Construction W	orker SSL ^b			124	309
Industrial SSL^c				454	1120
Residential SSL	с		31.3	77.9	
0316-97-0006	16-03026	0–1	SOIL	5.82 (U)	0.582 (U)

Table 3.43-16Inorganic Chemicals above BVs at AOC C-16-065

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070).

Table 3.43-17Organic Chemicals Detected at AOC C-16-065

Sample ID	Location ID	Depth (ft)	Media	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Chrysene	Fluoranthene	Phenanthrene	Pyrene
Construction V	Norker SSL [®]	a		213	21.3	213	20600	8910	7150	6680
Industrial SSL	b			23.4	2.34	23.4	2340	24400	20500	18300
Residential SSL ^b			6.21	0.621	6.21	621	2290	1830	1720	
0316-97-0006	16-03026	0–1	SOIL	0.12 (J)	0.14 (J)	0.19 (J)	0.17 (J)	0.25 (J)	0.2 (J)	0.24 (J)

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

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables

(http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm) and equation and parameters from NMED (2009, 108070).

^b SSLs are from NMED (2009, 108070).

Sample ID	Location ID	Depth (ft)	Media	Metals	SVOC	TPH-DRO	TPH-GRO	VOC
RE16-03-50406	16-03-21706	0.5–0.67	SOIL	1508S	1508S	1508S	1508S	1508S
RE16-03-50409	16-21941	0.5–0.67	SOIL	1508S	1508S	1508S	1508S	1508S
RE16-03-50408	16-21942	0.5–0.67	SOIL	1508S	1508S	1508S	1508S	1508S
RE16-03-50413	16-22324	1.33–1.5	SOIL	1508S	1508S	1508S	1508S	1508S
RE16-03-50414	16-22325	1.33–1.5	SOIL	1508S	1508S	1508S	1508S	1508S
RE16-03-50412	16-22326	1.33–1.5	SOIL	1508S	1508S	1508S	1508S	1508S

Table 3.45-1 Samples Collected and Analyses Requested at SWMU 16-026(u)

Table 3.45-2Inorganic Chemicals above BVs at SWMU 16-026(u)

Sample ID	Location ID	Depth (ft)	Media	Cadmium	Calcium	Zinc
Soil BV ^a				0.4	6120	48.8
Construction We	orker SSL ^b			309	na ^c	92900
Industrial SSL ^d			1120	na	341000	
Residential SSL	d			77.9	na	23500
RE16-03-50409	16-21941	0.5–0.67	SOIL	e	_	51.4 (J+)
RE16-03-50408	16-21942	SOIL	0.707	_	293 (J+)	
RE16-03-50413	16-22324	1.33–1.5	SOIL		6740	—
RE16-03-50412	16-22326	1.33–1.5	SOIL		_	157 (J+)

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c na = Not available.

^c na = Not available.

 $^{\rm d}$ SSLs are from NMED (2009, 108070).

^e — = Not detected or not above BV.

Table 3.45-3
Organic Chemicals Detected at SWMU 16-026(u)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene
Construction Worker SSL ^a				18600	66800	213	21.3	213	6680 ^b	20600	21.3	552	8910
Industrial SSL ^c				36700	183000	23.4	2.34	23.4	18300 ^b	2340	2.34	1000 ^d	24400
Residential SSL	c			3440	17200	6.21	0.621	6.21	1720 ^b	621	0.621	78 ^d	2290
RE16-03-50406	16-03-21706	0.5–0.67	SOIL	0.052	0.071	0.08	0.071	0.11	e	0.07	—	—	0.2
RE16-03-50409	16-21941	0.5–0.67	SOIL	0.57	0.78	1	0.9	1.5	0.44	0.84	—	0.4	2.1
RE16-03-50408	16-21942	0.5–0.67	SOIL	1.2	1.6	2	1.8	2.9	1.1	1.8	—	0.75	4.1
RE16-03-50413 16-22324 1.33-1.5 SOIL		SOIL	0.14	0.18	0.24	0.21	0.37	—	0.23	—	0.079	0.62	
RE16-03-50414	16-22325	1.33–1.5	SOIL	0.61	0.82	1.2	0.86	1.6	_	0.93	_	0.37	2.5
RE16-03-50412	16-22326	1.33–1.5	SOIL	1.2	1.7	2.3	1.9	3.4	1	1.9	0.41	0.85	4

Table 3.45-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Fluorene	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Methylphenol[4-]	Naphthalene	Nitrosodiphenylamine[N-]	Pentachlorophenol	Phenanthrene	Pyrene	TPH-DRO
Construction W	orker SSL ^a			8910	213	1240	na ^f	702	34000	1030	7150	6680	na
Industrial SSL ^c				24400	23.4	4100 ^d	3400 ^g	252	3910	100	20500	18300	200 ^h
Residential SSL	С			2290	6.21	310 ^d	310 ^g	45	993	29.8	1830	1720	200 ^h
RE16-03-50406	16-03-21706	0.5–0.67	SOIL	0.04				0.079	—		0.24	0.19	_
RE16-03-50409	16-21941	0.5–0.67	SOIL	0.56	0.43	0.36	_	1.3	—	_	2.7	2.5	—
RE16-03-50408	16-21942	0.5–0.67	SOIL	0.99	1	0.58	0.042	2.1	—	0.52	4.8	4.4	81
RE16-03-50413	16-22324	1.33–1.5	SOIL	0.12	_	0.059	_	0.22	_	_	0.76	0.64	_
RE16-03-50414	16-22325	1.33–1.5	SOIL	0.58	0.44	0.31	_	1	—	—	3.1	3	50
RE16-03-50/12	16-22326	1.33-1.5	SOIL	1.2	1	0.66	0.05	2.4	0.06	0.49	6.6	5.8	54

Notes: Results are in mg/kg.

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b Pyrene used as a surrogate based on structural similarity.

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^e — = Not detected.

^f na = Not available.

^g SSLs are from EPA (2007, 099314).

^h SSLs are from NMED (2006, 094614).

Table 3.49-1
Samples Collected and Analyses Requested at SWMU 16-028(b)

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC
RE16-98-2013	16-05913	0–0.5	SOIL	5042R	5041R, 5043R	5040R

Table 3.49-2	
Inorganic Chemicals above BVs at SWMU 16-	-028(b)

Sample ID	Location ID	Depth (ft)	Media	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Uranium	Zinc
Soil BV ^a				0.4	19.3	8.64	14.7	22.3	0.1	15.4	1.82	48.8
Construction W	orker SSL ^b			309	449 ^c	34.6	12400	800	92.9	6190	929	92900
Industrial SSL ^d				1120	2920 ^c	300 ^e	45400	800	310 ^e	22700	3410	341000
Residential SSL ^d			77.9	219 ^c	23 ^e	3130	400	23 ^e	1560	235	23500	
RE16-98-2013	16-05913	0–0.5	SOIL	1.7	52.9	17.3	472	148	0.37	70.2	2.84	540

Notes: Results are in mg/kg.

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are for hexavalent chromium.

^d SSLs are from NMED (2009, 108070), unless otherwise noted.

^e SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

Table 3.49-3Organic Chemicals Detected at SWMU 16-028(b)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dinitrobenzene[1,3-]	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Nitrotoluene[3-]	Nitrotoluene[4-]	Phenanthrene	Pyrene	Tetryl
Construction	Worker SS	L ^a		18600	213	21.3	213	6680 ^b	2060	20600	23.8	8910	8910	213	6190	953	7150	6680	953
Industrial SSL	С			36700	23.4	2.34	23.4	18300 ^b	234	2340	62	24400	24400	23.4	22700	1200	20500	18300	2740
Residential SS	SL ^c			3440	6.21	0.621	6.21	1720 ^b	62.1	621	6.1	2290	2290	6.21	1560	244	1830	1720	244
RE16-98-2013	16-05913	0-0.5	SOIL	8.6 (J)	67	71	75	45	58	120	2.8	190	9.6 (J)	44	6.1	0.8	130	140	1.6

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b Pyrene used as a surrogate based on structural similarity.

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC
0316-97-0533	16-04053	0–1	SOIL	3353R	3352R	3351R
0316-97-0534	16-04056	0–1	SOIL	3353R	3352R	3351R

Table 3.50-1 Samples Collected and Analyses Requested at AOC C-16-005

Table 3.50-2
Inorganic Chemicals above BVs at AOC C-16-005

Sample ID	Location ID	Depth (ft)	Media	Mercury
Soil BV ^a	0.1			
Construction W	orker SSL ^b			92.9
Industrial SSL ^c				310
Residential SSL	23			
0316-97-0533	16-04053	0–1	SOIL	0.35

Notes: Results are in mg/kg.

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from EPA regional screening tables

(http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

0-1

Samples Collected and Analyses Requested at AOC 16-015(c)							
Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	
0316-97-0530	16-04044	0–1	SOIL	3353R	3352R	3351R	

SOIL

3353R

3352R

3351R

Table 3.51-1

Note: Numbers in analyte columns are request numbers.

16-04048

0316-97-0531

	U				· · /	
Sample ID	Location ID	Depth (ft)	Media	Copper	Lead	Zinc
Soil BV ^a		14.7	22.3	48.8		
Construction Wor	ker SSL ^b			12400	800	92900
Industrial SSL ^c				45400	800	341000
Residential SSL ^c				3130	400	23500
0316-97-0530	16-04044	0–1	SOIL	18.1	37.3	55.8
0316-97-0531	16-04048	0–1	SOIL	39.6	d	_

Table 3.51-2Inorganic Chemicals above BVs at AOC 16-015(c)

Notes: Results are in mg/kg.

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070).

^d — = Not detected or not above BV.

Table 3.51-3
Organic Chemicals Detected at AOC 16-015(c)

Sample ID	Location ID	Depth (ft)	Media	Benzoic Acid	RDX
Construction W	orker SSL ^a			952000	715
Industrial SSL ^b				2500000 ^c	174
Residential SSL	b			245000 [°]	44.2
0316-97-0530	16-04044	0–1	SOIL	0.035 (J)	3.8

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

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b SSLs are from NMED (2009, 108070), unless otherwise noted.

^c SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	VOC	Cyanide (Total)
0316-95-0278	16-01598	0–0.5	SED	923	924	923	*	924
0316-95-0279	16-01598	1.5–2	SOIL	1102	1106	1102	1102	1106
0316-95-0280	16-01598	8.5–9.5	QBT4	1052	1053	1052	1052	1053
0316-95-0284	16-01599	0–0.5	SED	140	141	140	—	141
0316-95-0285	16-01600	0–0.5	SED	140	141	140	—	141
0316-95-0286	16-01601	0–0.5	SED	140	141	140	—	141
0316-95-0287	16-01602	0–0.5	SED	140	141	140	—	141
0316-95-0288	16-01603	0–0.5	SED	140	141	140	—	141
0316-95-0281	16-01667	0–0.5	SOIL	923	924	923	_	924
0316-95-0282	16-01667	1–2.5	QBT4	1242	1243	1242	1242	1243
0316-95-0283	16-01667	3–4.5	QBT4	1242	1243	1242	1242	1243

 Table 3.52-1

 Samples Collected and Analyses Requested at SWMU 16-029(e)

* — =Analyses not requested.

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Cadmium	Calcium	Chromium	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Mercury	Nickel	Selenium	Silver	Zinc
Qbt2, 3, 4 BV ^a	•	L	•	7340	0.5	2.79	46	1.63	2200	7.14	4.66	0.5	14500	11.2	1690	0.1	6.58	0.3	1	63.5
Sediment BV ^a				15400	0.83	3.98	127	0.4	4420	10.5	11.2	0.82	13800	19.7	2370	0.1	9.38	0.3	1	60.2
Soil BV ^a				29200	0.83	8.17	295	0.4	6120	19.3	14.7	0.5	21500	22.3	4610	0.1	15.4	1.52	1	48.8
Construction W	orker SSL ^b			40700	124	65.4	4350	309	na ^c	449 ^d	12400	6190	217000	800	na	92.9	6190	1550	1550	92900
Industrial $\mathrm{SSL}^{\mathrm{e}}$				1130000	454	17.7	224000	1120	na	2920 ^d	45400	227000	795000	800	na	310 ^f	22700	5680	5680	341000
Residential SSL	e			78100	31.3	3.9	15600	77.9	na	219 ^d	3130	1560	54800	400	na	23 ^f	1560	391	391	23500
0316-95-0278	16-01598	0–0.5	SED	g	6.75 (U)	—	175	6.3	5900	61.1 (J-)	30.8 (J-)	1.43 (U)	—	55.1 (J-)	4760	0.114 (U)	12.1	0.351 (U)		900
0316-95-0279	16-01598	1.5–2	SOIL	—	5.88 (U)	—	—	0.639	—	—	_	1.18 (UJ)	—	—	_	—	—	—	_	105
0316-95-0280	16-01598	8.5–9.5	QBT4	—	5.3 (U)	—	91.7	_	—	21.1	—	1.1 (U)	—	—	_	NA ^h	—	—		—
0316-95-0284	16-01599	0–0.5	SED	—	12.3 (U)	—	138	1.2 (U)	17000	12.8	13.3	2.6 (U)	—	64	_	0.13 (U)	—	0.62 (UJ)	1.2 (U)	60.4
0316-95-0285	16-01600	0–0.5	SED	—	5.5 (U)	—	_	0.55 (U)	—	—	_	1.1 (U)	_	_		—	_	—	_	
0316-95-0286	16-01601	0–0.5	SED	—	5.7 (U)	—	—	0.57 (U)	—	—	—	1.2 (U)	—	—	_	—	—	—	_	—
0316-95-0287	16-01602	0–0.5	SED	—	6 (U)	—	—	0.603 (U)	—	—	—	1.2 (U)	—		_	—	—	—	_	—
0316-95-0288	16-01603	0–0.5	SED	—	6.2 (U)	—	132	0.62 (U)	—	—	_	1.3 (U)	_	_		—	_	0.32 (UJ)	_	
0316-95-0281	16-01667	0–0.5	SOIL	—	6.39 (U)	—	_	2.09		42.1 (J-)	61.2 (J-)	1.29 (U)	40000	25.1 (J-)	_	0.104 (U)	24.9	—	_	248
0316-95-0282	16-01667	1–2.5	QBT4	7370	5.4 (U)	4.1	138	—	8170	—	18.9	1.1 (U)	_	—	_	—	—	—	_	—
0316-95-0283	16-01667	3–4.5	QBT4	9060	5.3 (U)	—	99.9	_	_	—	25.5	1.1 (U)	_	—	—	—	_	—	_	_

Table 3.52-2Inorganic Chemicals above BVs at SWMU 16-029(e)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c na = Not available.

^d SSLs are for hexavalent chromium.

^e SSLs are from NMED (2009, 108070), unless otherwise noted.

^f SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^g — = Not detected or not above BV.

^h NA = Not analyzed.

Table 3.52-3
Organic Chemicals Detected at SWMU 16-029(e)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Amino-2,6-dinitrotoluene[4-]	Amino-4,6-dinitrotoluene[2-]	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate
Construction W	orker SSL ^a			18600	6680 ^b	263000	601	601	66800	213	21.3	213	6680 ^b	2060	952000	4760
Industrial SSL^{c}				36700	18300 ^b	851000	1900 ^d	2000 ^d	183000	23.4	2.34	23.4	18300 ^b	234	2500000 ^d	1370
Residential SSL ^c			3440	1720 ^b	67500	150 ^d	150 ^d	17200	6.21	0.621	6.21	1720 ^b	62.1	245000 ^d	347	
0316-95-0278	16-01598	0–0.5	SED	9.4	e	NA ^f		—	19	31	26	40	12	14	_	
0316-95-0279	16-01598	1.5–2	SOIL	0.19 (J)	—	_	0.123	0.098	0.61	0.87	0.8	1	0.39 (J)	0.49	0.096 (J)	
0316-95-0280	16-01598	8.5–9.5	QBT4	—	—	0.011 (J)	0.118	—	—				—	—	—	
0316-95-0284	16-01599	0–0.5	SED	—	—	NA	_	—	—	_	_		—	—	—	
0316-95-0285	16-01600	0–0.5	SED	0.12 (J)	—	NA		—	0.17 (J)	0.45	0.49	0.6	0.25 (J)	0.3 (J)	0.4 (J)	0.048 (J)
0316-95-0286	16-01601	0–0.5	SED	0.19 (J)	—	NA		—	0.29 (J)	0.57	0.63	0.78	0.35 (J)	0.38 (J)	0.23 (J)	0.042 (J)
0316-95-0287	16-01602	0–0.5	SED	—	—	NA	_	—	—	—	_		—	—	_	0.15 (J)
0316-95-0288	16-01603	0–0.5	SED	—	—	NA		—	—	_	_		—	—	_	0.051 (J)
0316-95-0281	16-01667	0–0.5	SOIL	16	0.75 (J)	NA	_		28	75	68	120	33	31	_	_
0316-95-0282	16-01667	1–2.5	QBT4	9.6	_	0.006 (J)	0.308		12	25	22	30	12	11	0.62 (J)	_
0316-95-0283	16-01667	3–4.5	QBT4	_	_	0.54	_	_	_		_	_	_	_	_	0.55

Sample ID	Location ID	Depth (ft)	Media	Butanone[2-]	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Diethylphthalate	Di-n-butylphthalate	Dinitrotoluene[2,4-]	Fluoranthene	Fluorene	XMH	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]
Construction We	orker SSL ^a			148000	20600	21.3	552	191000	23800	476	8910	8910	11900	213	1240
Industrial SSL ^c				369000	2340	2.34	1000 ^d	547000	68400	103	24400	24400	34200	23.4	4100 ^d
Residential SSL	c			39600	621	0.621	78 ^d	48900	6110	15.7	2290	2290	3060	6.21	310 ^d
0316-95-0278	16-01598	0–0.5	SED	NA	38	3 (J)	6	—	—	0.84	71	10	2.86	13	5
0316-95-0279	16-01598	1.5–2	SOIL	_	1.2	0.1 (J)	0.12 (J)	0.17 (J)	—	—	2.4	0.23 (J)	5.2	0.4	0.064 (J)
0316-95-0280	16-01598	8.5–9.5	QBT4	_	—	—	_	0.83	—	—	0.038 (J)	—	_	—	_
0316-95-0284	16-01599	0–0.5	SED	NA	—	—	_	_	—	—	_	—	_	—	_
0316-95-0285	16-01600	0–0.5	SED	NA	0.56	0.059 (J)	0.04 (J)	_	_		1.1	0.1 (J)		0.28 (J)	_
0316-95-0286	16-01601	0-0.5	SED	NA	0.73	0.082 (J)	0.078 (J)	_			1.5	0.17 (J)		0.37 (J)	0.054 (J)
0316-95-0287	16-01602	0–0.5	SED	NA					<u> </u>		0.043 (J)			—	_
0316-95-0288	16-01603	0–0.5	SED	NA		—	_	_			_	_		_	_
0316-95-0281	16-01667	0-0.5	SOIL	NA	110	8.7	9.2	_		1.61	190	15		35	5
0316-95-0282	16-01667	1–2.5	QBT4	_	35	3.1 (J)	7.8	0.87 (J)	—	0.942	57	9.6	_	14	5.6
0316-95-0283	16-01667	3–4.5	QBT4	0.017 (J)	—	—	_	—	0.14 (J)	0.075	_	—	_	—	—

Table 3.52-3 (continued)

Table 3.52-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Methylphenol[2-]	Methylphenol[4-]	Naphthalene	Nitrobenzene	Nitrotoluene[4-]	Phenanthrene	Phenol	Pyrene	RDX	Tetryl	Trinitrobenzene[1,3,5-]	Trinitrotoluene[2,4,6-]
Construction We	orker SSL ^a			na ^g	na	702	520	953	7150	68800	6680	715	953	8760	141
Industrial SSL ^c				34000 ⁿ	3400 ⁿ	252	277	1200	20500	205000	18300	174	2740	27000 ^d	469
Residential SSL	c			3100 ^h	310 ^h	45	49.4	244	1830	18300	1720	44.2	244	2200 ^d	35.9
0316-95-0278	16-01598	0–0.5	SED	_	_	15	—	0.793	59	—	54	0.185	2.71	—	_
0316-95-0279	16-01598	1.5–2	SOIL	—		0.18 (J)	—	_	2	—	1.6	—	—	—	—
0316-95-0280	16-01598	8.5–9.5	QBT4	—	—	—	—	—	_	—	—	—	—	—	—
0316-95-0284	16-01599	0–0.5	SED	—	_	_	20.5	_	_	—	—	_	—	—	_
0316-95-0285	16-01600	0–0.5	SED	—		0.053 (J)	—	—	0.73	—	1.4	—	—	—	—
0316-95-0286	16-01601	0–0.5	SED	—		0.15 (J)	—	—	1.2	—	1.8	—	—	—	—
0316-95-0287	16-01602	0–0.5	SED	—	_	_	—	_		_	0.058 (J)			—	—
0316-95-0288	16-01603	0–0.5	SED	_	_	_	—	-		_	—			—	0.117
0316-95-0281	16-01667	0–0.5	SOIL	—	_	11	0.287	_	140	_	140	-	3.21	—	0.585
0316-95-0282	16-01667	1–2.5	QBT4	0.44 (J)	1.1 (J)	15	—	_	58	2.2 (J)	42	_	_	0.157	_
0316-95-0283	16-01667	3–4.5	QBT4	_	_	_	_	_			_	_	_	0.113	_

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b Pyrene used as a surrogate based on structural similarity.

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^e — = Not detected.

^f NA = Not analyzed.

^g na = Not available.

^h SSLs are from EPA (2007, 099314).

Samples	Samples Collected and Analyses Requested at SWMU 16-021(a)														
Sample ID	Location ID	Depth (ft)	Media	Metals	SVOC	VOC	Cyanide (Total)								
0316-95-0210	16-01526	0.75–1.5	SOIL	252	249	249	252								
0316-95-2010	16-01526	1.5–2	SOIL	252	249	249	252								
0316-95-0211	16-01526	5–5.5	SOIL	252	249	249	252								
0316-95-0212	16-01527	0.75–1.5	SOIL	252	249	249	252								
0316-95-0213	16-01527	4.67–5.17	SOIL	252	249	249	252								

Table 3.53-1

Table 3.53-2 Inorganic Chemicals above BVs at SWMU 16-021(a)

Sample ID	Location Sample ID ID Depth (f		Media	Antimony	Cadmium	Copper	Cyanide (Total)	Mercury	Zinc
Soil BV ^a				0.83	0.4	14.7	0.5	0.1	48.8
Construction W	Vorker SSL ^b			124	309	12400	6190	92.9	92900
Industrial SSL ^c				454	1120	45400	227000	310 ^d	341000
Residential SS	Lc			31.3	77.9	3130	1560	23 ^d	23500
0316-95-0210	16-01526	0.75–1.5	SOIL	6.1 (U)	0.61 (U)	37.2	1.2 (U)	0.14	318
0316-95-2010	16-01526	1.5–2	SOIL	6.2 (U)	0.62 (U)	34.6	1.2 (U)	e	302
0316-95-0211 16-01526 5–5.5 SOIL				5.8 (U)	0.58 (U)	70.2	1.2 (U)	—	70
0316-95-0212	16-01527	0.75–1.5	SOIL	6.2 (U)	0.62 (U)	26.6	1.3 (U)		—
0316-95-0213	16-01527	4.67–5.17	SOIL	5.4 (U)	0.54 (U)	_	1.1 (U)		_

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^e — = Not detected or not above BV.

Table 3.53-3 Organic Chemicals Detected at SWMU 16-021(a)

Sample ID	Location Sample ID ID Depth (ft) Media					Isopropyltoluene[4-]	Toluene	Trichloroethene	Trichloropropane[1,2,3-]
Construction V	Norker SSL	а		263000	952000	10300 ^b	21100	4600	31
Industrial SSL	с			851000	2500000 ^d	14900 ^b	57900	253	4.54
Residential SS	SL ^c			67500	245000 ^d	3210 ^b	5570	45.7	0.915
0316-95-0210	16-01526	0.75–1.5	SOIL	e	—	0.006 (J)		0.015	_
0316-95-2010	16-01526	1.5–2	SOIL	—	0.33 (J)	0.01		0.003 (J)	
0316-95-0211	0316-95-0211 16-01526 5–5.5 SOIL				_	—		0.003 (J)	—
0316-95-0212	16-01527	0.75–1.5	SOIL	_	0.2 (J)	—	0.006 (J)	0.007	_
0316-95-0213	16-01527	4.67–5.17	SOIL	0.022	_	_	—	—	0.033

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

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b Isopropylbenzene used as a surrogate.

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^e — = Not detected.

Table 3.53-4 Samples Collected and Analyses Requested at SWMU 16-028(e) and SWMU 16-029(g)

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	VOC	Cyanide (Total)
0316-95-0506	16-01519	0–0.25	SED	1004	1005, 1006	1004	*	1005
0316-95-0507	16-01519	0.33–0.58	QBT4	1004	1005, 1006	1004	1004	1005
0316-95-0508	16-01519	2.5–3.25	QBT4	1004	1005, 1006	1004	1004	1005
0316-95-0183	16-01520	0–0.5	SED	133	134, 135	133		134
0316-95-0184	16-01521	0–0.5	SED	133	134, 135	133	_	134
0316-95-0185	16-01522	0–0.5	SED	133	134, 135	133		134
0316-95-0186	16-01523	0–0.5	SED	133	134, 135	133		134
0316-95-0187	16-01524	0–0.5	SED	133	134, 135	133	_	134
0316-95-0509	16-01661	0–0.16	SED	1007	1008, 1009	1007		1008
0316-95-0510	16-01661	0.25-0.5	QBT4	1007	1008, 1009	1007	1007	1008
0316-95-0511	16-01661	2.5–3	QBT4	1007	1008, 1009	1007	1007	1008

Note: Numbers in analyte columns are request numbers. * — =Analyses not requested.

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Mercury	Nickel	Selenium	Uranium	Vanadium
Qbt2, 3, 4 BV ^a				7340	0.5	2.79	46	1.21	1.63	2200	7.14	3.14	4.66	0.5	0.1	6.58	0.3	2.4	17
Sediment BV ^a				15400	0.83	3.98	127	1.31	0.4	4420	10.5	4.73	11.2	0.82	0.1	9.38	0.3	2.22	19.7
Construction W	orker SSL ^b			40700	124	65.4	4350	144	309	na ^c	449 ^d	34.6	12400	6190	92.9	6190	1550	929	1550
Industrial SSL ^e				1130000	454	17.7	224000	2260	1120	na	2920 ^d	300 ^f	45400	227000	310 ^f	22700	5680	3410	5680
Residential SSL	е			78100	31.3	3.9	15600	156	77.9	na	219 ^d	23 ^f	3130	1560	23 ^f	1560	391	235	391
0316-95-0506	16-01519	0–0.25	SED	g	5.6 (U)	_	—	—	0.56 (U)	—	—	_	_	1.2 (U)	—	—	_	2.32	_
0316-95-0507	16-01519	0.33–0.58	QBT4	10500	6.4 (U)	3.8	216	1.3	—	—	8	7.2	11.2	1.4 (U)	0.18 (U)	7.2	0.32 (U)	3.07	23.1
0316-95-0508	16-01519	2.5–3.25	QBT4	—	5.4 (U)	_	—	—	—	—	516	—	5.9	1.1 (U)	—	10.6	_		
0316-95-0183	16-01520	0–0.5	SED	_	5.46 (U)		—	—	0.546 (U)	_	—	_		1.1 (U)	0.107	—	1.37 (U)	3.14	23.5
0316-95-0184	16-01521	0–0.5	SED	—	5.74 (U)	_	—	—	0.574 (U)		—	_		1.16 (U)	—	—	_	2.52	_
0316-95-0185	16-01522	0–0.5	SED	—	6.18 (U)		153	—	0.618 (U)	—	—	8.24		1.2 (U)	0.122	—	0.307 (U)	2.38	22.9
0316-95-0186	16-01523	0–0.5	SED	_	6.96 (U)		215	1.32	0.696 (U)	_	—	6.64 (J)		1.41 (U)	—	—	1.74 (U)	3.36	21.2
0316-95-0187	16-01524	0–0.5	SED	—	5.92 (U)	_	139	1.56	0.592 (U)	—	_	5.6 (J)		1.19 (U)	—	—	_	2.82	20.1
0316-95-0509	16-01661	0–0.16	SED	—	8.3 (U)	_	—	—	0.83 (U)	—	_	—	_	1.7 (U)	0.103 (J)	—	0.42 (U)	_	—
0316-95-0510	16-01661	0.25-0.5	QBT4	_	7.8 (U)		122	_	_	2520	_	_	8.2	1.6 (U)	_	_	0.38 (U)	_	
0316-95-0511	16-01661	2.5–3	QBT4	_	5.5 (U)	_	_	—	—	—	234	—	10.2	1.1 (U)	—	6.7	_	_	_

Table 3.53-5 Inorganic Chemicals above BVs at SWMU 16-028(e) and SWMU 16-029(g)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c na = Not available.

^d SSLs are for hexavalent chromium.

^e SSLs are from NMED (2009, 108070), unless otherwise noted.

^f SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

 g — = Not detected or not above BV.

				-										-
Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Amino-2,6-dinitrotoluene[4-]	Amino-4,6-dinitrotoluene[2-]	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
Construction V	Vorker SSL ^a			18600	6680 ^b	263000	601	601	66800	213	21.3	213	6680 ^b	2060
Industrial SSL ^c				36700	18300 ^b	851000	1900 ^d	2000 ^d	183000	23.4	2.34	23.4	18300 ^b	234
Residential SS	L ^c			3440	1720 ^b	67500	150 ^d	150 ^d	17200	6.21	0.621	6.21	1720 ^b	62.1
0316-95-0507	16-01519	0.33–0.58	QBT4	e	—	0.005 (J)		—	_		—	_	_	—
0316-95-0508	16-01519	2.5–3.25	QBT4	—	—	0.009 (J)	_	—	—	_	_	—		—
0316-95-0183	16-01520	0–0.5	SED	0.77	0.057 (J)	NA ^f	_	_	1.4	4	5.7	8.6	3.1	—
0316-95-0184	16-01521	0–0.5	SED	1.1	0.057 (J)	NA	1.71	0.178	1.6	5.1	5.9	8.4	3	_
0316-95-0185	16-01522	0–0.5	SED	0.19 (J)	—	NA		—	0.38 (J)	1.5	1.8	3.3	0.55	
0316-95-0186	16-01523	0–0.5	SED	_	—	NA	_	—	_			_		_
0316-95-0187	16-01524	0–0.5	SED	—	—	NA		—	—	_	—	0.047 (J)	_	—
0316-95-0509	16-01661	0–0.16	SED	0.05 (J)	_	NA	_	_	0.1 (J)	0.45	0.66	0.98	0.43	0.42
0316-95-0510	16-01661	0.25–0.5	QBT4	0.07 (J)	_	_		_	0.092 (J)	0.4	0.55	0.81	0.3 (J)	0.31 (J)
0316-95-0511	16-01661	2.5–3	QBT4	—	—	0.006 (J)	_	_	—	—	—	—	_	—

Table 3.53-6Organic Chemicals Detected at SWMU 16-028(e) and SWMU 16-029(g)

Table 3.53-6 (continued)

Sample ID	Location ID	Depth (ft)	Media	Benzoic Acid	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Di-n-butylphthalate	Dinitrotoluene[2,4-]	Fluoranthene	Fluorene	ХМН	Indeno(1,2,3-cd)pyrene
Construction W	/orker SSL ^a			952000	20600	21.3	552	23800	476	8910	8910	11900	213
Industrial SSL^{c}				2500000 ^d	2340	2.34	1000 ^d	68400	103	24400	24400	34200	23.4
Residential SSI	с 			245000 ^d	621	0.621	78 ^d	6110	15.7	2290	2290	3060	6.21
0316-95-0507	16-01519	0.33–0.58	QBT4			—	_	—		_	—		—
0316-95-0508	16-01519	2.5–3.25	QBT4			—	_	—		_	—		—
0316-95-0183	16-01520	0–0.5	SED	0.2 (J)	4.8	0.8	0.35 (J)	—	0.079	12	0.74	0.221	2.6
0316-95-0184	16-01521	0–0.5	SED		5.3	0.61	0.59	—	1.38	14	1		2.5
0316-95-0185	16-01522	0–0.5	SED	_	1.7	0.11 (J)	0.086 (J)	—	_	3.4	0.17 (J)	_	0.84
0316-95-0186	16-01523	0–0.5	SED			—	_	—		0.048 (J)	—		—
0316-95-0187	16-01524	0–0.5	SED			—	_	—		0.05 (J)	—		—
0316-95-0509	16-01661	0–0.16	SED	0.14 (J)	0.87	0.081 (J)	_	0.066 (J)		1.2	0.049 (J)		0.44
0316-95-0510	16-01661	0.25–0.5	QBT4	0.13 (J)	0.75	0.064 (J)	0.039 (J)	_	_	1.2	0.058 (J)	_	0.32 (J)
0316-95-0511	16-01661	2.5–3	QBT4	_	_	_	_	_	_	_	_		_

Sample ID	Location ID	Depth (ft)	Media	Methylene Chloride	Methylnaphthalene[2-]	Methylphenol[4-]	Naphthalene	Nitroglycerin	PETN	Phenanthrene	Pyrene	Tetryl	Trinitrobenzene[1,3,5-]	Trinitrotoluene[2,4,6-]
Construction W	lorker SSL ^a			10600	1240	na ^g	702	23.8	na	7150	6680	953	8760	141
Industrial SSL ^c				1090	4100 ^d	3400 ^h	252	68.4	na	20500	18300	2740	27000 ^d	469
Residential SSI	с			199	310 ^d	310 ^h	45	6.11	na	1830	1720	244	2200 ^d	35.9
0316-95-0507	16-01519	0.33–0.58	QBT4	0.004 (J)		—	—	NA	NA	—	—		—	—
0316-95-0508	16-01519	2.5–3.25	QBT4	0.003 (J)	-	—	_	NA	NA	—	_	Ι	—	—
0316-95-0183	16-01520	0–0.5	SED	NA	0.16 (J)	—	0.45	—		4.6	11	0.53	—	—
0316-95-0184	16-01521	0–0.5	SED	NA	0.32 (J)	0.042 (J)	0.96	30.1	113	9.2	12	4.76	0.852	0.584
0316-95-0185	16-01522	0–0.5	SED	NA	_	—	0.093 (J)	—		1.8	3.2		—	—
0316-95-0186	16-01523	0–0.5	SED	NA	_	—	—	—	_	_	—	_	—	—
0316-95-0187	16-01524	0–0.5	SED	NA	_	_	—	_	_	_	0.045 (J)	_	_	_
0316-95-0509	16-01661	0–0.16	SED	NA	_	0.046 (J)	_	NA	NA	0.59	0.95	_	_	_
0316-95-0510	16-01661	0.25–0.5	QBT4	0.004 (J)	_	—	0.04 (J)	NA	NA	0.68	0.85	_	—	—
0316-95-0511	16-01661	2.5–3	QBT4	0.003 (J)	_	_	_	NA	NA	_	_	_	_	_

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b Pyrene used as a surrogate based on structural similarity.

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^e — = Not detected.

^f NA = Not analyzed.

^g na = Not available.

^h SSLs are from EPA (2007, 099314).

Sample ID		Denth (ft)	Media	ligh xplosives	letals	VOC
Sample ID	LOCATION ID	Deptil (it)	weula	ு ப்	Σ	Š
0316-97-0540	16-04077	0–1	SOIL	3458R	3459R	3457R
0316-97-0541	16-04078	0–1	FILL	3458R	3459R	3457R

Table 3.54-1 Samples Collected and Analyses Requested at AOC 16-015(d)

Table 3.54-2
Inorganic Chemicals above BVs at AOC 16-015(d)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Copper	Silver
Soil BV ^a		0.83	295	0.4	14.7	1		
Construction W	orker SSL ^b			124	4350	309	12400	1550
Industrial SSL ^c				454	224000	1120	45400	5680
Residential SSL	С			31.3	15600	77.9	3130	391
0316-97-0540	16-04077	0–1	SOIL	5.9 (UJ)	d	0.51 (U)	_	_
0316-97-0541	16-04078	0–1	FILL	7 (UJ)	330	0.61 (U)	18.1	1.2 (J)

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070). ^c SSLs are from NMED (2009, 108070).

^d — = Not detected or not above BV.

Sample ID	Location ID	Depth (ft)	Media	Benzo(g,h,i)perylene	Chrysene	Fluoranthene	Phenol	Pyrene
Construction W	orker SSL ^a			6680 ^b	20600	8910	68800	6680
Industrial SSL ^c				18300 ^b	2340	24400	205000	18300
Residential SSL	С			1720 ^b	621	2290	18300	1720
0316-97-0540	16-04077	0–1	SOIL	0.054 (J)	d	—	_	_
0316-97-0541	16-04078	0–1	FILL	0.056 (J)	0.038 (J)	0.034 (J)	0.16 (J)	0.052 (J)

Table 3.54-3Organic Chemicals Detected at AOC 16-015(d)

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b Pyrene used as a surrogate based on structural similarity.

^c SSLs are from NMED (2009, 108070).

^d — = Not detected.

Table 3.54-4

Samples Collected and Analyses Requested at SWMU 16-025(a2)

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC
0316-97-0538	16-04074	0–1	SOIL	3418R	3419R	3417R
0316-97-0539	16-04205	0–1	SOIL	3458R	3459R	3457R

Note: Numbers in analyte columns are request numbers.

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Silver
Soil BV ^a				0.83	0.4	1
Construction W	orker SSL ^b			124	309	1550
Industrial SSL ^c				454	1120	5680
Residential SSL	c			31.3	77.9	391
0316-97-0538	16-04074	8.4 (J-)	0.66 (U)	5.3		
0316-97-0539	16-04205	0–1	SOIL	6.9 (UJ)	0.6 (U)	1.1 (J)

Table 3.54-5Inorganic Chemicals above BVs at SWMU 16-025(a2)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070).

Sample ID	Location ID	Depth (ft)	Media	ХМН	Methylnaphthalene[2-]	RDX
Construction W	orker SSL ^a			11900	1240	715
Industrial SSL ^b				34200	4100 ^c	174
Residential SSL	b			3060	310 [°]	44.2
0316-97-0538	16-04074	0–1	SOIL	1.15	d	5.79
0316-97-0539	16-04205	0–1	SOIL	_	0.35	_

Table 3.54-6Organic Chemicals Detected at SWMU 16-025(a2)

Notes: Results are in mg/kg.

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b SSLs are from NMED (2009, 108070), unless otherwise noted.

^c SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

 d — = Not detected or not above BV.

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC
0316-97-0542	16-04085	0–1	SOIL	3458R	3459R	3457R
0316-97-0543	16-04087	0–1	FILL	3458R	3459R	3457R

 Table 3.54-7

 Samples Collected and Analyses Requested at SWMU 16-025(b2)

Table 3.54-8Inorganic Chemicals above BVs at SWMU 16-025(b2)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Lead	Mercury	Silver	Zinc
Soil BV ^a				0.83	0.4	22.3	0.1	1	48.8
Construction W	orker SSL ^b			124	309	800	92.9	1550	92900
Industrial SSL ^c				454	1120	800	310 ^d	5680	341000
Residential SSL	31.3	77.9	400	23 ^d	391	23500			
0316-97-0542	16-04085	0–1	SOIL	6.7 (UJ)	0.58 (U)	27.9	0.17	1.5 (J)	e
0316-97-0543	16-04087	0–1	FILL	7.5 (UJ)	0.65 (U)	23.3	0.6	1.5 (J)	49.9

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^e — = Not detected or not above BV.

Sample ID	Location ID	Depth (ft)	Media	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chlorophenol[2-]	Chrysene	Fluoranthene	Pyrene
Construction Worker SSL ^a				213	213	2060	1550	20600	8910	6680
Industrial SSL	b			23.4	23.4	234	5680	2340	24400	18300
Residential SS	SL ^b			6.21	6.21	62.1	391	621	2290	1720
0316-97-0542	16-04085	0–1	SOIL	c	_	_		_	0.034 (J)	0.055 (J)
0316-97-0543	16-04087	0–1	FILL	0.036 (J)	0.05 (J)	0.042 (J)	0.35	0.047 (J)	0.054 (J)	0.053 (J)

Table 3.54-9Organic Chemicals Detected at SWMU 16-025(b2)

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070)

(<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070) ^b SSLs are from NMED (2009, 108070).

 c — = Not detected.

Table 3.56-1							
Samples Collected and Analyses Requested at SWMU 16-025(p)							

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC
0316-97-0522	16-04009	0–1	SOIL	3319R	3320R	3318R
0316-97-0575	16-04011	0–1	SOIL	3319R	3320R	3318R
0316-97-0576	16-04012	0–1	SOIL	3319R	3320R	3318R
0316-97-0594	16-04012	1–2	SOIL	3527R	3528R	3526R

Note: Numbers in analyte columns are request numbers.

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Copper	Lead	Zinc
Soil BV ^a				0.83	0.4	14.7	22.3	48.8
Construction W	orker SSL ^b			124	309	12400	800	92900
Industrial SSL ^c				454	1120	45400	800	341000
Residential SSL	С			31.3	77.9	3130	400	23500
0316-97-0522	16-04009	0–1	SOIL	5.1 (U)	0.51 (U)	17.9	42	71.6
0316-97-0575	16-04011	0–1	SOIL	4.4 (U)	0.44 (U)	19.2	57.8	d
0316-97-0576	16-04012	0–1	SOIL	4.9 (U)	0.49 (U)	15.5	493	—
0316-97-0594	16-04012	1–2	SOIL	_	_	_	66.2	57.6

Table 3.56-2 Inorganic Chemicals above BVs at SWMU 16-025(p)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).
 ^c SSLs are from NMED (2009, 108070).

 d — = Not detected or not above BV.

Table 3.56-3Organic Chemicals Detected at SWMU 16-025(p)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene
Construction V	Norker SSL [®]	3		6680 ^b	66800	213	21.3	213	6680 ^b	20600	8910	213	7150	6680
Industrial SSL	C			18300 ^b	183000	23.4	2.34	23.4	18300 ^b	2340	24400	23.4	20500	18300
Residential SS	۶L ^c			1720 ^b	17200	6.21	0.621	6.21	1720 ^b	621	2290	6.21	1830	1720
0316-97-0522	16-04009	0–1	SOIL	0.12 (J)	0.081 (J)	0.84 (J)	0.75 (J)	1 (J)	0.53 (J)	0.59 (J)	0.83 (J)	0.36 (J)	0.2 (J)	1.9 (J)
0316-97-0575	16-04011	0–1	SOIL	d	_	0.35 (J)	0.39 (J)	0.49 (J)	0.27 (J)	0.25 (J)	0.31 (J)	0.2 (J)	0.12 (J)	0.89 (J)
0316-97-0576	16-04012	0–1	SOIL	_	_	0.28 (J)	0.32 (J)	0.39 (J)	0.21 (J)	0.23 (J)	0.24 (J)	0.15 (J)	0.14 (J)	0.73 (J)
0316-97-0594	16-04012	1–2	SOIL	—	—	0.39 (J)	0.36 (J)	0.5 (J)	—	0.38 (J)	0.39 (J)	—	0.28 (J)	0.99

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b Pyrene used as a surrogate based on structural similarity.

^c SSLs are from NMED (2009, 108070).

^d — = Not detected.

	-		-	-			
Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC	Cyanide (Total)
0316-97-0591	16-04005	0–1	SOIL	3340R	3339R	3338R	*
0316-97-0521	16-04006	0–1	SOIL	3319R	3320R	3318R	3320R
0316-97-0574	16-04008	0–1	SOIL	3319R	3320R	3318R	3320R

 Table 3.56-4

 Samples Collected and Analyses Requested at SWMU 16-025(q)

* --- =Analyses not requested.

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Copper	Cyanide (Total)	Lead	Silver	Zinc
Soil BV ^a	0.83	0.4	14.7	0.5	22.3	1	48.8			
Construction	Worker SSL	b -		124	309	12400	6190	800	1550	92900
Industrial SSL	c			454	1120	45400	227000	800	5680	341000
Residential SSL ^c				31.3	77.9	3130	1560	400	391	23500
0316-97-0591	16-04005	0–1	SOIL	d	_	52	NA ^e	167	2 (J)	74.1
0316-97-0521	16-04006	0–1	SOIL	5.1 (U)	0.51 (U)	128	1 (U)	467	_	_
0316-97-0574	16-04008	0–1	SOIL	4.3 (U)	0.43 (U)	33.5	1.1 (U)	129	—	49.1

Table 3.56-5Inorganic Chemicals above BVs at SWMU 16-025(q)

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070).

^d — = Not detected or not above BV.

^e NA = Not analyzed.

Table 3.56-6Organic Chemicals Detected at SWMU 16-025(q)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthylene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene
Construction V	Norker SSL [®]	a		6680 ^b	213	21.3	213	6680 ^b	20600	8910	213	7150	6680
Industrial SSL	C			18300 ^b	23.4	2.34	23.4	18300 ^b	2340	24400	23.4	20500	18300
Residential SS	SL ^c			1720 ^b	6.21	0.621	6.21	1720 ^b	621	2290	6.21	1830	1720
0316-97-0591	16-04005	0–1	SOIL	0.085 (J)	0.75	0.76	1	0.47	0.62	0.89	0.36 (J)	0.42	1.7
0316-97-0521	16-04006	0–1	SOIL	d	0.38 (J)	0.37 (J)	0.56 (J)	0.24 (J)	0.28 (J)	0.34 (J)	0.17 (J)	0.14 (J)	0.61 (J)
0316-97-0574	16-04008	0–1	SOIL	_	0.154 (J)	0.15 (J)	0.21 (J)	_	0.11 (J)	0.14 (J)	0.078 (J)	_	0.36 (J)

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b Pyrene used as a surrogate based on structural similarity.

^c SSLs are from NMED (2009, 108070).

^d — = Not detected.

	Samples Collected and Analyses Requested at SWMU 16-025(s)											
Sample ID	Location ID	Depth (ft)	Media	Gamma Spectroscopy	High Explosives	Isotopic Radium	Metals	Strontium-90	SVOC			
0316-97-0523	16-04015	0–1	SOIL	3460R	3335R	3460R	3334R, 3336R	3460R	3333R			

Table 3.56-7

Note: Numbers in analyte columns are request numbers.

Sample ID	Location ID	Depth (ft)	Media	Cobalt	Uranium
Soil BV ^a	8.64	1.82			
Construction W	orker SSL ^b			34.6	929
Industrial SSL^c				300 ^d	3410
Residential SSL		23 ^d	235		
0316-97-0523	16-04015	0–1	SOIL	9.5 (J)	2.8

Table 3.56-8Inorganic Chemicals above BVs at SWMU 16-025(s)

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

Table 3.56-9 Samples Collected and Analyses Requested at SWMU 16-034(I)

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC
0316-97-0520	16-04002	0–1	SOIL	3319R	3320R	3318R

Note: Numbers in analyte columns are request numbers.

Table 3.56-10
Inorganic Chemicals above BVs at SWMU 16-034(I)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Copper	Lead	Zinc
Soil BV ^a				0.83	0.4	14.7	22.3	48.8
Construction W	orker SSL ^b			124	309	12400	800	92900
Industrial SSL ^c				454	1120	45400	800	341000
Residential SSL ^c			31.3	77.9	3130	400	23500	
0316-97-0520	16-04002	0–1	SOIL	4.1 (U)	0.41 (U)	14.9	60.5	81.7

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c SSLs are from NMED (2009, 108070).

Sample ID	Location ID	Depth (ft)	Media	Gamma Spectroscopy	High Explosives	Metals	SVOC	VOC	Cyanide (Total)
RE16-98-0065	16-05940	8.65–9.15	FILL	*	4722R	4721R	4720R	—	4721R
RE16-98-0077	16-05940	9.65–10.15	QBT4	—	—	5088R	—	—	5088R
RE16-98-0066	16-05941	8.75–9.25	SOIL	—	4722R	4721R	4720R	—	4721R
RE16-98-0072	16-05941	9.25–9.75	QBT4	—	5046R	5045R	5044R	—	5045R
RE16-98-0084	16-05941	10.95–11.45	QBT4	—	—	5088R	—	—	5088R
RE16-98-0067	16-05942	8.75–9.25	FILL	—	4722R	4721R	4720R	—	4721R
RE16-98-0083	16-05942	9.25–9.75	QBT4	—	—	5088R	—	—	5088R
RE16-98-0085	16-05942	11.05–11.55	QBT4	—	—	5088R	—	—	5088R
RE16-98-0068	16-05947	0–0.5	FILL	—	4722R	4721R	4720R	—	4721R
RE16-98-0071	16-05962 CRACK	12.45–12.95	SOIL	_	5046R	5045R	5044R	—	5045R
RE16-98-0073	16-05963	0–0.5	FILL	—	5046R	5045R	5044R	—	5045R
RE16-99-0018	16-05963	10.5–11	QBT4	—	—	5229R	—	—	—
RE16-98-0074	16-05964	0–0.5	FILL	—	5046R	5045R	5044R	—	5045R
RE16-99-0019	16-05964	11.5–12	QBT4	—	—	—	5228R	—	—
RE16-98-0075	16-05965	10.35–10.85	FILL	_	5046R	5045R	5044R	—	5045R
RE16-98-0076	16-05966	8.65–9.15	FILL	_	5046R	5045R	5044R	—	5045R
RE16-99-0020	16-05986	10.5–11	QBT4	—	—	5229R	—	—	—
RE16-98-0069	XX-16-604063	0–0.5	FILL	4925R	4924R	4923R	4922R	4922R	4923R

 Table 3.56-11

 Samples Collected and Analyses Requested at SWMU 16-034(p)

* — =Analyses not requested.

Table 3.56-12 Inorganic Chemicals above BVs at SWMU 16-034(p)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Barium	Cadmium	Calcium	Cobalt	Copper	Cyanide (Total)	Lead	Manganese	Mercury	Selenium	Silver	Thallium	Zinc
Qbt2, 3, 4 BV ^a				0.5	2.79	46	1.63	2200	3.14	4.66	0.5	11.2	482	0.1	0.3	1	1.1	63.5
Soil BV ^a				0.83	8.17	295	0.4	6120	8.64	14.7	0.5	22.3	671	0.1	1.52	1	0.73	48.8
Construction W	orker SSL ^b			124	65.4	4350	309	na ^c	34.6	12400	6190	800	463	92.9	1550	1550	20.4	92900
Industrial SSL ^d				454	17.7	224000	1120	na	300 ^e	45400	227000	800	145000	310 ^e	5680	5680	74.9	341000
Residential SSL	d			31.3	3.9	15600	77.9	na	23 ^e	3130	1560	400	10700	23 ^e	391	391	5.16	23500
RE16-98-0065	16-05940	8.65–9.15	FILL	f	_		0.56 (U)	15000	—	1000	0.56 (U)	370		0.14	—	2.2 (U)	—	140
RE16-98-0077	16-05940	9.65–10.15	QBT4	0.57 (J)	—	_	—	—	—	12.7	0.53 (U)	15.6		—	0.55 (U)		—	
RE16-98-0066	16-05941	8.75–9.25	SOIL	—	8.6		0.55 (U)	24000	—	230	0.55 (U)	1600	_	0.24	—	2.2 (U)	_	210
RE16-98-0072	16-05941	9.25–9.75	QBT4	—	2.8		—	—	_		—	—		—	0.64 (U)	_	—	_
RE16-98-0084	16-05941	10.95–11.45	QBT4	0.61 (UJ)	—		—	—	—		0.56 (U)	—		—	0.59 (U)	_		_
RE16-98-0067	16-05942	8.75–9.25	FILL	—	—		1.9	20000	—	120	0.54 (U)	40000	_	0.27	—	2.2		290
RE16-98-0083	16-05942	9.25–9.75	QBT4	0.6 (UJ)	—		—	—	—		0.55 (U)	—		—	0.58 (U)	_	—	
RE16-98-0085	16-05942	11.05–11.55	QBT4	0.75 (J)	—	_	—	—	—	_	0.57 (U)	—		—	0.66 (J)		—	
RE16-98-0068	16-05947	0–0.5	FILL	—	—	320	3.5	17000	—	43	0.57 (U)	51	_	0.11 (U)	—	2.3 (U)	_	170
RE16-98-0071	16-05962 CRACK	12.45–12.95	SOIL	—	_	_	1.3	—	14.9	_	0.6 (J)	_	1450	—	_		_	_
RE16-98-0073	16-05963	0–0.5	FILL	—	13.2	_	—	—	_	157	—	219	_	—	_	1.6	_	197
RE16-99-0018	16-05963	10.5–11	QBT4	—	_	_	—	—	_	_	NA ^g	_	_	0.11 (U)	1.1 (U)	_	_	—
RE16-98-0074	16-05964	0–0.5	FILL	—	_	_	—	—	_	_	—	23	_	—	_		_	58.7
RE16-98-0076	16-05966	8.65–9.15	FILL	—	_	312	0.48	7900	_	33.6	—	36.7	_	—	_		_	257
RE16-99-0020	16-05986	10.5–11	QBT4	0.86 (UJ)	_	_	—	_			NA	25	_	—	1.1 (U)	—	_	_
RE16-98-0069	XX-16-604063	0–0.5	FILL	_	_	_	0.6 (U)	_	_		0.6 (U)		_	0.12 (U)	_	2.4 (U)	2.4 (U)	_

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c na = Not available.

^d SSLs are from NMED (2009, 108070), unless otherwise noted.

^e SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

f = Not detected or not above BV.

^g NA = Not analyzed.

Organic Chemicals Detected at SWMU 16-034(p)									
Sample ID	Location ID	Depth (ft)	Media	Pyrene					
Construction W	6680								
Industrial SSL ^b				18300					
Residential SSI	1720								
RE16-98-0074	16-05964	0–0.5	FILL	0.41					

Table 3.56-13

Notes: Results are in mg/kg.

^a Construction worker SSL calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b SSLs are from NMED (2009, 108070).

Table 3.57-1
Samples Collected and Analyses Requested at SWMU 16-031(a)

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	SVOC
RE16-98-2014	16-05914	0–0.5	SOIL	5042R	5041R, 5043R	5040R

Note: Numbers in analyte columns are request numbers.

Table 3.57-2 Inorganic Chemicals above BVs at SWMU 16-031(a)

Sample ID	Location ID	Depth (ft)	Media	Cadmium	Calcium	Copper	Lead	Uranium	Zinc
Soil BV ^a				0.4	6120	14.7	22.3	1.82	48.8
Construction W	orker SSL ^b			309	na ^c	12400	800	929	92900
Industrial SSL ^d				1120	na	45400	800	3410	341000
Residential SSL ^d			77.9	na	3130	400	235	23500	
RE16-98-2014	16-05914	0–0.5	SOIL	3.8	6460	326	49.3	2.04	586

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070). ^c na = Not available.

^d SSLs are from NMED (2009, 108070).

Table 3.57-3 Organic Chemicals Detected at SWMU 16-031(a)

Sample ID	Location ID	Depth (ft)	Media	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Fluoranthene	Phenanthrene	Pyrene
Construction Wo	rker SSL ^a			213	21.3	213	2060	20600	8910	7150	6680
Industrial SSL ^b				23.4	2.34	23.4	234	2340	24400	20500	18300
$Residential SSL^{b}$				6.21	0.621	6.21	62.1	621	2290	1830	1720
RE16-98-2014	16-05914	0–0.5	SOIL	0.88	0.75	0.82	0.65	1.4	2	0.71	1.5
later Breakly and is				•	1° A						

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

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b SSLs are from NMED (2009, 108070).

Table 3.69-1 Samples Collected and Analyses Requested at AOC C-16-030 and AOC C-16-031

Sample ID	Location ID	Depth (ft)	Media	High Explosives	Metals	PCB	SVOC	TPH-DRO	VOC
RE16-03-52666	16-22561	6–6.5	SOIL	1923S	1923S	*	1923S	1923S	1923S
RE16-03-52667	16-22562	6–6.5	SOIL	1923S	1923S	_	1923S	1923S	1923S
RE16-07-73748	16-27020	6–6.5	QBT3	_	7022S	7022S	—	7022S	_
RE16-07-73749	16-27020	11–11.5	QBT3	_	7022S	_	—	7022S	_
RE16-07-73750	16-27020	31–31.5	QBT3	_	7022S	_	—	7022S	_
RE16-07-73751	16-27021	6–6.5	QBT3	_	7022S	_	—	7022S	_
RE16-07-73754	16-27022	6–6.5	QBT3	_	7022S	_	—	7022S	_
RE16-07-73755	16-27022	11–11.5	QBT3	_	7022S	_	—	7022S	_
RE16-07-73756	16-27022	31–31.5	QBT3	_	7022S	_	—	7022S	_
RE16-07-73757	16-27023	6–6.5	QBT3	_	7022S	_	—	7022S	_
RE16-07-73758	16-27023	11–11.5	QBT3	_	7022S	_	—	7022S	_
RE16-07-73759	16-27023	31–31.5	QBT3	_	7022S	_	—	7022S	_
RE16-07-73760	16-27024	6–6.5	QBT3	_	7022S	_	—	7022S	_
RE16-07-73761	16-27024	11–11.5	QBT3	_	7022S	_	—	7022S	_
RE16-07-73762	16-27024	31–31.5	QBT3	_	7022S	_	—	7022S	_
RE16-07-2946	16-600642	6–6.5	QBT3	—	07-115	_	—	07-115	—
RE16-07-2947	16-600642	11–11.5	QBT3	_	07-115	_	_	07-115	_

Note: Numbers in analyte columns are request numbers.

* — =Analyses not requested.
| Sample ID | Location ID | Depth
(ft) | Media | Aluminum | Antimony | Arsenic | Barium | Beryllium | Cadmium | Calcium | Chromium | Cobalt | Copper | Lead | Magnesium | Mercury | Nickel | Selenium | Vanadium | Zinc |
|-----------------------------------|-------------------------|---------------|-------|-----------|-----------|---------|-----------|-----------|---------|-----------------|--------------------------|-------------------------|----------|-----------|-----------|------------------------|----------|-----------|-----------|-----------|
| Qbt2, 3, 4 BV ^a | | | 1 | 7340 | 0.5 | 2.79 | 46 | 1.21 | 1.63 | 2200 | 7.14 | 3.14 | 4.66 | 11.2 | 1690 | 0.1 | 6.58 | 0.3 | 17 | 63.5 |
| Soil BV ^a | | | | 29200 | 0.83 | 8.17 | 295 | 1.83 | 0.4 | 6120 | 19.3 | 8.64 | 14.7 | 22.3 | 4610 | 0.1 | 15.4 | 1.52 | 39.6 | 48.8 |
| Construction W | /orker SSL ^b | | | 40700 | 124 | 65.4 | 4350 | 144 | 309 | na ^c | 449 ^d | 34.6 | 12400 | 800 | na | 92.9 | 6190 | 1550 | 1550 | 92900 |
| Industrial SSL ^e | | | | 1130000 | 454 | 17.7 | 224000 | 2260 | 1120 | na | 2920 ^d | 300 ^f | 45400 | 800 | na | 310 ^f | 22700 | 5680 | 5680 | 341000 |
| Residential SSL | e | | | 78100 | 31.3 | 3.9 | 15600 | 156 | 77.9 | na | 219 ^d | 23 ^f | 3130 | 400 | na | 23 ^f | 1560 | 391 | 391 | 23500 |
| RE16-03-52666 | 16-22561 | 6–6.5 | SOIL | g | _ | _ | — | — | _ | — | — | 13.4 (J+) | 16.5 (U) | 31.9 (J+) | — | — | — | — | — | — |
| RE16-03-52667 | 16-22562 | 6–6.5 | SOIL | — | _ | — | — | — | 0.422 | — | — | 9.19 (J+) | 20.9 (U) | — | — | — | — | — | — | 50.8 (J+) |
| RE16-07-73748 | 16-27020 | 6–6.5 | QBT3 | 13400 (J) | — | 3.5 | 213 (J-) | — | — | 2840 (J) | 9 (J-) | 5.3 (J-) | — | 31.1 (J) | 1810 (J-) | — | 8.1 (J-) | 0.58 (U) | 22.3 (J-) | — |
| RE16-07-73749 | 16-27020 | 11–11.5 | QBT3 | — | _ | _ | 72.9 (J-) | — | _ | 5110 | — | — | — | 22.3 (J) | — | — | — | 0.35 (J) | — | — |
| RE16-07-73750 | 16-27020 | 31–31.5 | QBT3 | — | _ | — | 86 (J-) | — | — | _ | — | — | — | 18 (J) | — | 0.38 (J) | — | 0.55 (U) | — | — |
| RE16-07-73751 | 16-27021 | 6–6.5 | QBT3 | — | — | — | 143 (J-) | — | — | — | — | — | — | — | — | — | — | — | — | — |
| RE16-07-73754 | 16-27022 | 6–6.5 | QBT3 | 9330 | — | _ | 137 (J-) | — | — | 2430 | _ | — | — | — | | — | — | — | _ | — |
| RE16-07-73755 | 16-27022 | 11–11.5 | QBT3 | 21000 | — | — | 122 (J-) | 2.2 (J-) | — | 3880 | 8.7 (J-) | 3.2 (J-) | — | 15.2 (J) | 3270 (J-) | — | 14 (J-) | — | — | _ |
| RE16-07-73756 | 16-27022 | 31–31.5 | QBT3 | 10900 | _ | 3.1 | 151 (J-) | — | _ | 3440 | 8.8 (J-) | 5.1 (J-) | — | 23.6 (J) | 1830 (J-) | — | 6.9 (J-) | 0.62 (U) | 21.6 (J-) | _ |
| RE16-07-73757 | 16-27023 | 6–6.5 | QBT3 | 10600 | — | _ | 140 (J-) | — | — | — | _ | 4.6 (J-) | — | 11.8 (J) | 2010 (J-) | — | — | 0.61 (U) | _ | — |
| RE16-07-73758 | 16-27023 | 11–11.5 | QBT3 | — | 0.58 (UJ) | — | — | — | — | — | — | — | — | — | | — | — | 0.37 (J) | — | _ |
| RE16-07-73759 | 16-27023 | 31–31.5 | QBT3 | 9100 | _ | _ | 103 (J-) | — | _ | _ | 7.2 (J-) | 3.3 (J-) | — | — | | — | — | — | _ | _ |
| RE16-07-73760 | 16-27024 | 6–6.5 | QBT3 | 10100 | _ | _ | 86.8 (J-) | — | — | 2420 | _ | _ | — | _ | 2070 (J-) | — | 7.5 (J-) | 0.48 (J) | _ | — |
| RE16-07-73761 | 16-27024 | 11–11.5 | QBT3 | — | 0.56 (UJ) | _ | — | — | _ | _ | _ | _ | — | — | | — | — | — | _ | — |
| RE16-07-73762 | 16-27024 | 31–31.5 | QBT3 | — | 0.56 (UJ) | _ | — | _ | — | — | _ | — | — | — | — | _ | _ | _ | _ | _ |
| RE16-07-2946 | 16-600642 | 6–6.5 | QBT3 | — | — | _ | _ | — | — | — | _ | — | — | — | — | — | — | 0.58 (J-) | _ | _ |
| RE16-07-2947 | 16-600642 | 11–11.5 | QBT3 | 12500 | _ | _ | 187 (J-) | _ | _ | 3200 | 7.4 (J-) | | — | _ | 2460 (J-) | _ | 8.5 (J-) | _ | _ | _ |

Table 3.69-2Inorganic Chemicals above BVs at AOC C-16-030 and AOC C-16-031

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

^a BVs are from LANL (1998, 059730).

^b Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^c na = Not available.

^d SSLs are for hexavalent chromium.

^e SSLs are from NMED (2009, 108070), unless otherwise noted.

^f SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^g — = Not detected or not above BV.

Table 3.69-3 Organic Chemicals Detected at AOC C-16-030 and AOC C-16-031

Sample ID	Location ID	Depth (ft)	Media	Bis(2-ethylhexyl)phthalate	Butylbenzene[n-]	Butylbenzene[sec-]	Dibenzofuran	Fluorene	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	TPH-DRO
Construction Wor	rker SSL ^a			4760	20100	18000	552	8910	1240	702	7150	na ^b
Industrial SSL^{c}				1370	560 ^d	420 ^d	1000 ^e	24400	4100 ^e	252	20500	200 ^f
$\textbf{Residential SSL}^{c}$				347	140 ^d	110 ^d	78 ^e	2290	310 ^e	45	1830	200 ^f
RE16-03-52666	16-22561	6–6.5	SOIL	0.69	0.33	0.12	0.6	0.45	2.2	0.48	0.74	g
RE16-03-52667	16-22562	6–6.5	SOIL	0.64	0.15	0.078	—	_	—	—	_	—
RE16-07-73751	16-27021	6–6.5	QBT3	NA ^h	NA	NA	NA	NA	NA	NA	NA	15000
RE16-07-73754	16-27022	6–6.5	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	71
RE16-07-73759	16-27023	31–31.5	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	45
RE16-07-2946	16-600642	6–6.5	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	290
RE16-07-2947	16-600642	11–11.5	QBT3	NA	NA	NA	NA	NA	NA	NA	NA	330 (J+)

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

^a Construction worker SSLs calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070).

^b na = Not available.

^c SSLs are from NMED (2009, 108070), unless otherwise noted.

^d SSLs are from EPA (2007, 099314).

^e SSLs are from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>).

^f SSLs are from NMED (2006, 094614).

^g — = Not detected.

^h NA = Not analyzed.

Table 3.76-1 Samples Collected and Analyses Requested at AOC C-16-069

Sample ID	Location ID	Depth (ft)	Media	High Explosives	SVOC
0316-97-0537	16-04067	0–1	SOIL	3353R	3351R

Note: Numbers in analyte columns are request numbers.

Table 3.76-2 **Organic Chemicals Detected at AOC C-16-069**

Sample ID	Location ID	Depth (ft)	Media	Pyrene		
Construction Worker SSL ^a 6680						
Industrial SSL ^b 18300						
Residential SSL ^b				1720		
0316-97-0537	16-04067	0–1	SOIL	0.08 (J)		

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

^a Construction worker SSL calculated using toxicity value from EPA regional screening tables (<u>http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm</u>) and equation and parameters from NMED (2009, 108070). ^b SSLs are from NMED (2009, 108070).

Appendix A

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

A-1.0 ACRONYMS AND ABBREVIATIONS

amsl	above mean sea level
AOC	area of concern
BTEX	benzene, toluene, ethylbenzene, xylene
bgs	below ground surface
BMP	best management practice
BV	background value
Consent Order	Compliance Order on Consent
D&D	decontamination and decommissioning
DOE	Department of Energy (U.S.)
DRO	diesel-range organic
EP	Environmental Programs
EPA	Environmental Protection Agency (U.S.)
ER ID	Environmental Remediation and Surveillance Program identification number
FV	fallout value
GRO	gasoline-range organic
HE	high explosives
HIR	historical investigation report
HMX	high-melting explosive (also octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine)
HRMB	Hazardous and Radioactive Materials Bureau
LASL	Los Alamos Scientific Laboratory (Laboratory's name before January 1, 1981)
LANL	Los Alamos National Laboratory
MDA	material disposal area
NFA	no further action
NMED	New Mexico Environment Department
NPDES	National Pollutant Discharge Elimination System
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
RDX	research department explosive (also hexahydro-1,3,5-trinitro-1,3,5-triazocyclohexane)
RFI	Resource Conservation and Recovery Act Facility Investigation
RPF	Records Processing Facility
SVOC	semivolatile organic compound

SWAT	Surface Water Assessment Team
SWMU	solid waste management unit
ТА	technical area
TAL	target analyte list
TNT	2,4,6-trinitrotoluene
ТРН	total petroleum hydrocarbons
TSCA	Toxic Substances Control Act
UST	underground storage tank
VCA	voluntary corrective action
VCM	voluntary corrective measure
VCP	vitrified-clay pipe
VOC	volatile organic compound
WWTP	wastewater treatment plant
XRF	x-ray fluorescence

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

A-2.0 METRIC CONVERSION TABLE

A-3.0 DATA QUALIFIER DEFINITIONS

Data Qualifior	Definition
Qualifier	Deminitori
U	The analyte was analyzed for but not detected.
J	The analyte was positively identified, and the associated numerical value is estimated to be more uncertain than would normally be expected for that analysis.
J+	The analyte was positively identified, and the result is likely to be biased high.
J-	The analyte was positively identified, and the result is likely to be biased low.
UJ	The analyte was not positively identified in the sample, and the associated value is an estimate of the sample-specific detection or quantitation limit.
R	The data are rejected as a result of major problems with quality assurance/quality control (QA/QC) parameters.

Appendix B

Analytical Suites and Results (on CD included with this document)