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Historical Investigation Report for Starmer/Upper Pajarito Canyon Aggregate Area



Prepared by the Environmental Programs Directorate

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September 2010

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EXECUTIVE SUMMARY

The Starmer/Upper Pajarito Canyon Aggregate Area includes Technical Area 08 (TA-08), TA-09, and portions of TA-22 and TA-40 of Los Alamos National Laboratory and consists of 139 solid waste management units (SWMUs) and areas of concern (AOCs). Of these sites, 62 have been previously investigated and/or remediated and have been approved for no further action. For the remaining 77 sites, this historical investigation report provides site descriptions, summarizes previous investigations, and presents analytical results, if available. Of the 77 SWMUs and AOCs in the Starmer/Upper Pajarito Canyon Aggregate Area that require some additional characterization, 16 sites are located within TA-08, 41 sites are located within TA-09, 7 sites are located within TA-22, and 13 sites are located within TA-40. The sites include

- off-gas systems
- firing sites, firing pits, and a detonation site
- a burn pit and burning areas
- septic tanks, sumps, septic systems, drainlines, storm drains, and outfalls
- a basket pit, a surface impoundment, and an oxidation pond
- a storage vessel and storage areas
- material disposal areas, disposal pits, a landfill, and surface disposal areas
- building footprints.

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 Starmer/Upper Pajarito Canyon Aggregate Area Investigation Work Plan.

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Appendixes

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

Appendix B Starmer/Upper Pajarito Canyon Aggregate Area Analytical Data (on CD included with this document)

Plates

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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 mi^2 of the Pajarito Plateau, which consists of a series of fingerlike mesas separated by deep canyons containing perennial and intermittent streams running from west to east. Mesa tops range in elevation from approximately 6200 to 7800 ft above mean sea level (amsl). The Starmer/Upper Pajarito 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, 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).

This HIR describes operational histories, previous investigations, and analytical data for SWMUs and AOCs that 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 HIR Overview

The Starmer/Upper Pajarito Canyon Aggregate Area includes 139 SWMUs and AOCs, 62 of which have been remediated and approved for no further action (NFA). The remaining 77 sites require additional characterization. Of these 77 sites, 16 are located within Technical Area 08 (TA-08), 41 are located within TA-09, 7 are located within TA-22, and 13 are located within TA-40.

Table 1.1-1 provides a summary of the 139 sites within the Starmer/Upper Pajarito Canyon Aggregate Area. For the 62 sites approved for NFA, brief descriptions and the references for the approval documents are provided in Table 1.1-1. For the remaining 77 sites under investigation, this HIR provides site descriptions, summarizes previous investigations, and presents analytical results in sections 2 (TA-08), 3 (TA-09), 4 (TA-22), and 5 (TA-40). Plate 1 shows only the sites under investigation in the Starmer/Upper Pajarito Canyon Aggregate Area with monitoring wells, surface water and stormwater runoff monitoring stations, and canyon reaches.

1.2 Data Overview

Data evaluated in this report include historical data collected in 1994 through 1997, 1999, and 2001 as part of Resource Conservation and Recovery Act (RCRA) facility investigations (RFIs) and other investigations or corrective actions.

All data records include a vintage code field denoting how and where samples were submitted for analyses. In the early years, the samples were submitted to the Laboratory's Chemical Science and Technology (CST) Division and were either analyzed at a CST laboratory (on-site) or submitted to one of several off-site contract analytical laboratories. Samples analyzed at a CST laboratory are identified by the vintage code "CST Onsite." Two vintage codes identify samples CST Division submitted to off-site contract analytical laboratories—"CST Offsite" if validation was not performed and "CSTROUT03" if validation was performed.

From late 1995 until the present, samples have been submitted through the Sample Management Office (SMO) to off-site contract analytical laboratories. Two vintage codes identify samples the SMO submitted to off-site contract analytical laboratories—"AN95" if validation was not performed and "SMO" if validation was performed.

Vintage codes for data presented in this HIR are provided in Appendix B. Data presented in tables and in figures in this HIR are decision-level data of "SMO" vintage only. Both decision-level data and screening-level data (vintage codes other than "SMO") are presented 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 and radionuclides include only decision-level data where sample concentrations are above the BVs/FVs or detected if no BVs/FVs are available. Data tables for organic chemicals include all detected concentrations of organic chemicals.

Decision-level data will be included, along with all results from samples proposed in the investigation work plan, in the subsequent investigation report and used to determine if the nature and extent of contamination are defined. All available decision-level data will be used to determine representative concentrations of site contaminants and to perform human health and ecological risk-screening evaluations as appropriate. Screening-level data are used to identify areas of contamination and to guide sample collection and analyses proposed in the Starmer/Upper Pajarito Canyon Aggregate Area Investigation Work Plan (LANL 2010, 110527) but will not be used in defining the nature and extent of contamination or in risk-screening evaluations.

2.0 SITES ASSOCIATED WITH TA-08

Technical Area 08 is located on a broad mesa bounded on the north by Pajarito Canyon and on the south by Cañon de Valle. The mesa drains to Pajarito Canyon via three tributaries. A homestead, Anchor Ranch, originally occupied the land from the early 1900s to 1943. In 1943, the War Department acquired Anchor Ranch to construct a proving ground for the development and testing of components for a uranium gun device, the weapon known as Little Boy, which was exploded over Hiroshima. When the War Department acquired Anchor Ranch, eight log/adobe structures occupied the site.

The Anchor West proving ground (i.e., TA-08) was constructed in 1943 west of Anchor Ranch Road. Structures included three partially underground concrete buildings and a gun site. The three buildings housed operational support for the experiments conducted at the gun site.

Building 08-1, the largest of the structures, served as the primary support facility and contained the tower periscope, darkroom, camera room, loading docks, ventilation systems, and work areas. Building 08-2, the process building, is west of building 08-1. Based on this building's explosion-proof fixtures and "deluge" fire suppression system, building 08-2 was likely used for handling volatile materials. Building 08-3 is located to the east of building 08-1. It contained diesel-powered electrical generators to support operations at buildings 08-1 and 08-2 and the gun site and also provided diesel fuel storage to run the generators.

The gun site was positioned to the south of and above the roof level of the three partially underground buildings. The gun site consisted of two 3-in. naval antiaircraft guns and three sand or sawdust butts to catch the experimental projectiles fired from the two gun mounts. Instrumentation, propellants, and various preliminary projectile designs were tested. When the gun site ceased operation in 1946, the naval guns and various other items were buried in a pit, Material Disposal Area Q (MDA Q), north of the northernmost sand butt.

Beginning in 1948 and continuing through 1966, buildings 08-1, 08-2, and 08-3 underwent certain alterations to accommodate new functionality at TA-08. Building 08-1 was subsequently used for developing new types of explosives and as a laboratory for crystal growth experiments. Building 08-2 was used as a machine shop and later as a storage area. Building 08-3 housed a hydraulic press and later was used as a laboratory.

In 1949 and 1950, modern TA-08 was established northwest of the gun site to house Group X-1, which had been developing x-ray techniques at a location outside TA-08. Several of the original ranch buildings were removed to make way for the new construction, and the rest were abandoned in place. Seven major structures were erected. The new buildings contained office space, photographic-processing labs, and laboratories devoted to various types of x-ray work—some involving the use of contained radioactive sources. In addition, septic and drainage systems, water and electric utilities, and transformer stations were installed. Most of the structures erected from 1949 to 1950 are still in use.

The only structures that remain of the historic TA-08 proving ground are the three core, partially underground concrete buildings (including their retaining walls) and the two concrete pads that supported the gun mounts, The three core buildings, which have been inactive for several years, are about to undergo historic preservation. Restoration of the buildings is planned to begin in the spring of 2011.

2.1 AOC 08-001(a), Off-Gas System

AOC 08-001(a) (Figure 2.1-1) is the off-gas ventilation system that served building 08-1 at TA-08 from 1943 to 1968. The ventilation system consisted of duct work, five exhaust vents in the main portion of the building, an exhaust fan in the darkroom at the southwest corner of the building, and an exhaust fan in the boiler room at the east end of the building. The vents, which exhausted air to the outdoors, were louvered and located near the floor along the north wall of the building. Building 08-1 is covered with earth on three sides, and the building's north wall extends beyond the building to the east and to the west as part of a retaining wall system. Building 08-01 was built in 1943 during World War II for use as the control building for the gun site (SWMU 08-002). After the war, the building was used to develop new explosives until TA-09 was constructed (from 1950 to 1953) and became available for that purpose. Crystal growth experiments were later conducted at building 08-1. Building 08-1 is about to undergo historic preservation. Restoration of the building is planned to begin in the spring of 2011.

2.1.1 Previous Investigations for AOC 08-001(a)

No previous investigations have been conducted at this site.

2.1.2 Analytical Results for AOC 08-001(a)

No decision-level data are available for this site.

2.2 AOC 08-001(b), Off-Gas System

AOC 08-001(b) (Figure 2.1-1) is the off-gas ventilation system that served building 08-2 at TA-08 from 1943 to 1968. The ventilation system consisted of exhaust ductwork and a blower fan. Building 08-2 is covered with earth on three sides, and the building's north wall extends beyond the building to the east and to the west as part of a retaining wall system. Based on this building's explosion-proof fixtures and "deluge" fire suppression system, building 08-2 was likely used for handling volatile materials in support of operations at the gun site (SWMU 08-002). After World War II, building 08-2 was used as a machine shop and for storage. Building 08-2, which has been inactive for several years, is about to undergo historic preservation. Restoration of the building is planned to begin in the spring of 2011.

2.2.1 Previous Investigations for AOC 08-001(b)

No previous investigations have been conducted at this site.

2.2.2 Analytical Results for AOC 08-001(b)

No decision-level data are available for this site.

2.3 SWMU 08-002, Gun Site

SWMU 08-002 (Figure 2.3-1) is the location of a former gun site at TA-08, approximately 80 ft south of building 08-1. The gun site, designed specifically for testing the nonnuclear components of the Little Boy weapon, operated from 1943 to 1945. The gun site consisted of two individual gun installations (structures 08-4 and 08-5) placed next to each other. A wooden shed mounted on rails covered each gun, so that the shed could be moved away from the gun.

Each gun installation consisted of a 3-in. naval antiaircraft gun mounted on a concrete pad and a sand butt—target area—into which the gun fired. In addition to a sand butt, the southern gun installation (structure 08-4) employed a second butt that was filled with sawdust. Each butt was placed several yards away from its respective gun mount. The butts were constructed of heavy wooden beams on three sides with the fourth side open and facing the gun. The butts were 20 ft long x 10 ft wide x 3 ft high.

The butts received experimental shots fired from the guns. The explosive propellant commonly used in the tests was cordite, which contained nitroglycerin and nitrocellulose fabricated with acetone (LANL 1993, 020949, pp. 5-15−5-17). The butts generally received inert projectiles for recovery and examination, but occasionally projectiles were fired at targets placed in the butts. The targets were made of combinations of steel, tungsten carbide, depleted uranium, copper, lead, and in some instances, small components made of beryllium and polonium. The target tests occasionally resulted in the fragmentation of targets or projectiles, scattering debris for distances of up to 75 yd. Currently, only the concrete gun pads and two piles of sand are present at the site (LANL 1997, 056664, p. 49).

2.3.1 Previous Investigations for SWMU 08-002

An RFI was conducted at SWMU 08-002 in April 1994 (LANL 1997, 056664). Four samples were collected from two locations at each of the two sand butts. Samples were collected from depth intervals ranging from 0 to 4 ft below ground surface (bgs). Ten samples were collected from 10 locations within a

75-yd radius of the two sand butts. Samples were collected from depth intervals ranging from 0 to 0.5 ft bgs. An additional five samples were collected from five locations west of the sand butts to support the characterization of SWMU 08-006(a), but they fall within the potentially impacted area of SWMU 08-002 and are included in the data set for this site.

Sampling locations were field-screened for radioactivity, organic vapors, and high explosives (HE). All field screening results were negative or at background levels. All samples were submitted to an off-site contract analytical laboratory for analysis of a limited suite of inorganic chemicals (metals), which included beryllium, copper, and lead (LANL 1997, 056664, pp. 49-56).

The results of the analyses of soil samples collected during the 1994 RFI are as follows (LANL 1997, 056664, pp. 53-55): lead was detected above BV.

2.3.2 Analytical Results for SWMU 08-002

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

2.4 Consolidated Unit 08-003(a)-00

Consolidated Unit 08-003(a)-00 (Figure 2.4-1) consists of a decommissioned septic tank [SWMU 08-003(a)], floor drains from building 08-1 [SWMU 08-004(a)], drainlines from building 08-2 [SWMU 08-004(b)], and a storm drain inlet, drainline, and outfall [SWMU 08-009(a)].

2.4.1 SWMU 08-003(a), Decommissioned Septic Tank

SWMU 08-003(a) (Figure 2.4-1) is a decommissioned septic tank (structure 08-59), and associated inlet and outlet lines that served buildings 08-1 and 08-3 at TA-08. The septic tank is located approximately 35 ft north of building 08-3 on the west side of Anchor Ranch Road. The septic tank is constructed of precast reinforced concrete with dimensions of approximately 10 ft long x 4 ft wide x 7 ft deep and a capacity of 1197 gal. The septic tank and its associated lines are buried approximately 1.5 ft bgs.

The septic tank received effluent from the boiler room, darkroom, and restroom of building 08-1 and from the restroom of building 08-3. In 1995, the tank was pressure-washed, backfilled with sand, and left in place. Before backfilling, the tank discharged into a nearby storm drainline [SWMU 08-009(a)], which flowed to the outfall east of Anchor Ranch Road. Building 08-1 was the control building for the gun site (SWMU 08-002) during World War II. After the war, the building was used to develop explosives and still later used to conduct crystal growth experiments. Building 08-3 supported the activities conducted at the gun site (SWMU 08-002).

2.4.1.1 Previous Investigations for SWMU 08-003(a)

In 1971, the tank contents were sampled. Background counts of gross-alpha and gross-beta radioactivity were used to determine that the tank contents were free of radioactive contamination. Volatile hydrocarbons and oil, explosives, and chemicals were found in the tank (LANL 1995, 046092.21, p. 3).

The expedited cleanup (EC) plan documents that an RFI was conducted at SWMU 08-003(a) in August 1994. Two samples of tank sludge and two samples of tank liquid were obtained and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), RCRA metals, and HE (LANL 1995, 046092.21, p. 6).

An EC was conducted at SWMU 08-003(a) from August 1995 to September 1995. The EC consisted of removing the contents of the tank by first removing the overburden, removing the tank's lid, and pumping out part of the contents. The contents were removed and the waste was placed into 55-gal. drums for disposal. The inside of the tank was then cleaned by pressure-washing and left in place. The wash waste was removed using a vacuum truck. A backhoe was used to expose the soil adjacent to the tank to a depth of 7 ft, and soil samples were collected. A total of eight subsurface soil samples were collected from four locations adjacent to the tank and were analyzed for VOCs. Samples were collected from depth intervals ranging from 3 to 7 ft bgs. During sampling at the north end of the tank, a 2-ft section of the outlet pipe was broken. All of the pipe pieces and sludge were placed in containers. The pipe was plugged along with the tank inlet and outlet to prevent contamination migrating from the remaining drainline (LANL 1995, 059153, pp. 1−2).

The results of the analyses of soil samples collected during the 1995 EC are as follows (LANL 1995, 059153, Appendix A): acetone and methylene chloride were detected.

2.4.1.2 Analytical Results for SWMU 08-003(a)

The data collected during the 1995 EC do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

2.4.2 SWMU 08-004(a), Floor Drains

SWMU 08-004(a) (Figure 2.4-1) consists of the floor drains in building 08-1 at TA-08. The only floor drains located in building 08-1 are the two floor drains in the boiler room at the east end of the building. Both floor drains lead to a single drainline that exits the north side of the building near its northeast corner and discharged to the SWMU 08-003(a) septic tank (structure 08-59). All other drainlines in building 08-1 are connected to plumbing fixtures and exit the building through a single drainline near the northwest corner of the building. This drainline also discharged to the SWMU 08-003(a) septic tank.

Building 08-1 was the control building for the gun site (SWMU-08-002) during World War II. After the war, the building was used to develop explosives and still later used to conduct crystal growth experiments. Building 08-1 has been inactive for several years.

2.4.2.1 Previous Investigations for SWMU 08-004(a)

No previous investigations have been conducted at this site.

2.4.2.2 Analytical Results for SWMU 08-004(a)

No decision-level data are available for this site.

2.4.3 SWMU 08-004(b), Drainline

SWMU 08-004(b) (Figure 2.4-1) consists of a drainline from building 08-2 at TA-08. Engineering drawings show the only drainline that exits building 08-2 is the 1.25-in.-diameter drainline exiting the building's north side (LASL 1943, 110446). This drainline received condensate from the two steam radiators located in the building (LASL 1943, 110447). Building 08-2 was built in 1943 and served as a process building for the gun site (SWMU 08-002). After World War II, the building was used as a machine shop and for storage. Building 08-2 has been inactive for several years.

2.4.3.1 Previous Investigations for SWMU 08-004(b)

No previous investigations have been conducted at this site.

2.4.3.2 Analytical Results for SWMU 08-004(b)

No decision-level data are available for this site.

2.4.4 SWMU 08-009(a), Drainline and Outfall

SWMU 08-009(a) (Figure 2.4-1) is a storm drainline and outfall at TA-08 located north of buildings 08-1, 08-2, and 08-3. The 18-in.-diameter concrete drainline was installed in 1943 and receives stormwater runoff from open land. The stormwater enters the drainline through three drop inlets placed along the length of the storm drainline. The first of these inlets is located approximately 40 ft west of building 08-2. From this inlet, the drainline extends east approximately 375 ft and discharges at a point 10 ft east of Anchor Ranch Road (LANL 1993, 020949, p. 5-28).

Before 1995, the outlet line from the SWMU 08-003(a) septic tank (structure 08-59) discharged into the SWMU 08-009(a) drainline pipe at a point approximately 5 ft west of where the storm drain passes under Anchor Ridge Road. In 1995, the tank was pressure-washed and backfilled with sand. Currently, the storm drain and outfall receive stormwater only.

2.4.4.1 Previous Investigations for SWMU 08-009(a)

An RFI was conducted at SWMU 08-009(a) in 1997. Five samples were collected from one location within the site and submitted to an off-site contract analytical laboratory for the analyses of metals, HE, polychlorinated biphenyls (PCBs), and SVOCs. Samples were collected from depth intervals ranging from 0 to 4.5 ft bgs.

2.4.4.2 Analytical Results for SWMU 08-009(a)

The samples collected, analyses requested, and decision-level analytical data from the 1997 RFI are presented in Tables 2.4-1 to 2.4-3. The results of the analyses of samples collected during the 1997 RFI are as follows:

- Antimony, cadmium, cobalt, copper, lead, mercury, silver, and zinc were detected above BVs (Figure 2.4-2).
- HE and bis(2-ethylhexyl)phthalate were detected (Figure 2.4-3).

2.5 SWMU 08-004(c), Floor Drain and Sumps

SWMU 08-004(c) (Figure 2.5-1) is identified in the 1990 SWMU report (LANL 1990, 007511) as a floor drain in building 08-3 and two sumps behind building 08-3 at TA-08. Building 08-3 was originally constructed to house diesel-powered electrical generators that provided the electricity necessary to support operations at buildings 08-1 and 08-2 and the gun site. Building 08-3 was constructed with one floor drain, which exited the building through the north wall. The floor drain was placed beneath the flow-control device that managed the amount of diesel fuel being fed to the electrical generators within the building. The floor drain was intended to act as a preventative measure to receive any overflow that might occur should the fuel flow-control device have malfunctioned.

In 1948, building 08-3 was converted to house a hydraulic press and a control room to run the press. In 1957, building 08-3 underwent another conversion for use as a plastic scintillator facility. In 1983, building 08-3 underwent its last conversion to a laboratory.

The floor drain is not shown on the engineering drawings documenting the building's 1948, 1957, and 1983 conversions and was likely covered over during the 1948 conversion. The two sumps described as being located behind building 08-3 in the 1990 SWMU report (LANL 1990, 007511) were misidentified. None of the engineering drawings for building 08-3 indicate the presence of sumps. The engineering drawings do, however, show two manholes behind the building. The manholes provided access to two 2000-gal. underground storage tanks. The eastern tank [AOC 08-011(a)] stored diesel fuel for the electrical generators originally occupying building 08-3. The western tank [AOC 08-811(b)] stored fuel oil to operate the steam-heating boiler in building 08-1. Both tanks were removed in 1987. It is highly likely that the authors of the SWMU report (LANL 1990, 007511) mistook the manholes for sumps.

2.5.1 Previous Investigations for SWMU 08-004(c)

No previous investigations have been conducted at this site.

2.5.2 Analytical Results for SWMU 08-004(c)

No decision-level data are available for this site.

2.6 SWMU 08-004(d), Drains

SWMU 08-004(d) (Figure 2.6-1) consists of sink drains and the associated sewage line inside former building 08-24 (Isotope Building) at TA-08. The sewage line exited building 08-24 on the northeast side and ran east-northeast from the building. Building 08-24 was used to radiograph nuclear fuel elements from 1950 to 1971 and since then has had various other uses.

In 1954, SWMU 08-004(d) was contaminated with strontium-90 as a result of a spill. The spill occurred when a heavily shielded, 800-lb metal container (pig) used for x-ray examination was unloaded at the dock on the south side of the building. During unloading, the pig slipped and dropped, dumping a white powder, strontium-90 salt, on the truck and the dock. The powder was checked with a dosimeter and found highly radioactive.

The four people involved in the incident immediately decontaminated their hands by washing them in the sink in the center room of building 08-24. Following the spill, the building's interior was scrubbed with water and decontaminated. Contaminated dirt and asphalt outside the building were removed and disposed of in a radioactive waste disposal area. A radiation survey, conducted one month following the spill, detected contamination in concrete cracks on the loading dock and between dock sections, and the area was sealed with concrete to avoid spreading the contamination (LANL 1993, 020949, pp. 5-5−5-7). Building 08-24 was removed in 2006; however the building's slab and the drainlines beneath the slab remain in place.

2.6.1 Previous Investigations for SWMU 08-004(d)

An RFI was conducted at SWMU 08-004(d) in May 1994. One swipe sample was taken from the P-trap of a sink inside building 08-24 and screened for radioactivity. The P-trap had a circular port that allowed access to the interior of the drainpipe, where the swipe sample was taken by swabbing the inside of the drainpipe with a 2-in.-diameter standard filter media. A scale sample was taken at a manhole about 750 ft downgradient from building 08-24. At the bottom of the manhole is a concrete slab approximately 8 ft bgs

with an open, 2- to 3-in.-diameter sewer channel. The contents of the sewer channel consisted of a carbonate-like scale that was collected from the sewer channel at the bottom of the manhole by scraping off the scale with a stainless-steel scoop.

A field-screening test did not detect HE. One sludge sample was collected from a second clay pipe that enters the manhole about 3 ft above the floor of the hole. All samples were analyzed for radionuclides and no detectable gross-alpha or -beta radioactivity in the scale or swipe samples were reported; however, radioactivity was detected in the sludge sample. Strontium-90 was detected above FV in the sludge sample (LANL 1996, 054586, pp. 38−39).

2.6.2 Analytical Results for SWMU 08-004(d)

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

2.7 SWMU 08-005, Former Crystal Growth Incubator

SWMU 08-005 (Figure 2.7-1) is former crystal growth incubator that was located at TA-08 approximately 40 ft northwest of building 08-2. The incubator consisted of a 4-ft-long × 4-ft-wide × 4-ft-high metal box, with a lid that contained two windows. The interior of the incubator had a gasket and strap composed of a nonfriable asbestos-containing material. The incubator was used in the 1950s to grow crystals for photographic experiments conducted in building 08-1 (LANL 1993, 020949, p. 5-28; LANL 1996, 054328, p. 1). Chemicals used in the growth experiments were terphenyl, alpha naphthyl oxazole, styrene, methyl chloroform, and thallous iodide (DOE 1987, 008663). At an unknown date, the incubator (which contained some crystallized residue) was removed from building 08-1 and placed outdoors, where it remained inoperative for several years until its removal in 1994. When the incubator was removed, no staining was observed on the ground around the incubator (LANL 1996, 54328, p. 1), and the exterior of the incubator had rusted from several years of exposure to the elements.

2.7.1 Previous Investigations for SWMU 08-005

A voluntary corrective action (VCA) was conducted at SWMU 08-005 in September 1994 and July 1995. On September 20, 1994, approximately 1 ft^3 of solid residue was removed from the storage vessel, containerized, and disposed of by LANL's Waste Services Group. The asbestos-containing material, which included a gasket, strap, and cord, were also removed and disposed of. Subsequent analysis of the residue indicated it was mostly naphthalene, but anthracene and 2-methylnaphthalene were also present.

On September 30, 1994, the vessel was transported to the Laboratory's salvage yard where the vessel was inspected and field-screened for radioactivity and HE. No elevated readings were detected. In October 1994, the soil beneath the former location of the incubator was screened for radiation and organic vapors. No elevated readings were detected. On July 26, 1995, a surface (0–0.5 ft bgs) sample was collected at the former location of the vessel and submitted to an off-site contract analytical laboratory for analysis of SVOCs and inorganic chemicals (metals) (LANL 1996, 054328, pp. 1−2).

The results of the analyses of the sample collected during the 1995 VCA are as follows (LANL 1996, 054328, pp. 1−2):

- Barium, cadmium, chromium, lead, and selenium were detected above BVs.
- Bis(2-ethylhexyl)phthalate was detected.

2.7.2 Analytical Results for SWMU 08-005

The data collected during the 1995 VCA do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

2.8 SWMU 08-006(a), MDA Q

SWMU 08-006(a) (Figure 2.8-1) is MDA Q, located at TA-08 approximately 290 ft southwest of building 08-1. The MDA was the disposal area for the naval guns used at the gun site (SWMU 08-002) during the Manhattan Project. Other objects that were used at the gun site are also buried within the MDA, including inert projectiles (nonnuclear), expended casings, and prototypes (nonnuclear) for the Little Boy weapon. The MDA was active only during 1946, when the objects were originally placed within the MDA. The 1990 SWMU report did not provide a specific location for MDA Q, merely stating that it was south of building 08-1 and east of building 08-23 (LANL 1990, 007511). The location of the MDA was identified by two electromagnetic surveys and a ground-penetrating radar survey conducted in December, 1993.

2.8.1 Previous Investigations for SWMU 08-006(a)

An RFI was conducted at SWMU 08-006(a) in 1994. Ten samples were collected from five locations within the site and analyzed for a limited set of inorganic chemicals—beryllium, copper, and lead. Samples were collected from depth intervals ranging from 0 to 4 ft bgs.

The results of the analysis of samples collected in 1994 are as follows: beryllium, copper, and lead were detected above BVs.

2.8.2 Analytical Results for SWMU 08-006(a)

The data collected during the 1994 investigation do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

2.9 AOC 08-009(c), Drainline and Outfall

AOC 08-009(c) (Figure 2.9-1) consists of a drainline and outfall at TA-08 approximately 350 ft northeast of building 08-23 (the Betatron building). The drainline runs northeast from building 08-23 to the outfall and receives stormwater from the Betatron building (08-23). The stormwater is fed to the drainline via a French drain that surrounds the building. Before plugging, the floor drains in the basement of building 08-23 also discharged into the AOC 08-009(c) drainline. The Betatron building was built in 1950 and housed a 20-million-volt betatron, electron accelerator that was used to radiograph large items such as nuclear fuel elements, waste containers, and weapon assemblies.

In 1990, approximately one pint of oil containing an unknown concentration of PCBs is reported to have spilled from transformers placed in the building's basement. The spill was cleaned. Following the spill, all transformers were replaced. Because the basement floor drains could not be plugged because of the possibility of flooding the transformers, a trough and absorbent boom were installed to intercept any future leaks. The floor drains were subsequently plugged in 1996.

2.9.1 Previous Investigations for AOC 08-009(c)

An RFI was conducted at AOC 08-009(c) in 1994. Seven surface (0–0.5 ft bgs) samples were collected from seven locations within the site and submitted to an off-site contract analytical laboratory for the analysis of PCBs.

2.9.2 Analytical Results for AOC 08-009(c)

The samples collected, analyses requested, and decision-level analytical data from the 1994 RFI are presented in Tables 2.9-1 and 2.9-2. The results of the analysis of samples collected during the 1994 RFI are as follows: Aroclor-1260 was detected (Figure 2.9-2).

2.10 SWMU 08-009(d), Drains

SWMU 08-009(d) (Figure 2.10-1) consists of the drains located in the photo-processing and x-ray rooms of building 08-22 (x-ray building) at TA-08. Building 08-22 was built in 1950 and housed x-ray machines used to radiograph various items. The SWMU 08-009(d) drains were dedicated to receive photo-processing and photo-development solutions that contained silver salts, chromium, pentachlorophenol, and other chemicals used during the radiography process. Before being plugged, the drains discharged effluent to a formerly National Pollutant Discharge Elimination System (NPDES)-permitted outfall (EPA 06A074), located approximately 300 ft northeast of building 08-22. The outfall drained into Starmer Gulch, a tributary of Pajarito Canyon. The drains were plugged between 1995 and 1997. The outfall was removed from the NPDES permit effective September 19, 1997.

Based on the NPDES-permit outfall number listed in the 1990 SWMU report (LANL 1990, 007511), the RFI investigating team concluded that the SWMU report incorrectly attributed the source of the SWMU 08-009(d) drains to effluent from fluorescent penetrant experiments, rather than to its correct source, which was photo-processing effluent. To account for the drain that received the fluorescent penetrant effluent, the approved RFI work plan proposed designating a new identifier, AOC 08-009(f) (LANL 1993, 020949, p. 5-9).

2.10.1 Previous Investigations for SWMU 08-009(d)

An RFI was conducted at SWMU 08-009(d) in 1994. Four samples were collected at two locations—3 ft and 6 ft downgradient of the outfall. Samples were collected from depth intervals ranging from 0 to 1.4 ft bgs. Samples were field-screened for radioactivity, organic vapors, and HE. Field-screening results showed elevated radioactivity levels detected at the location closest to the outfall, and PID measurements were less than 1 ppm; HE were not detected in the samples. The samples were submitted to an off-site contract analytical laboratory for analysis of inorganic chemicals and organic chemicals. No radiochemistry analyses were conducted at SWMU 08-009(d) because of field-screening results (LANL 1996, 054586, pp. 56–57).

The results of the analyses of samples collected during the 1994 RFI are as follows (LANL 1996, 054586, p. 62):

- Antimony, chromium, mercury, and silver were detected above BVs.
- Bis(2-ethylhexyl)phthalate and VOCs were detected.

2.10.2 Analytical Results for SWMU 08-009(d)

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

2.11 SWMU 08-009(e), Outfall

SWMU 08-009(e) (Figure 2.11-1) is the outfall at TA-08 associated with the photo-developing processes that occurred in building 08-21 (a laboratory and office building). The outfall, which is located approximately 200 ft east of building 08-21, is a former NPDES-permitted outfall (06A075) that drained into Starmer Gulch, a tributary of Pajarito Canyon. Building 08-21 was built in 1950 as an administration and laboratory building. The south wing originally contained 13 darkrooms, a photo-processing and photo-development laboratory, and a metallography laboratory. Before 1991, the waste generated in the photo laboratory was sent through a silver recovery resin bed for the removal of silver. After the silver was removed, the waste water was discharged to the NPDES-permitted outfall.

At the metallography laboratory, plutonium parts coated with nickel were x-rayed and fuel elements that consisted of graphite impregnated with uranium-235 were polished. In 1982 or 1983, the metallography laboratory was decontaminated and the floor was removed and replaced. In about 1998, the south wing was converted to office space, and only the photo laboratory and darkrooms remain in place. The outfall was removed from the Laboratory's NPDES permit effective January 14, 1998, and currently receives stormwater only. In 2003, Anchor Ranch Road was rerouted from TA-08 to TA-22. As part of this road reconstruction activity, the storm culvert beneath Anchor Ranch Road [and associated with the SWMU 08-009(e) outfall] was removed and the drainage was completely recontoured.

2.11.1 Previous Investigations for SWMU 08-009(e)

An RFI was conducted at SWMU 08-009(e) in May 1994. Four samples were taken from two locations—4 ft and 8 ft east and downstream from the end of the Anchor Ranch Road culvert. Samples were collected from depth intervals ranging from 0 to 3 ft bgs. Samples were field-screened for radioactivity, organic vapors, and HE. Field-screening results showed no elevated radioactivity levels, and PID measurements were less than 1 ppm; HE were not detected in the samples. The samples were submitted to an off-site contract analytical laboratory for analysis of inorganic chemicals and organic chemicals. No radiochemistry analyses were conducted at SWMU 08-009(e) because of field-screening results (LANL 1996, 054586, p. 64).

The results of the analyses of samples collected during the 1994 RFI are as follows (LANL 1996, 054586, p. 62):

- Antimony, mercury, silver, and zinc were detected above BVs.
- Organic chemicals were not detected.

2.11.2 Analytical Results for SWMU 08-009(e)

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

2.12 AOC 08-009(f), Outfall

AOC 08-009(f) (Figure 2.12-1) is the outfall at TA-08 located approximately 40 ft southeast of building 08-22 (the x-ray building). Fluorescent penetrants (mixtures of dyes and surfactants) were used in building 08-22 to detect cracks in parts being prepared for installation into a weapons assembly. Historically, fluorescent penetrants, developers, and emulsifiers were discharged to the outfall through drains located within building 08-22. The valves to the sinks that discharged to the drains were

disconnected in 1992, and the drains were rerouted to the building 08-22 sanitary sewer system. After 1992, secondary containers were used to collect the chemicals before disposal (LANL 1993, 020949, pp. 5-10–5-11).

2.12.1 Previous Investigations for AOC 08-009(f)

An RFI was conducted at AOC 08-009(f) in 1994. Eight samples were collected from two locations within the site and analyzed for inorganic chemicals and organic chemicals. Samples were collected from depth intervals ranging from 0 to 5 ft bgs.

The results of the analyses of samples collected in 1994 RFI are as follows:

- Nitrate was detected.
- Bis(2-ethylhexyl)phthalate, PAHs, and VOCs were detected.

2.12.2 Analytical Results for AOC 08-009(f)

The data collected during the 1994 investigation do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

2.13 AOC C-08-014, Building

AOC C-08-014 (Figure 2.13-1) is building 08-21 at TA-08. Building 08-21 was built in 1950 as a laboratory building. The south wing originally contained 13 darkrooms, a photo-processing and photo-development laboratory, and a metallography laboratory. In about 1998, the south wing was converted to office space, and only the photo laboratory and darkrooms remain in place. The building remains in use and currently houses laboratories and administrative offices.

2.13.1 Previous Investigations for AOC C-08-014

No previous investigations have been conducted at this site.

2.13.2 Analytical Results for AOC C-08-014

No decision-level data are available for this site.

3.0 SITES ASSOCIATED WITH TA-09

Technical Area 09 is located on a broad mesa bounded on the north by Pajarito Canyon and on the south by Cañon de Valle. The mesa drains to Pajarito Canyon via three tributaries. Technical Area 09 encompasses three Manhattan Project sites known as Old Anchor East, the Far Detonation Point (Far Point), and Nu Site, as well as New Anchor East and MDA M.

Old Anchor East (now TA-09) was established in 1943 to house explosives production, development, and testing, and x-ray work. The main explosives manufacturing and x-ray facilities were next to Anchor Ridge Road, with the Far Point and Nu Site test-firing facilities located several hundred yards to the east. Originally, eight major buildings containing laboratories, offices, machine shops, and storage areas occupied the explosives manufacturing and x-ray portion of the facility along with five magazines. The Far Point firing site was used to conduct explosives detonation experiments and consisted of four underground steel-lined firing chambers (structures 09-4, 09-5, 09-15, and 09-58) and an open firing area (structure 09-57) composed of a concrete pad and steel-faced barricade. Use of Far Point ceased in the late 1940s. Beginning in 1950, the activities that had been conducted at the Old Anchor East site were moved to New Anchor East. In 1957, all of the Old Anchor East facilities (including Far Point) were decommissioned. From 1959 to 1965, buildings were intentionally burned; associated drains, sumps, pipes, and debris were removed; and the entire site was graded. Since 1965, the surface has been disturbed numerous times for the installation of various cable, electrical, and communication lines.

Nu Site was established south of Far Point in 1945 (DOE 1987, 008664) and designated as TA-23. Nu Site consisted of one firing point (west of building 09-76) and four small structures (09-76, 09-77, 09-78, and 09-79). The site was used for explosives testing and operated from 1945 to 1950 Explosives tests of up to 135 lb of HE were conducted regularly. Nu Site was decommissioned in 1949−50 in preparation for the construction of New Anchor East (TA-09). For administrative purposes as part of the decommissioning process, Nu site was incorporated into TA-09 and the existing Nu Site structures were given TA-09 structure numbers. All Nu site structures were removed between 1950 and 1952.

Construction of New Anchor East (modern TA-09) began in 1950 immediately following the completion of construction activities at TA-08. Approximately 30 new structures were erected, together with associated settling tanks, septic tanks, drainlines, manholes, and other support facilities. The newly erected structures included laboratory/office buildings, processing laboratories, a pressing facility, a machining building, a carpenter shop, compressed gas- and solvent-storage buildings, and magazines for HE storage. New Anchor East supported the same activities as had been formerly conducted at Old Anchor East, including explosives development, production, compatibilities studies, and testing.

Material Disposal Area M was created during the demolition of the Old Anchor Ranch East and West sites and the construction of the modern TA-08 and TA-09 facilities (1949−1965). MDA M was used as a surface dumping area for construction and demolition debris.

As a result of the 1989 Laboratory redefinition of technical area boundaries, eight sites associated with TA-09 are within the physical boundaries of TA-08. The eight sites are SWMUs 09-001(d), 09-003(d), 09-003(g), 09-003(h), 09-005(a), 09-005(d), 09-006, and 09-008(b).

3.1 Consolidated Unit 09-001(a)-99

Consolidated Unit 09-001(a)-99 (Figure 3.1-1) consists of a former firing site and firing pit [SWMU 09-001(a)], and a former firing site [SWMU 09-001(b)]. These sites are components of the Far Point firing site, which was located about 300 ft north of buildings 09-36 and 09-40.

3.1.1 SWMU 09-001(a), Former Firing Site and Control Building

SWMU 09-001(a) (Figure 3.1-1) is a former firing site control building (structure 09-4) that was located at the TA-09 Far Point firing site, approximately 260 ft north of existing buildings 09-36 and 09-40. The 1990 SWMU report (LANL 1990, 007511) identifies structure 09-4 as a firing site and pit (located northwest of Far Point). This Identification was likely based on structure location plan R-124, which is included in the SWMU report and which identifies structure 09-4 as a firing chamber. The SWMU report

presumed that a firing chamber is always used to test explosives. However, a site worker describes the building as a personnel shelter (Jones 1993, 014993), i.e., a building used by firing site personnel to remotely fire and observe explosives tests. Use as a control/observation building is verified by an engineering drawing of building 09-4 under its former designation of AE-4 (LASL 1943, 110445). The engineering drawing shows structure 09-4 as an 8-ft-wide x 10-ft-long x 8-ft-high building constructed of 12-in.-thick reinforced concrete walls, with a door that was steel plated on the outside, and covered with earth on three sides. A 2.5 ft wide x 8 ft long wood bench stretched along the entire length of one interior wall with electrical outlets for instrumentation placed along the same wall. A wooden bench would not have been placed inside a building intended for test firing explosives. The presence of the steel plate on the door's exterior rather than its interior signifies that the door was intended to protect the interior of the building from exterior forces. Structure 09-4 was built in 1944, decommissioned in 1959, and removed in 1965 (LANL 1993, 020949, pp. 5-65−5-66).

The pit associated with structure 09-4 in the SWMU report and described as northwest of Far Point near the edge of the mesa is likely the SWMU 09-001(c) recovery pit. Although the recovery pit is to the northeast of Far Point, the recovery pit is near the edge of the mesa. In addition, the Comprehensive Environmental Assessment and Response Program (CEARP) report (on which the SWMU report is based) identifies only one pit [09-001(c)] at Far Point (DOE 1987, 008664).

The Far Point firing site consisted of two test shot areas: the SWMU 09-001(c) recovery pit and a firing point (structure 09-57) located west of and between the two control buildings (structures 09-4 and 09-5). The structure 09-57 firing point consisted of a 7-ft-wide x 8-ft-long x 12-in.-thick concrete pad with an attached 8-ft-wide by 10-ft-high steel-plated barricade made of 12 x 12-in. timbers imbedded in concrete. Structure 09-57 was decommissioned in 1957 and destroyed by intentional burning in 1960. The concrete pad was removed in 1965. Although the 1990 SWMU report (LANL 1990, 007511) describes SWMU 09-001(a) as the "Far Point firing site," the SWMU report associates only structure 09-4 (one of the control buildings) with the firing site, omitting structure 09-57 altogether. Structure 09-57 will be investigated as part of SWMU 09-001(a).

3.1.1.1 Previous Investigations for SWMU 09-001(a)

An RFI was conducted at SWMU 09-001(a) in April 1994. Ten surface (0–0.5 ft bgs) soil samples were collected from 10 locations within a grid adjacent to the firing site. Samples were field-screened for radioactivity, organic vapors, and HE. Field-screening results showed no elevated radioactivity levels, and PID measurements were less than 1 ppm; HE were not detected in the samples. All samples were submitted to an off-site contract analytical laboratory for analysis of inorganic chemicals, organic chemicals, and HE (LANL 1996, 054586, p. 71).

The results of the analyses of samples collected during the 1994 RFI are as follows (LANL 1996, 054586, p. 75):

- Antimony, barium, calcium, copper, lead, and zinc were detected above BVs. Nitrate was detected.
- Organic chemicals were not detected.

3.1.1.2 Analytical Results for SWMU 09-001(a)

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

3.1.2 SWMU 09-001(b), Former Firing Site Control Building

SWMU 09-001(b) (Figure 3.1-1) is a former firing site control building (structure 09-5) that was located at the TA-09 Far Point firing site, approximately 300 ft north of existing buildings 09-36 and 09-40. The 1990 SWMU report (LANL 1990, 007511) identifies structure 09-5 as a firing site. This identification was likely based on structure location plan R-124, which is included in the SWMU report and which identifies structure 09-5 as a firing chamber. The SWMU report presumed that a firing chamber is always used to test explosives. However, a site worker describes the building as a personnel shelter (Jones 1993, 014993), i.e., a building used by firing site personnel to remotely fire and observe explosives tests. Use as a control/observation building is verified by an engineering drawing of building 09-5 under its former designation of AE-5 (LASL 1943, 110540). The engineering drawing shows structure 09-5 as a 12 ft long x 10 ft wide x 8 ft high building constructed of 14 in.-thick reinforced concrete walls, with a door that was steel plated on the outside, and covered with earth on three sides. A 2.5-ft-wide x 8-ft.-long wood bench stretched along the length of one interior wall. A wooden bench would not have been placed inside a building intended for test firing explosives. The presence of the steel plate on the door's exterior rather than its interior signifies that the door was intended to protect the interior of the building from exterior forces. Structure 09-5 was built in 1947, decommissioned in 1959, and removed in 1965 (LANL 1993, 020949, pp. 5-67−5-68).

3.1.2.1 Previous Investigations for SWMU 09-001(b)

An RFI was conducted at SWMU 09-001(b) in April 1994. Ten surface (0–0.5 ft bgs) soil samples were collected from 10 locations within a grid adjacent to the firing site. Samples were field-screened for radioactivity, organic vapors, and HE. Field-screening results showed no elevated radioactivity levels, and PID measurements were less than 1 ppm; HE were not detected in the samples. All samples were submitted to an off-site contract analytical laboratory for analysis of inorganic chemicals, organic chemicals, and HE (LANL 1996, 054586, p. 71).

The results of the analyses of samples collected during the 1994 RFI are as follows (LANL 1996, 054586, p. 75):

- Antimony, barium, calcium, copper, lead, and zinc were detected above BVs. Nitrate was detected.
- Organic chemicals were not detected.

3.1.2.2 Analytical Results for SWMU 09-001(b)

The data collected during the 1994 RFI does not meet current data validation standards and is not decision-level data. The screening-level data are presented in Appendix B.

3.2 SWMU 09-001(c), Former Recovery Pit

SWMU 09-001(c) (Figure 3.2-1) is a former recovery pit (structure 09-15) that was located at the northernmost end of the TA-09 Far Point firing site. The recovery pit was 12 ft square × 8 ft deep, with timbered sides lined with a 0.75-in.-thick steel plate, and had a metal cover. The pit was designed to recover metal from misfired shots. The pit was installed in 1943, modified in 1951, decommissioned in 1959, flash burned to remove HE residue in 1960, and removed in 1965 (LANL 1993, 020949, p. 5-68).

3.2.1 Previous Investigations for SWMU 09-001(c)

An RFI was conducted at SWMU 09-001(c) in 1995. Three samples were collected from three locations within the site and submitted to an off-site contract analytical laboratory for analyses of metals, nitrate, and HE. Samples were collected from depth intervals ranging from 8.5 to 10 ft bgs.

3.2.2 Analytical Results for SWMU 09-001(c)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.2-1 and 3.2-2. The results of the analyses of samples collected during the 1995 RFI are as follows:

- Aluminum, antimony, arsenic, barium, calcium, chromium, cobalt, copper, lead, nickel, selenium, and vanadium were detected above BVs. Nitrate was detected (Figure 3.2-2).
- HE were not detected.

3.3 SWMU 09-001(d), Former Firing Chambers

SWMU 09-001(d) (Figure 3.3-1) consists of two former firing chambers that were located at former building 09-1, an x-ray laboratory used to study implosions of small charges. One firing chamber was located on the south exterior wall of the building. This firing chamber was approximately 25 ft square and constructed of steel-faced concrete. The firing chamber was roofed and contained three firing areas, two of which were open to the south. The chamber tested positive for radioactive contamination (U^{238}) before its removal in 1965 (LANL 1993, 020949, p. 5-57). The second firing chamber was located on the building's west exterior wall. The second firing chamber was approximately 10.5 ft wide x 11 ft long, constructed of steel-plated timbers, and enclosed on all four sides and on top. Both firing chambers were removed when building 09-1 was removed in 1965.

Although associated with TA-09, SWMU 09-001(d) is within the physical boundaries of TA-08.

3.3.1 Previous Investigations for SWMU 09-001(d)

An RFI was conducted at SWMU 09-001(d) in April 1994. SWMU 09-001(d) was sampled as part of a set of sites referred to as the Anchor Ranch East Site set. SWMUs 09-003(g), 09-003(h), and 09-003(i) were also part of this set. The set was grouped because of past activities (HE research, development, and testing) and demolition and decommissioning of their associated structures (buildings 09-1, 09-2, 09-3, and 09-13). Thirteen surface (0–0.5 ft bgs) samples were taken from 13 locations in the area surrounding former building 09-1. Samples were field-screened for radioactivity, organic vapors, and HE. Field-screening results showed no elevated radioactivity levels, and PID measurements were less than 1 ppm; HE were not detected in the samples. All samples were submitted to an off-site analytical laboratory for analyses of inorganic chemicals, organic chemicals, and HE (LANL 1996, 054586, p. 78).

The results of the analyses of samples collected during the 1994 RFI are as follows (LANL 1996, 054586, p. 81):

- Antimony, arsenic, cadmium, calcium, lead, mercury, silver, and zinc were detected above BVs. Nitrate was detected.
- Organic chemicals were not detected.

3.3.2 Analytical Results for SWMU 09-001(d)

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

3.4 SWMU 09-002, Burn Pit

SWMU 09-002 (Figure 3.4-1) is a decommissioned burn pit located at TA-09 approximately 230 ft southeast of the SWMU 9-001(c) recovery pit. The burn pit consists of an open surface depression, about 10 ft wide × 13 ft long × 3 ft deep (LANL 1998, 059686). The sides of the pit are lined with rocks blackened from burning. The burn pit was used from 1945 until 1956 to dispose of film, photographs, and papers associated with studying the experimental detonations conducted at the former Far Point firing site.

3.4.1 Previous Investigations for SWMU 09-002

An RFI was conducted at SWMU 09-002 in May 1994. Two surface (0–0.5 ft bgs) soil samples were collected from two locations in the bottom of the burn pit. No ash or burned debris were observed in the soil sampling locations. Samples were field-screened for organic vapors and HE. PID measurements were less than 1 ppm; HE were not detected in the samples. All samples were submitted to an off-site analytical laboratory for analyses of inorganic chemicals (metals) (LANL 1998, 059686, p. 10).

The results of the analyses of the samples collected during the 1994 RFI (LANL 1998, 059686, p. 11) did not show detection of inorganic chemicals.

3.4.2 Analytical Results for SWMU 09-002

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

3.5 Consolidated Unit 09-003(a)-99

Consolidated Unit 09-003(a)-99 (Figure 3.5-1) consists of two former sumps [SWMU 09-003(a) and SWMU 09-003(b)] and a former basket pit [SWMU 09-003(e)] at TA-09. The SWMUs in this consolidated unit served building 09-14, an HE processing and development laboratory that was decommissioned in 1959 and removed in 1965. Each structure was designed to remove contaminants by settling them out from that building's processing and development wastewater.

3.5.1 SWMU 09-003(a), Former Sump

SWMU 09-003(a) (Figure 3.5-1) is a former sump (structure 09-83) that was located at TA-09, approximately 12 ft north of former building 09-14. The sump, made of reinforced concrete and measuring approximately 4 ft wide × 4 ft long x 4 ft deep, was installed in 1943 and served as an acid waste settling tank for building 09-14 (a former HE processing and development laboratory) (LANL 1993, 014995). The sump was decommissioned in 1962 and removed in 1965. At the time of removal, contaminant encrustation was present in the sump's interior (LANL 1993, 020949, p. 6-74).

3.5.1.1 Previous Investigations for SWMU 09-003(a)

An RFI was conducted at SWMU 09-003(a) in 1995. Six samples were collected from six locations within the site and submitted to an off-site contract analytical laboratory for analyses of metals, total cyanide,

HE, and VOCs. One of the six samples was also analyzed for tritium. Samples were collected from depth intervals ranging from 6 to 9 ft bgs. Samples were field-screened for HE and radioactivity. Field-screening results showed no elevated radioactivity levels; HE were not detected in the samples.

3.5.1.2 Analytical Results for SWMU 09-003(a)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.5-1 to 3.5-3. The results of the analyses of samples collected during the 1995 investigation are as follows:

- Antimony, barium, and calcium were detected above BVs (Figure 3.5-2).
- RDX (research department explosive or hexahydro-1,3,5-trinitro-1,3,5-triazine) and toluene were detected (Figure 3.5-3).
- Tritium was not detected.

3.5.2 SWMU 09-003(b), Former Sump

SWMU 09-003(b) (Figure 3.5-1) is a former sump (structure 09-84) that was located at TA-09, north of former building 09-14. The sump, made of reinforced concrete and measuring approximately 4 ft wide × 5 ft long x 3 ft deep, was installed in 1943 and functioned as an acid waste settling tank (LANL 1993, 014995). There is a discrepancy in archival documentation as to whether this sump served building 09-12 (a personnel shelter) or 09-14 (a former HE processing and development laboratory). However, since the sump was in very close proximity to former building 09-14, it likely served that building. The sump was decommissioned in 1962 and, removed in 1965. At the time of removal, contaminant encrustation was present in the sump's interior (LANL 1993, 020949, p. 6-74).

3.5.2.1 Previous Investigations for SWMU 09-003(b)

An RFI was conducted at SWMU 09-003(b) in 1995. Six samples were collected from six locations within the site and submitted to an off-site contract analytical laboratory for analyses of metals, total cyanide, HE, and VOCs. Samples were collected from depth intervals ranging from 2.25 to 8 ft bgs. Samples were field-screened for HE and radioactivity. Field-screening results showed no elevated radioactivity levels; HE were not detected in the samples.

3.5.2.2 Analytical Results for SWMU 09-003(b)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.5-4 to 3.5-6. The results of the analyses of samples collected during the 1995 RFI are as follows:

- Aluminum, antimony, arsenic, barium, calcium, copper, lead, mercury, and selenium were detected above BVs (Figure 3.5-2).
- RDX, chlorodibromethane, and toluene were detected (Figure 3.5-3).

3.5.3 SWMU 09-003(e), Former Basket Washing Pit

SWMU 09-003(e) (Figure 3.5-1) is a former basket washing pit (structure 09-62) (LANL 1990, 07511) that was located at TA-09, approximately 5 ft north of former building 09-14. The pit, made of reinforced concrete and measuring approximately 4 ft wide × 4 ft long x 5 ft deep, was installed in 1950 and served

basket washing operations conducted at building 09-14 (a former HE processing and development laboratory) (LANL 1993, 014995). The basket washing pit was decommissioned in 1960 and removed in 1965. At the time of removal, contaminant encrustation was present in the pit's interior (LANL 1993, 020949, p. 6-74).

3.5.3.1 Previous Investigations for SWMU 09-003(e)

An RFI was conducted at SWMU 09-003(e) in 1995. Five samples were collected from five locations within the site and submitted to an off-site contract analytical laboratory for analyses of metals, total cyanide, HE, and VOCs. Samples were collected from depth intervals ranging from 6 to 7.5 ft bgs. Samples were field-screened for HE and radioactivity. Field-screening results showed no elevated radioactivity levels, and HE were not detected in the samples.

3.5.3.2 Analytical Results for SWMU 09-003(e)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.5-7 to 3.5-9. The results of the analyses of samples collected during the 1995 RFI are as follows:

- Antimony was detected above BV (Figure 3.5-2).
- Styrene and toluene were detected (Figure 3.5-3).
- HE were not detected.

3.6 SWMU 09-003(d), Former Sump

SWMU 09-003(d) (Figure 3.6-1) is a former sump (structure 09-88) that was located approximately 10 ft east of former building 09-1. The sump, made of reinforced concrete and measuring approximately 4 ft wide x 7 ft long x 7 ft deep, was installed in 1943. Archival documentation does not provide any information as to which building this sump served. However, since the sump was in very close proximity to former building 09-1, it likely served that building (an x-ray laboratory used to study implosions of small charges). The sump was decommissioned in 1959 and removed in 1965.

Although associated with TA-09, SWMU 09-003(d) is located within the physical boundary of TA-08.

3.6.1 Previous Investigations for SWMU 09-003(d)

An RFI was conducted at SWMU 09-003(d) in 1995. Six samples were collected from five locations within the site and submitted to an off-site contract analytical laboratory for analysis of metals, total cyanide, HE, and VOCs. Samples were collected from depth intervals ranging from 3.5 to 8.5 ft bgs.

3.6.2 Analytical Results for SWMU 09-003(d)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.6-1 to 3.6-3. The results of the analyses of samples collected during the 1995 RFI are as follows:

- Aluminum, antimony, arsenic, barium, calcium, cobalt, copper, iron, lead, magnesium, and zinc were detected above BVs. Nitrate was detected (Figure 3.6-2).

- HMX (high-melting explosive or 1,3,5,7-tetranitro-1,3,5,7-tetrazocine), RDX, and six VOCs were detected (Figure 3.6-3).

3.7 SWMU 09-003(g), Former Sump and Pipes

SWMU 09-003(g) (Figure 3.7-1) is identified in the 1990 SWMU report (LANL 1990, 07511) as the sumps and associated pipes in former building 09-2 (a photo darkroom and boiler plant). Engineering drawings show that the "sumps" in building 09-2 were actually condensate pits that received boiler condensate. One pit (approximately 3 ft wide x 7 ft long) was installed in 1943 when the building was constructed, and a second, larger pit (5.5 ft wide x 8 ft long) was installed in 1948 (LASL 1948, 110444). Building 09-2 was decommissioned in 1959 and intentionally destroyed by burning in 1960. The condensate pits and pipes associated with former building 09-2 were removed in 1965.

Although associated with TA-09, SWMU 09-003(g) is located within the physical boundary of TA-08.

3.7.1 Previous Investigations for SWMU 09-003(g)

An RFI was conducted at SWMU 09-003(g) in April 1994. SWMU 09-003(g) was sampled as part of a set of sites referred to as the Anchor Ranch East Site set. SWMUs 09-001(d), 09-003(h), and 09-003(i) were also part of this set. The set was grouped because of past activities (HE research, development, and testing) and demolition and decommissioning of their associated structures (buildings 09-1, 09-2, 09-3, and 09-13). Thirteen surface (0–0.5 ft bgs) samples were taken from 13 locations in the area surrounding former building 09-1. Samples were field-screened for radioactivity, organic vapors, and HE. Field-screening results showed no elevated radioactivity levels, and PID measurements were less than 1 ppm; HE were not detected in the samples. All samples were submitted to an off-site analytical laboratory for analyses of inorganic chemicals, organic chemicals, and HE (LANL 1996, 054586, p. 78).

The results of the analyses of samples collected during the 1994 RFI are as follows (LANL 1996, 054586, p. 81):

- Antimony, arsenic, cadmium, calcium, lead, mercury, silver, and zinc were detected above BVs. Nitrate was detected.
- Organic chemicals were not detected.

3.7.2 Analytical Results for SWMU 09-003(g)

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

3.8 SWMU 09-003(h), Former Sump and Pipes

SWMU 09-003(h) (Figure 3.8-1) is identified in the 1990 SWMU report (LANL 1990, 07511) as the sump and associated pipes in former building 09-3 (an HE casting facility). Engineering drawings show the "sump" in building 09-3 consisted of a single catch basin that functioned as an HE settling tank. Built in 1943, former building 09-3 had two sections: one was 17 ft wide × 30 ft long × 8 ft high, and the other 12 ft square × 9 ft high. The sections were joined by a wood-framed corridor. The larger section had three reinforced-concrete walls and one wood-framed wall. The building was surrounded on three sides and the top by an earthen berm. The catch basin received wastewater from drain troughs in both sections of the building. The building housed an HE casting facility and contained a hydraulic press. A control room for remote-control mixing was added in 1949. The RFI work plan states that the building was also used to

store radioactively contaminated equipment. Building 09-3 was decommissioned in 1959 and removed in 1965, including the catch basin and drain troughs.

Although associated with TA-09, SWMU 09-003(h) is located within the physical boundary of TA-08.

3.8.1 Previous Investigations for SWMU 09-003(h)

An RFI was conducted at SWMU 09-003(h) in April 1994. SWMU 09-003(h) was sampled as part of a set of sites referred to as the Anchor Ranch East Site set. SWMUs 09-001(d), 09-003(g), and 09-003(i) were also part of this set. The set was grouped because of past activities (HE research, development, and testing) and demolition and decommissioning of their associated structures (buildings 09-1, 09-2, 09-3, and 09-13). Thirteen surface (0–0.5 ft bgs) samples were taken from 13 locations in the area surrounding former building 09-3. Samples were field-screened for radioactivity, organic vapors, and HE. Field-screening results showed no elevated radioactivity levels, and PID measurements were less than 1 ppm; HE were not detected in the samples. All samples were submitted to an off-site analytical laboratory for analyses of inorganic chemicals, organic chemicals, and HE (LANL 1996, 054586, p. 78).

The results of the analyses of samples collected during the 1994 RFI are as follows (LANL 1996, 054586, p. 81):

- Antimony, arsenic, cadmium, calcium, lead, mercury, silver, and zinc were detected above BVs.
- Organic chemicals were not detected.

3.8.2 Analytical Results for SWMU 09-003(h)

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

3.9 SWMU 09-003(i), Former Sump and Pipes

SWMU 09-003(i) (Figure 3.9-1) consists of the former sump and pipes that served former building 09-13 (a machine shop and charge preparation building) at TA-09. Built in 1945, building 09-13 was a wood-framed structure, 17 ft wide × 20 ft long × 9 ft high. Building 09-13 was decommissioned in 1959 and removed in 1965. The sump and pipes associated with building 09-13 were removed in 1965 (LANL 1993, 020949, p. 5-60).

3.9.1 Previous Investigations for SWMU 09-003(i)

An RFI was conducted at SWMU 09-003(i) in April 1994. SWMU 09-003(i) was sampled as part of a set of sites referred to as the Anchor Ranch East Site set. SWMUs 09-001(d), 09-003(g), and 09-003(h) were also part of this set. The set was grouped because of past activities (HE research, development, and testing) and demolition and decommissioning of their associated structures (buildings 09-1, 09-2, 09-3, and 09-13). Thirteen surface (0–0.5 ft bgs) samples were taken from 13 locations in the area surrounding former building 09-13. Samples were field-screened for radioactivity, organic vapors, and HE. Field-screening results showed no elevated radioactivity levels, and PID measurements were less than 1 ppm; HE were not detected in the samples. All samples were submitted to an off-site analytical laboratory for analyses of inorganic chemicals, organic chemicals, and HE (LANL 1996, 054586, p. 78).

The results of the analyses of samples collected during the 1994 RFI are as follows (LANL 1996, 054586, p. 81):

- Antimony, arsenic, cadmium, calcium, lead, mercury, silver, and zinc were detected above BVs.
- No organic chemicals were detected.

3.9.2 Analytical Results for SWMU 09-003(i)

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

3.10 Consolidated Unit 09-004(a)-99

Consolidated Unit 09-004(a)-99 (Plate 2) consists of SWMUs 09-004(a-f) and (h-n). All of the SWMUs in this consolidated unit are sumps associated with laboratory buildings located at TA-09 in a large area east of building 09-21. All of the sumps within this consolidated unit discharged effluent to one of two former NPDES-permitted outfalls. Eight of the sumps [SWMUs 09-004(c), 09-004(d), 09-004(e), 09-004(f), 09-004(j), 09-004(k), 09-004(m), and 09-004(n)] discharged to former NPDES-permitted outfall EPA 05A067. Five of the sumps [SWMUs 09-004(a), 09-004(b), 09-004(h), 09-004(i), and 09-004(l)] discharged to EPA 05A066.

3.10.1 SWMU 09-004(a), Sump

SWMU 09-004(a) (Plate 2) is the southernmost sump (structure 09-184) located on the southeast side of building 09-21 (a laboratory and office building) at TA-09. The decommissioned sump, installed between 1950 and 1952, is made of reinforced concrete and formerly received industrial waste from a laboratory on the south side of building 09-21. Activities in the building involved laboratory-scale HE synthesis and testing. The sump collected settling HE particles that were not filtered out by the building's waste system and discharged effluent to a former NPDES-permitted outfall (EPA 05A066). Periodically, the sump was inspected, debris was removed using specially equipped trucks, and the sump was cleaned (LANL 1993, 020949, p. 5-36). The aluminum tank lining was replaced in 1991 because it was not chemically resistant (LANL 1993, 020949, p. 5-38). In September 2001, the sump was pressure-washed, filled with gravel, and capped with concrete (IT Corporation 2001, 073732).

3.10.1.1 Previous Investigations for SWMU 09-004(a)

An RFI was conducted at SWMU 09-004(a) in 1999. Two samples were collected from two locations within the site and submitted to an off-site contract analytical laboratory for analyses of HE and VOCs. Samples were collected from depth intervals ranging from 7 to 9.5 ft bgs.

3.10.1.2 Analytical Results for SWMU 09-004(a)

The samples collected and analyses requested from the 1999 RFI are presented in Table 3.10-1. The results of the analyses of samples collected during the 1999 RFI are as follows:

- HE were not detected.
- VOCs were not detected.

3.10.2 SWMU 09-004(b), Sump

SWMU 09-004(b) (Plate 2) is the northernmost sump (structure 09-185) located on the southeast side of building 09-21 (a laboratory and office building) at TA-09. The decommissioned sump, installed between 1950 and 1952, is made of reinforced concrete and formerly received industrial waste from a laboratory on the north side of building 09-21. Activities in the building involved laboratory-scale HE synthesis and testing. The sump collected settling HE particles that were not filtered out by the building's waste system and discharged effluent to a former NPDES-permitted outfall (EPA 05A066). Periodically, the sump was inspected, debris was removed using specially equipped trucks, and the sump was cleaned (LANL 1993, 020949, p. 5-36). The aluminum tank lining was replaced in 1991 because it was not chemically resistant (LANL 1993, 020949, p. 5-38). In September 2001, the sump was pressure-washed, filled with gravel, and capped with concrete (IT Corporation 2001, 073732).

3.10.2.1 Previous Investigations for SWMU 09-004(b)

No previous investigations have been conducted at this site.

3.10.2.2 Analytical Results for SWMU 09-004(b)

No decision-level data are available for this site.

3.10.3 SWMU 09-004(c), Sump

SWMU 09-004(c) (Plate 2) is the decommissioned sump (structure 09-186) located at TA-09 on the south side of building 09-37 (a processing laboratory). The sump, installed between 1950 and 1952, is made of reinforced concrete and formerly received industrial waste from a laboratory on the south side of building 09-37. Activities in the building involved HE synthesis scale-up and processing. The sump collected settling HE particles that were not filtered out by the building's waste system and discharged effluent to a former NPDES-permitted outfall (EPA 05A067). Periodically, the sump was inspected, debris was removed using specially equipped trucks, and the sump was cleaned (LANL 1993, 020949, p. 5-39). In September 2001, the sump was pressure-washed, filled with gravel, and capped with concrete (IT Corporation 2001, 073732).

3.10.3.1 Previous Investigations for SWMU 09-004(c)

No previous investigations have been conducted at this site.

3.10.3.2 Analytical Results for SWMU 09-004(c)

No decision-level data are available for this site.

3.10.4 SWMU 09-004(d), Sump

SWMU 09-004(d) (Plate 2) is the decommissioned sump (structure 09-187) located at TA-09 on the south side of building 09-38 (a processing laboratory). The sump, installed between 1950 and 1952, is made of reinforced concrete and formerly received industrial waste from a laboratory on the south side of building 09-38. Activities in the building involved HE casting and pressing; small-scale mixers and extruders also are located in the building. The sump collected settling HE particles that were not filtered out by the building's waste system and discharged effluent to a former NPDES-permitted outfall (EPA 05A067). Periodically, the sump was inspected, debris was removed using specially equipped trucks, and

the sump was cleaned (LANL 1993, 020949, p. 5-36). In November 2006, the sump was filled with gravel and capped with concrete (Johnson 2006, 110442).

3.10.4.1 Previous Investigations for SWMU 09-004(d)

No previous investigations have been conducted at this site.

3.10.4.2 Analytical Results for SWMU 09-004(d)

No decision-level data are available for this site.

3.10.5 SWMU 09-004(e), Sump

SWMU 09-004(e) (Plate 2) is the sump (structure 09-188) located at TA-09 on the south side of building 09-45 (a processing laboratory). The sump, installed between 1950 and 1952, is constructed of aluminum-lined, reinforced concrete and receives industrial waste from a laboratory on the south side of building 09-38. Activities in the building involve HE-synthesis scale-up, processing, and development; and ball-milling and sieving of explosives. Building 09-45 also contains various-sized reactors, mixers, and extruders. The sump collects settling HE particles that are not filtered out by the building's waste system. Originally effluent from the sump was discharged to an NPDES-permitted outfall (EPA 05A067). The outfall has been removed from the permit, and the sump is now periodically cleaned by pumping to a specially equipped truck. The sump is equipped with an overfill alarm and is regularly inspected.

3.10.5.1 Previous Investigations for SWMU 09-004(e)

No previous investigations have been conducted at this site.

3.10.5.2 Analytical Results for SWMU 09-004(e)

No decision-level data are available for this site.

3.10.6 SWMU 09-004(f), Sump

SWMU 09-004(f) (Plate 2) is the sump (structure 09-189) located at TA-09 on the south side of building 09-46 (a processing laboratory). The sump, installed between 1950 and 1952, is constructed of aluminum-lined, reinforced concrete and receives industrial waste from a processing laboratory in building 09-46. Activities in the building involve HE-synthesis scale-up and processing; the building was also used as a storage facility for radioactive materials and waste until 1991. The sump collects settling HE particles that are not filtered out by the building's waste system. Originally effluent from the sump was discharged to an NPDES-permitted outfall (EPA 05A067). The outfall has been removed from the permit, and the sump is now periodically cleaned by pumping to a specially equipped truck. The sump is equipped with an overfill alarm and is regularly inspected.

3.10.6.1 Previous Investigations for SWMU 09-004(f)

No previous investigations have been conducted at this site.

3.10.6.2 Analytical Results for SWMU 09-004(f)

No decision-level data are available for this site.

3.10.7 SWMU 09-004(h), Sump

SWMU 09-004(h) (Plate 2) is the sump (structure 09-191) located at TA-09 on the west side of building 09-32 (a laboratory building). The sump, installed between 1950 and 1952, is constructed of reinforced concrete and receives industrial waste from building 09-32. Activities in the building involve mass spectroscopy, tritium analysis, and HE analytical work; the building is also used for HE pressing, packaging, and short-term storage. The sump collects settling HE particles that are not filtered out by the building's waste system. Originally effluent from the sump was discharged to an NPDES-permitted outfall (EPA 05A066). The outfall has been removed from the permit, and the sump is now periodically cleaned by pumping to a specially equipped truck. The sump is equipped with an overfill alarm and is regularly inspected.

3.10.7.1 Previous Investigations for SWMU 09-004(h)

No previous investigations have been conducted at this site.

3.10.7.2 Analytical Results for SWMU 09-004(h)

No decision-level data are available for this site.

3.10.8 SWMU 09-004(i), Sump

SWMU 09-004(i) (Plate 2) is the decommissioned sump (structure 09-192) located at TA-09 on the north side of building 09-33 (a laboratory building). The sump, installed between 1950 and 1952, is made of reinforced concrete and formerly received industrial waste from building 09-33. Activities in the building involved compressed gas reactions using cyanogens, fluorine, chlorine, and hydrogen cyanide. The sump collected settling HE particles that were not filtered out by the building's waste system and discharged effluent to a former NPDES-permitted outfall (EPA 05A066). Periodically, the sump was inspected, debris was removed using specially equipped trucks, and the sump was cleaned (LANL 1993, 020949, p. 5-36). In September 2001, the sump was pressure-washed, filled with gravel, and capped with concrete (IT Corporation 2001, 073732).

3.10.8.1 Previous Investigations for SWMU 09-004(i)

No previous investigations have been conducted at this site.

3.10.8.2 Analytical Results for SWMU 09-004(i)

No decision-level data are available for this site.

3.10.9 SWMU 09-004(j), Sump

SWMU 09-004(j) (Plate 2) is the decommissioned sump (structure 09-193) located at TA-09 on the north side of building 09-34 (a processing laboratory). The sump, installed between 1950 and 1952, is made of reinforced concrete and formerly received industrial waste from building 09-34. Activities in the building involved HE pressing, mixing, and sieving; small-scale propellant grain preparation also was conducted in the building. Most of the activity in the building involved welding, opening containers with weapons components, and cutting explosive crystals. The sump collected settling HE particles that were not filtered out by the building's waste system and discharged effluent to a former NPDES-permitted outfall (EPA 05A067). Periodically, the sump was inspected, debris was removed using specially equipped trucks, and

the sump was cleaned (LANL 1993, 020949, p. 5-36). In September 2001, the sump was pressure washed, filled with gravel, and capped with concrete (IT Corporation 2001, 073732).

3.10.9.1 Previous Investigations for SWMU 09-004(j)

No previous investigations have been conducted at this site.

3.10.9.2 Analytical Results for SWMU 09-004(j)

No decision-level data are available for this site.

3.10.10 SWMU 09-004(k), Sump

SWMU 09-004(k) (Plate 2) is the decommissioned sump (structure 09-194) located at TA-09 on the north side of building 09-35 (a processing laboratory). The sump, installed between 1950 and 1952, is made of reinforced concrete and formerly received industrial waste from building 09-35. Activities in the building involved large-scale HE pressing. The sump collected settling HE particles that were not filtered out by the building's waste system and discharged effluent to a former NPDES-permitted outfall (EPA 05A067). Periodically, the sump was inspected, debris was removed using specially equipped trucks, and the sump was cleaned (LANL 1993, 020949, p. 5-36). In September 2001, the sump was pressure-washed, filled with gravel, and capped with concrete (IT Corporation 2001, 073732). Building 09-35 was removed during 2006 decontamination and decommissioning (D&D) activities; the foundation slab remains in place.

3.10.10.1 Previous Investigations for SWMU 09-004(k)

No previous investigations have been conducted at this site.

3.10.10.2 Analytical Results for SWMU 09-004(k)

No decision-level data are available for this site.

3.10.11 SWMU 09-004(l), Sump

SWMU 09-004(l) (Plate 2) is the decommissioned sump (structure 09-195) located at TA-09 on the north side of building 09-40 (a laboratory building). The sump, installed between 1950 and 1952, is made of reinforced concrete and formerly received industrial waste from building 09-40. Activities in the building involved temperature compatibility studies using large environmental test chambers and ovens. The sump collected settling HE particles that were not filtered out by the building's waste system and discharged effluent to a former NPDES-permitted outfall (EPA 05A066). Periodically, the sump was inspected, debris was removed using specially equipped trucks, and the sump was cleaned (LANL 1993, 020949, p. 5-36). In September 2001, the sump was pressure-washed, filled with gravel, and capped with concrete (IT Corporation 2001, 073732).

3.10.11.1 Previous Investigations for SWMU 09-004(l)

No previous investigations have been conducted at this site.

3.10.11.2 Analytical Results for SWMU 09-004(l)

No decision-level data are available for this site.

3.10.12 SWMU 09-004(m), Sump

SWMU 09-004(m) (Plate 2) is the decommissioned sump (structure 09-196) located at TA-09 on the north side of building 09-42 (a processing laboratory). The sump, installed between 1950 and 1952, is made of reinforced concrete and formerly received industrial waste from building 09-42. Activities in the building involved nuclear compatibility aging studies using ovens. The sump collected settling HE particles that were not filtered out by the building's waste system and discharged effluent to a former NPDES-permitted outfall (EPA 05A067). Periodically, the sump was inspected, debris was removed using specially equipped trucks, and the sump was cleaned (LANL 1993, 020949, p. 5-36). In September 2001, the sump was pressure-washed, filled with gravel, and capped with concrete (IT Corporation 2001, 073732).

3.10.12.1 Previous Investigations for SWMU 09-004(m)

No previous investigations have been conducted at this site.

3.10.12.2 Analytical Results for SWMU 09-004(m)

No decision-level data are available for this site.

3.10.13 SWMU 09-004(n), Sump

SWMU 09-004(n) (Plate 2) is the decommissioned sump (structure 09-197) located at TA-09 on the north side of building 09-43 (a processing laboratory). The sump, installed between 1950 and 1952, is made of reinforced concrete and formerly received industrial waste from building 09-43. Activities in the building involved HE-pressing activities. The sump collected settling HE particles that were not filtered out by the building's waste system and discharged effluent to a former NPDES-permitted outfall (EPA 05A067). Periodically, the sump was inspected, debris was removed using specially equipped trucks, and the sump was cleaned (LANL 1993, 020949, p. 5-36). In September 2001, the sump was pressure-washed, filled with gravel, and capped with concrete (IT Corporation 2001, 073732)]. Building 09-43 was removed during 2006 D&D activities; the foundation slab remains in place.

3.10.13.1 Previous Investigations for SWMU 09-004(n)

No previous investigations have been conducted at this site.

3.10.13.2 Analytical Results for SWMU 09-004(n)

No decision-level data are available for this site.

3.11 SWMU 09-004(g), Sump

SWMU 09-004(g) (Figure 3.11-1) is the decommissioned sump (structure 09-190) located at TA-09 on the east side of building 09-50 (a shipping and receiving building). The sump, installed between 1950 and 1952, is made of reinforced concrete and formerly received industrial waste from building 09-50. Activities in the building involved shipping, receiving, short-term storage of HE, and small-scale laser experiments. Since 1993 building 09-50 has been used for storage only. The sump collected settling HE particles that were not filtered out by the building's waste system and discharged effluent to a former NPDES-permitted outfall (EPA 04A155). Periodically, the sump was inspected, debris was removed using specially equipped trucks, and the sump was cleaned (LANL 1993, 020949, p. 5-36). In October 2006, the sump was removed (Johnson 2006, 110442).

3.11.1 Previous Investigations for SWMU 09-004(g)

No previous investigations have been conducted at this site.

3.11.2 Analytical Results for SWMU 09-004(g)

No decision-level data are available for this site.

3.12 SWMU 09-004(o), Sump

SWMU 09-004(o) (Figure 3.12-1) is the sump (structure 09-198) located at TA-09 on the north side of building 09-48 (an HE machining building). The sump, installed between 1950 and 1952, is made of aluminum-lined, reinforced concrete and receives industrial waste from building 09-48. Activities in the building involve HE machining. The sump collects settling HE particles that are not filtered out by the building's waste system. Originally effluent from the sump was discharged to an NPDES-permitted outfall (EPA 05A068). The outfall has been removed from the permit and the sump is now periodically cleaned by pumping to a specially equipped truck. The sump is equipped with an overfill alarm and is regularly inspected.

3.12.1 Previous Investigations for SWMU 09-004(o)

An RFI was conducted at SWMU 09-004(o) in 1999. Two samples were collected from one location within the site and submitted to an off-site contract analytical laboratory for analysis of HE. Samples were collected from depth intervals ranging from 0 to 1.25 ft bgs.

3.12.2 Analytical Results for SWMU 09-004(o)

The samples collected and analysis requested from the 1999 RFI are presented in Tables 3.12-1 and 3.12-2. The results of the analysis of samples collected during the 1999 RFI are as follows: HMX was detected (Figure 3.12-2).

3.13 SWMU 09-005(g), Septic System

SWMU 09-005(g) (Figure 3.11-1) is a septic system at TA-09 consisting of a septic tank (structure 09-109), drain field, and formerly NPDES-permitted outfall (EPA 04A155) located at TA-09 approximately 100 ft southeast of building 09-50 (a shipping and receiving building). Installed between 1950 and 1952, the tank is approximately 5 ft wide × 8 ft long × 4 ft deep, with a capacity of 750 gal. The tank receives sanitary waste from building 09-50 and originally discharged into the same industrial waste line as the SWMU 09-004(g) sump. In 1989 the septic tank 09-109 was rerouted to bypass the industrial waste line and discharge to an absorption trench (i.e., drain field) (LANL 1989, 014961). The precise location of the drain field is not known. The outfall has been removed from the NPDES permit (EPA 1998, 109568).

3.13.1 Previous Investigations for SWMU 09-005(g)

No previous investigations have been conducted at this site.

3.13.2 Analytical Results for SWMU 09-005(g)

No decision-level data are available for this site.

3.14 SWMU 09-006, Former Septic Tank

SWMU 09-006 (Figure 3.14-1) is a former septic tank (structure 09-203) at TA-09 that was located approximately 100 ft northeast of building 09-2 (a boiler plant and darkroom facility) (LASL 1954, 110449). Installed in 1943, the septic tank was constructed of reinforced concrete and measured 4 ft wide × 9 ft long × 4 ft deep. The septic tank served former building 09-2 and was used until 1950, when it was replaced by septic tank 09-81 [SWMU 09-005(a)]. Septic tank 09-203 was removed in 1965 (LANL 1993, 014995).

It should be noted that the 1990 SWMU report (LANL 1990, 007511) incorrectly states that septic tank 09-203 served building 09-3. Engineering drawings of building 09-3 (an HE casting facility) show that the building had no drains leading from the building to a septic tank and also show that the building had no restroom or sink drains. Building 09-2, however, did contain sink and restroom drains.

Although associated with TA-09, SWMU 09-006 is located within the physical boundary of TA-08.

3.14.1 Previous Investigations for SWMU 09-006

An RFI was conducted at SWMU 09-006 in April 1995. Two samples were collected from two locations within the site and submitted to an off-site contract analytical laboratory for analyses of metals, total cyanide, HE, VOCs, and tritium. Samples were collected from depth intervals ranging from 6.5 ft to 8.5 ft bgs.

3.14.2 Analytical Results for SWMU 09-006

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.14-1 to 3.14-3. The results of the analyses of samples collected during the 1995 RFI are as follows:

- Aluminum, antimony, arsenic, barium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, selenium, silver, and zinc were detected above BVs. Nitrate was detected (Figure 3.14-2)
- Hexachlorobutadiene and three VOCs were detected (Figure 3.14-3).
- Tritium was not detected.

3.15 Consolidated Unit 09-008(b)-99

Consolidated Unit 09-008(b)-99 (Figure 3.15-1) consists of a former septic tank [SWMU 09-005(a)], a septic tank [SWMU 09-005(d)], and an oxidation pond [SWMU 09-008(b)]. The consolidated unit is located approximately 200 ft east of Anchor Ranch Road.

3.15.1 SWMU 09-005(a), Former Septic System

SWMU 09-005(a) (Figure 3.15-1) is a former septic system that consisted of a septic tank (former structure 09-81), distribution box, and tile drain field located at TA-09 approximately 165 ft east of Anchor Ranch Road. The dimensions and configuration of the drain field are unknown. Installed in 1950, the SWMU 09-005(a) septic system served buildings 08-20, 08-21, 08-22, 08-23, 09-2 (LASL 1944, 110443), and 08-24, where the strontium-90 spill occurred in 1954 (see section 2.6). The buildings served by this septic system had various uses including radiography of nuclear fuel elements, photo-processing,

photo-development, and x-ray operations. The septic system was installed in 1950 and used until replaced by a new system [SWMUs 09-005(d) and 09-008(b)] in 1970, at which time septic tank 09-81 was filled with dirt and left in place. In 1985, the septic tank was removed during a sewage-system upgrade (LANL 1993, 020949, p. 5-60). It is not known if the distribution box was removed.

Although associated with TA-09, SWMU 09-005(a) is located within the physical boundary of TA-08.

3.15.1.1 Previous Investigations for SWMU 09-005(a)

An RFI was conducted at SWMU 09-005(a) in May 1995 (LANL 1996, 054586, pp. 42–43). The first task conducted during the RFI was determining the location of the tile drain field system. The location of the tile drain field system had not been previously determined and no topographical features suggested the presence of a drain field. In an attempt to establish the location of the drain field, one subsurface (3–4 ft bgs) sample was taken from one location in the assumed location of the drain field. A piece of brown clay pipe was found at this location, which suggested that this was the correct location of the drain field.

As part of the RFI, three subsurface samples were taken from three locations in the area surrounding the former septic tank and the tile drain field system. Samples were collected from depth intervals ranging from 2 to 6 ft bgs. Samples were field-screened for radioactivity, organic vapors, and HE. Field-screening results showed no elevated radioactivity levels, and PID measurements were less than 1 ppm; HE were not detected in the samples. Samples were submitted to an off-site contract analytical laboratory for analyses of metals, total cyanide, HE, VOCs, strontium-90, and tritium; however, not all samples were analyzed from all suites (Table 3.15-1).

3.15.1.2 Analytical Results for SWMU 09-005(a)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 3.15-1 to 3.15-4. The results of the analyses of samples collected during the 1995 RFI are as follows:

- Antimony, arsenic, barium, chromium, cobalt, copper, lead, mercury, selenium, silver, and vanadium were detected above BVs (Figure 3.15-2).
- 4-isopropyltoluene and toluene were detected (Figure 3.15-3).
- Strontium-90 was detected (Figure 3.15-4).

3.15.2 SWMU 09-005(d), Septic Tank

SWMU 09-005(d) (Figure 3.15-1) is a decommissioned septic tank (structure 09-211) located near the western boundary of TA-09, approximately 165 ft east of Anchor Ranch Road. Constructed of concrete, the septic tank measures 4 ft wide × 30 ft long × 6 ft deep and has a capacity of 4000 gal. It is divided into four compartments; each of which had an access port consisting of corrugated-metal pipe with a steel-plate cover. The septic tank was installed in 1970 as part of a sanitary-system upgrade that consisted of replacing septic tank 09-81 [SWMU 09-005(a)]. All former discharge to septic tank 09-81 was rerouted to septic tank 09-211. Septic tank 09-211 received effluent from buildings 08-20, 08-21, 08-22, 08-23, and 08-24, where the strontium-90 spill occurred in 1954 (see section 2.6). The septic tank discharged to the SWMU 09-008(b) oxidation pond. In 1988 the contents of septic tank 09-211 were removed, the access ports were removed, sand was backfilled over the tank, and the tank was decommissioned (LANL 1996, 054586).

Although associated with TA-09, SWMU 09-005(d) is located within the physical boundary of TA-08.

3.15.2.1 Previous Investigations for SWMU 09-005(d)

An RFI was conducted at SWMU 09-005(d) in April 1994. Two samples of the tank contents (sludge) were collected from two locations within the tank. Two additional samples were collected by chipping away the material that encrusted the inside walls of the tank. Samples were field-screened for radioactivity, organic vapors, and HE. Field-screening results showed no elevated radioactivity levels, and PID measurements were less than 1 ppm; HE were not detected in the samples. All samples were analyzed for strontium-90, which was detected above FV in the one sample (LANL 1996, 054586, pp. 47−48).

3.15.2.2 Analytical Results for SWMU 09-005(d)

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

3.15.3 SWMU 09-008(b), Oxidation Pond

SWMU 09-008(b) (Figure 3.15-1) is the decommissioned oxidation pond (structure 09-212) located next to the western boundary of TA-09, approximately 200 ft east of Anchor Ranch Road. Installed in 1969, the pond measures 15 ft wide × 65 ft long × 6 ft deep, is clay plated with emulsified asphalt water proofing, and is surrounded by an 8-ft-high chain-link fence. An overflow pipe, located at the southeast corner of the pond, discharged to a drainage channel that flows into Starmer Canyon. The pond treated sanitary waste received from the SWMU 09-005(d) septic tank, which served the sewer line from building 08-24, where the strontium-90 spill occurred in 1954 (see section 2.6) (LANL 1993, 020949, p. 5-61). The pond was decommissioned in 1988.

Although associated with TA-09, SWMU 09-008(b) is located within the physical boundary of TA-08.

3.15.3.1 Previous Investigations for SWMU 09-008(b)

An RFI was conducted at SWMU 09-008(b) in April and June 1994. Three surface (0–0.5 ft bgs) sediment samples were collected from the pond bottom and the pond's receiving drainage outfall, approximately 15 ft downgradient of the pond. Samples were field-screened for radioactivity, organic vapors, and HE. Field-screening results showed slightly elevated radioactivity levels, and PID measurements were less than 1 ppm; HE were not detected in the samples. All samples were analyzed for strontium-90. Strontium-90 was detected above FV in one sample (LANL 1996, 054586, pp. 47−48).

3.15.3.2 Analytical Results for SWMU 09-008(b)

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

3.16 SWMU 09-009, Surface Impoundment

SWMU 09-009 (Figure 3.16-1) consists of a decommissioned surface impoundment (structure 09-218) and two associated decommissioned sand filters at TA-09. The surface impoundment is located approximately 120 ft northeast of building 09-40, and the associated sand filters are approximately 120 ft northeast of the surface impoundment. The surface impoundment is 32 ft wide × 60 ft long × 7 ft deep; the sides are

constructed of concrete, and the bottom of bentonite. The two sand filters, which cover a total area of 33 ft wide × 60 ft long, have a flexible membrane liner and are surrounded by a concrete curb. The surface impoundment was constructed in 1961 to treat sanitary waste from buildings 09-20, 09-21, 09-28, 09-29, 09-32, 09-33, 09-34, 09-35, 09-37, and 09-38 (LANL 1993, 020949, p. 5-45) and discharged to an outfall approximately 300 ft to the northwest. After the sand filters were installed in 1974, the surface impoundment discharged effluent to the sand filters. After flowing through the sand filters, effluent discharged to a former NPDES-permitted outfall (55502S) (LANL 1990, 007511). In 1986, the sewer lines from TA-08 were connected to the surface impoundment, including the sewer line from building 08-24 (LANL 1993, 020949, p.5-45), where the strontium-90 spill occurred in 1954 (see section 2.6). The surface impoundment and sand filter system were decommissioned when the Sanitary Wastewater Systems Consolidation (SWSC) came online in 1992.

3.16.1 Previous Investigations for SWMU 09-009

An RFI was conducted at SWMU 09-009 in April 1994. Two sludge samples were collected from two locations within the surface impoundment and analyzed for strontium-90. The sludge samples were collected from depth intervals ranging from 0 to 3 ft within the surface impoundment. Samples were field-screened for radioactivity, organic vapors, and HE. Field-screening results showed no elevated radioactivity levels, and PID measurements were less than 1 ppm; HE were not detected in the samples. Strontium-90 was detected in both samples (LANL 1996, 054586, pp. 53−54).

3.16.2 Analytical Results for SWMU 09-009

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

3.17 AOC 09-010(a), Storage Area

AOC 09-010(a) (Figure 3.17-1) is a former container storage shelter (structure 09-207) that was located at TA-09 north of building 09-48 (an HE-machining building). Built in 1961, the shelter measured approximately 2.5 ft wide x 11 ft long x 6.5 ft high. It was constructed of four steel pipe posts anchored in concrete with corrugated steel siding on three sides, with the north side open; and a steel-grid floor suspended above the ground (LANL 1996, 053777). The storage shelter was used to store HE-contaminated solid waste collected from building 09-48, including scrap HE from machining operations and solvent-contaminated wipes used to clean machinery and equipment (LANL 1996, 053777). Waste was packaged in heavy plastic bags and stored in metal containers that were staged in the storage shelter to await appropriate disposal (LANL 1993, 020949 p. 5-46). The shelter was removed in 1995 as part of a VCA (LANL 1996, 053777).

The 1990 SWMU report (LANL 1990, 007511) describes AOC 09-010(a) as a waste can shelter, which it mistakenly designates as structure 09-48. Further on in the description, the SWMU report correctly links the storage shelter described north of building 09-48 to structure 09-207.

3.17.1 Previous Investigations for AOC 09-010(a)

A VCA was conducted at AOC 09-010(a) on July 21, 1995. Structure 09-207 was removed and confirmation sampling and soil removal were not completed. During removal the storage shelter and concrete were field-screened for gross-alpha, -beta, and -gamma radioactivity and organic vapors. The debris was field-tested for HE. Field screening did not show the presence of radioactivity above instrument background or organic vapors. No HE were detected. The former sites of the footing for the

steel pipe posts were backfilled with gravel. Approximately 3100 lb of concrete and metal from the storage were disposed of at the Los Alamos County Landfill (LANL 1996, 053777, pp. 5–6).

3.17.2 Analytical Results for AOC 09-010(a)

No data is available for this site.

3.18 AOC 09-010(b), Storage Area

AOC 09-010(b) (Figure 3.18-1) is a former container storage shelter (structure 09-206) that was located at TA-09 approximately 35 ft south of building 09-45 (a processing laboratory). Built in 1961, the shelter measured approximately 2.5 ft wide x 11 ft long x 6.5 ft high. It was constructed of four steel pipe posts anchored in concrete with corrugated steel siding on three sides, with the north side open (LANL 1996, 053777). The shelter had a steel-grid floor suspended above the ground with a secondary containment pan below the floor (LANL 1996, 053777). The storage shelter was used to store 5-gal. and 55-gal. containers of organic solvents (LANL 1996, 053777). The shelter was removed in 1995 as part of a VCA (LANL 1996, 053777).

The 1990 SWMU report (LANL 1990, 007511) describes AOC 09-010(b) as located “northeast of the 09-142 laboratory building.” It is presumed that the SWMU report made a typographical error and meant to associate the container storage shelter with structure 09-42, which is a processing laboratory, as opposed to structure 09-142, which is a manhole. However, no waste container storage shelter existed at building 09-42. Only two waste can shelters were constructed at TA-09, 09-206 and 09-207 (LASL 1961, 095144.1). Container storage shelter 09-206 [AOC 09-010(b)] was constructed south of building 09-45, and 09-207 [AOC 09-010(a)] (Figure 3.17-1) was constructed north of building 09-48.

3.18.1 Previous Investigations for AOC 09-010(b)

A VCA was conducted at AOC 09-010(b) in 1995. Structure 09-206 was removed, and confirmation sampling and soil removal were not completed. The storage shelter and concrete were field-screened for gross-alpha, -beta, and -gamma radioactivity and organic vapors and then removed. The debris was field-tested for HE. Field screening did not show the presence of radioactivity above instrument background or organic vapors. No HE were detected. Structure 09-206 was disposed of at the Los Alamos County Landfill. The former sites of the footing for the steel pipe posts were backfilled with gravel (LANL 1996, 053777, pp. 5−6).

3.18.2 Analytical Results for AOC 09-010(b)

No data is available for this site.

3.19 AOC 09-011(b), Storage Area

AOC 09-011(b) (Figure 3.19-1) is a former storage area located at TA-09, approximately 30 ft southeast of building 09-39 (an HE magazine). The 10-ft-square area was used to temporarily stage equipment potentially contaminated with HE before the equipment was cleaned (flashed) and disposed of at TA-16. The area was once fenced and posted with signs (LANL 1993, 020949 p. 5-47). The date when the area was first used for staging equipment is unknown. After 1987, the area functioned as a satellite accumulation area, which was closed in 1991 (Rodriguez 1998, 058480), and the storage area was no longer used.

3.19.1 Previous Investigations for AOC 09-011(b)

An RFI was conducted at AOC 09-011(b) in 1994 and additionally in 1997. In 1994, two surface (0–0.5 ft bgs) soil samples were collected next to and downgradient of the storage area pavement and analyzed for HE.

The results of the analysis of samples collected during the 1994 RFI are as follows: HE were not detected.

Additional sampling was conducted as part of the same RFI in April 1997. Four additional surface (0–0.5 ft bgs) samples were collected from a drainage channel that received runoff from the site. Samples were submitted to an off-site contract analytical laboratory for analysis of HE (LANL 1998, 059686, pp. 19–20).

3.19.2 Analytical Results for AOC 09-011(b)

The data collected during the 1994 portion of the RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

The samples collected, analysis requested, and decision-level analytical data from the 1997 portion of the RFI are presented in Table 3.19-1. The results of the analysis of samples collected during the 1997 RFI are as follows: HE were not detected.

3.20 AOC 09-011(c), Storage Area

AOC 09-11(c) (Figure 3.20-1) is a former storage area located at TA-09 approximately 5 ft south of building 09-38 (an HE processing and development building). The storage area consisted of a solvent storage rack that measured approximately 3 ft wide x 8 ft long x 6 ft high (Harris 1993, 014946). The storage rack stored dimethylsulfoxide and isobutyl acetate in support of building 09-38 activities (LANL 1993, 020949, p. 5-47). The dates of operation of the storage rack are unknown. The storage rack has been removed (LANL 1993, 020949, pp. 5-47, 6-59−6-60).

3.20.1 Previous Investigations for AOC 09-011(c)

An RFI was conducted at AOC 09-011(c) in 1994. Twelve samples were collected from six locations within the site and submitted to an off-site contract analytical laboratory for analyses of HE, SVOCs, and VOCs. Samples were collected from depth intervals ranging from 0 to 1 ft bgs.

The results of the analyses of samples collected during the 1994 RFI are as follows: HE, bis(2-ethylhexyl)phthalate, and VOCs were detected.

3.20.2 Analytical Results for AOC 09-011(c)

The data collected during the 1994 investigation do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

3.21 AOC 09-012, Disposal Pit

AOC 09-012 (Figure 3.21-1) is described by the 1990 SWMU report (LANL 1990, 007511) “as a possible waste pit” at TA-09 (LANL 1990, 007511). The SWMU report further states that “It is unknown whether the pit was located in the old TA-09 or the new TA-09, or even if the disposal area existed. It has not been

found during field surveys." Based on this information, the RFI work plan for Operable Unit 1157 identified the disposal pit to consist of 15 circular, nonvegetated sites (LANL 1993, 020949, p. 5-62) within the Old Anchor East site (old TA-09). The circles begin 200 ft north of building 09-31 and continue north in a basically straight line. The circles are each approximately 6 ft in diameter and are spaced approximately 5 ft apart. (LANL 1993, 020949, p. 5-62). The types of waste disposed of are unknown.

3.21.1 Previous Investigations for AOC 09-012

An RFI was conducted at AOC 09-012 in 1994. Eighteen surface (0–0.5 ft bgs) samples were collected from eight locations within the site and analyzed for inorganic chemicals, herbicides, pesticides, SVOCs, VOCs, and radionuclides. The results of the analyses of the samples collected during the 1994 RFI are as follows:

- Aluminum, arsenic, barium, beryllium, chromium, copper, iron, lead, magnesium, manganese, potassium, vanadium, and zinc were detected above BVs. Nitrate was detected.
- HE, herbicides, pesticides, and acetone were detected.
- Cesium-137 and europium-152 were detected.

Additional sampling was conducted at AOC 09-012 in 1995. Two samples were collected from two locations within the site and submitted to an off-site contract analytical laboratory for analyses of metals, total cyanide, herbicides, pesticides, PCBs, SVOCs, VOCs, and gamma-emitting radionuclides. Samples were collected from depth intervals ranging from 6.5 to 8.5 ft bgs.

3.21.2 Analytical Results for AOC 09-012

The data collected during the 1994 portion of the RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

The samples collected, analyses requested, and decision-level analytical data from the 1995 portion of the RFI are presented in Tables 3.21-1 to 3.21-3 The results of the analyses of samples collected during the 1995 RFI are as follows:

- Total cyanide, lead, and selenium were detected above BVs (Figure 3.21-2).
- Seventy-two organic chemicals, including PAHs, other SVOCs, VOCs, herbicides, and pesticides were detected (Figure 3.21-3).
- Radionuclides were not detected.

3.22 SWMU 09-013, MDA M

SWMU 09-013 (Plate 3) is MDA M, which consists of two surface disposal areas at TA-09, a main area and a smaller satellite area. The main area occupies about 3.2 acres and is located approximately 1600 ft southeast of building 22-120. The 150 ft wide x 260 ft long satellite area is located approximately 750 ft northwest of the main area. MDA M was created during the demolition of the Old Anchor Ranch East and West sites. Structures were flash burned to remove any HE residue and deposited over the MDA surface. Debris from the construction of current TA-08 and TA-09 facilities (1949−1965) and other sites (1960−1965) were also deposited at MDA M. Materials present at the MDA included metal debris, wood debris, laboratory appliances and fixtures, and metal and glass containers. The main disposal area was

surrounded by an earth berm that eroded through by surface-water runoff (LANL 1993, 020949, pp.2-19, 5-73). MDA M has been inactive since 1965. All debris and contaminated soil were removed from MDA M during an expedited cleanup conducted in 1995−1996 (LANL 1996, 062053).

3.22.1 Previous Investigations for SWMU 09-013

An RFI was conducted at SWMU 09-013 in 1994. Seventy-two soil samples from 50 locations were collected within the site and analyzed for inorganic chemicals, HE, PCBs, SVOCs, VOCs, pesticides, and radionuclides. Samples were collected from a depth interval ranging from 0 to 2 ft bgs. The results of the analyses of samples collected in 1994 are as follows:

- Aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, sodium, vanadium, and zinc were detected above BVs.
- HE, pesticides, Aroclor-1254, SVOCs, and VOCs were detected.
- Uranium-234, -235, and -238 were detected above BVs.

An EC was conducted at SWMU 09-013 from November 1995 to March 1996. Approximately 5700 yd^3 of materials, debris, and waste was removed for recycling and/or disposal. Low-level radioactive wastes (including asbestos) were disposed of at TA-54; all other wastes were managed off-site (LANL 1996, 062053, p. 10). After the removal of debris and contaminated soils, a verification survey was conducted to determine the presence of remaining contaminates for Phase II characterization. The MDA was divided into thirteen 100 ft^2 grids. Two samples were collected from each grid—one composite of five locations and one center location. Samples were analyzed for radionuclides, inorganic chemicals, PCBs, organic chemicals, and asbestos (LANL 1996, 062053, pp. 4−5). The results of the analyses of samples collected during the 1995−1996 EC are as follows (LANL 1996, 062053, pp. A-3−A-5):

- Cadmium, lead, and silver were detected above BVs.
- PCBs were detected.

3.22.2 Analytical Results for SWMU 09-013

The data collected during the 1994 investigation and the 1995−1996 EC do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

3.23 AOC 09-014, Firing Site

AOC 09-014 (Figure 3.23-1) is the former location of a camera mount building (structure 09-176, formerly NU-6) and associated firing point that were located in the area between former building 09-43 and building 09-48. The camera mount building and firing point were components of the former Nu Site firing site that was constructed in 1945. At the time of its construction, Nu Site was designated as TA-23. Between 1950 and 1952, Nu Site was incorporated into TA-09.

The camera mount building housed cameras that photographed the shots conducted at Nu Site from 1945–1950. The building, measuring 15 ft square x 8 ft high, was constructed of reinforced concrete and covered on three sides and on top by an earth berm (LANL 1993, 014995). The interior of the camera mount building contained a camera chamber equipped with a periscope and an equipment box (approximately 3 ft wide × 4 ft long × 3 ft high) constructed of reinforced concrete with a ½-in-thick, steel-plated door (LASL 1947, 110448; LANL 1993, 014995).

The Nu Site firing point was to the east of the camera mount building. The firing point consisted of a 3.5-ft-wide × 12–ft-long × 1-ft-thick reinforced concrete apron containing two small firing pits (LANL 1993, 020949). The apron was on the west side of an earth mound within a loop access road that is visible on 1958 aerial photographs (USAF 1958, 015887). The apron faced toward the camera mount building to the west. The firing point was used from 1945–1950 to test lens charges of up to 135 lb of HE. Smaller shots were conducted in the two firing pits. Shots large enough to damage the apron were occasionally fired in unspecified locations outside the slab but within camera range (LANL 1994, 020949 pp. 5-69, 6-114). It is likely that these larger shots took place in the nonforested areas immediately north and south of the apron (USAF 1958, 015887).

All structures associated with the Nu Site firing point, including the camera mount building, concrete apron, and earthen mound, were removed in August 1952 (LANL 1993, 014995).

3.23.1 Previous Investigations for AOC 09-014

An RFI was conducted at AOC 09-014 in 1994. Ten surface (0–1 ft bgs) soil samples were collected from 10 locations within the site and analyzed for inorganic chemicals and HE. The results of the analyses of samples collected in the 1994 RFI are as follows:

- Barium, beryllium, chromium, and lead were detected above BVs. Nitrate was detected.
- HE were not detected.

3.23.2 Analytical Results for AOC 09-014

The data collected during the 1994 investigation do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

3.24 SWMU C-09-001, Area of Soil Contamination

SWMU C-09-001 (Figure 3.24-1) is a former area of soil contamination located at TA-09 near the southeast corner of building 09-31 (a chemical storage building). The contaminated area consisted of a 2 ft wide × 3 ft long region of stained soil beneath the drainpipe at the southeast corner of the building. Before being plugged (at an unknown date), the drainpipe discharged effluent from spill containment trays within the building. The dates the drainpipe operated are unknown. All contaminated soil associated with the drainpipe was removed during a 1995 VCA (LANL 1996, 054334, pp. 1−2).

3.24.1 Previous Investigations for SWMU C-09-001

An RFI was conducted at SWMU C-09-001 in 1994. Four samples were collected from two locations within the site and analyzed for SVOCs and VOCs. Samples were collected from depth intervals ranging from 0 to 0.5 ft bgs.

The results of the analyses of samples collected during the 1994 RFI are as follows:

- PAHs were detected.
- VOCs were not detected.

A VCA was conducted at SWMU C-09-001 in 1995. The area was field-screened for gross-alpha, -beta, and -gamma radioactivity; organic vapors; and HE. Radioactivity and organic vapors were not detected above background. No HE were detected. The stained area was excavated using hand tools to a depth of

approximately 2 ft, extending westward along building 09-31 for 3 ft. Waste was collected in 55-gal. drums and sent to TA-54, Area L. Two confirmation samples were collected from two locations beneath the excavation and analyzed for SVOCs and VOCs. Samples were collected from depth intervals ranging from 0 to 0.5 ft beneath the excavation. The site was restored by filling the excavated area with clean material, recontouring it, and reseeding it with native grasses (LANL 1996, 054334, pp. 2−3).

The results of the analyses of samples collected during the 1995 VCA are as follows (LANL 1996, 054334, p. 4): SVOCs and VOCs were not detected.

Sampling was conducted at SWMU C-09-001 in 2001. Six samples were collected from six locations within the site and submitted to an off-site contract analytical laboratory for analyses of HE, SVOCs, and VOCs. Samples were collected from depth intervals ranging from 0 to 0.5 ft bgs (LANL 2001, 070937, pp. 1, 4).

3.24.2 Analytical Results for SWMU C-09-001

The data collected during the 1994 RFI and 1995 VCA do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

The samples collected, analyses requested, and decision-level analytical data from the 2001 sampling are presented in Tables 3.24-1 to 3.24-2. The results of the analyses of samples collected during the 2001 sampling are as follows:

- Twenty-six organic chemicals, including PAHs, other SVOCs, and VOCs were detected (Figure 3.24-2).
- HE were not detected.

4.0 SITES ASSOCIATED WITH TA-22

Late in 1944, the Gadget (G) Division constructed four buildings on the south edge of Twomile Mesa to assemble the conventional explosives for the Fat Man weapon. This area is now called Trap Door (TD) Site (TA-22). After assembly of Fat Man, the buildings were abandoned until 1948, when they were remodeled for use by Group X-7 (now Group W-6, the Detonator Technology Group).

By 1948, the abandoned buildings at TA-22 were remodeled into office, laboratory, and fabrication space to replace activities at TA-06, and new magazines and utility buildings were built. In the early 1980s, a new Detonation Systems Laboratory was constructed north of the old buildings in TA-22. By 1985, the laboratory was occupied and the old buildings were demolished or abandoned.

Both TA-22 and TA-40 (section 5.0) are currently active sites occupied by several Laboratory organizations. Detonators are produced at TA-22 and tested at TA-40. The production operations include handling explosives, particularly pentaerythritol tetranitrate (PETN), and printed circuit processing. Testing includes a variety of test-firing activities monitored by sophisticated optical and electronic equipment. In all cases, quantities of materials used are small. A typical detonator contains only a few milligrams of explosives.

4.1 SWMU 22-011, Disposal Pit

The 1990 SWMU report (LANL 1990, 007512) describes SWMU 22-011 as a pit at TA-22 installed for disposal of classified objects and shapes but provides little information as to the location of the pit. In describing SWMU 22-011, the CEARP Report (DOE 1987, 008663) references a 1946 memo

(Bradbury 1946, 015076), which says that a material pit prepared at TD Site would be open until June 1, 1946; however the pit location is not provided. The RFI field team thought that a disturbed area south of building 22-1 was the possible location of the disposal pit, but that area was determined to be a seepage pit [SWMU 22-015(d)]. According to a 1992 memo (Van Vessem 1992, 015073) from a former worker at Twomile Mesa Site (TA-06) and TD Site (TA-22), all the disposal pits dug on Twomile Mesa were in the area designated as MDA F [SWMU 06-007(a)], including the 1946 classified objects pit referred to in the Bradbury memo. Based on the information provided in these later documents, the SWMU report incorrectly linked the 1946 disposal pit with TA-22.

4.1.1 Previous Investigations for SWMU 22-011

No previous investigations have been conducted at this site.

4.1.2 Analytical Results for SWMU 22-011

No decision-level data are available for this site.

4.2 SWMU 22-015(c), Drainline and Outfall

SWMU 22-015(c) is a former NPDES-permitted outfall (06A077) located at TA-22 approximately 80 ft south of building 22-52 (Plate 4). The outfall received discharge from the floor drains in building 22-52, which were connected to the outfall via a 6-in.-diameter vitrified-clay pipe (VCP). The outfall daylighted in a channel that drained to a pond located near the edge of the mesa. Drainage from the pond eventually discharged into Pajarito Canyon. Beginning in 1952, building 22-52 was used as a plating laboratory and was later converted into a printed-circuit etching laboratory. Although most waste from the plating and etching operations at building 22-52 was collected manually, effluent from the rinse tanks overflowed to the floor drains. Discharge to the outfall was discontinued in 1977, when all liquid wastes were collected in drums and sent off-site for treatment.

4.2.1 Previous Investigations for SWMU 22-015(c)

An EC was conducted at SWMU 22-015(c) in August and September 1995. Twelve samples were collected from eight locations downgradient of the outfall. Samples were collected from depth intervals ranging from 0 to 2.5 ft bgs. Samples were field-screened for radioactivity and organic vapors Samples were submitted to an off-site contract analytical laboratory for analyses; 6 of the 12 samples were analyzed for metals and HE and the other 6 were analyzed for VOCs. Soil excavation began on August 12, 1995 and continued through August 14, 1995. Field screening for VOCs and radionuclides was performed during the excavation. Approximately 260 yd^3 of contaminated soil was disposed of off- site (LANL 1995, 091212, pp. 1−3).

As part of the 1995 EC, additional excavation activities began on September 12, 1995, and were completed on September 21, 1995. The site was regraded to minimize further erosion. To confirm cleanup activities, five samples were collected from four locations where the contaminated soil was removed. Samples were submitted to an off-site contract analytical laboratory for analyses of metals (LANL 1995, 091212, p. 1).

4.2.2 Analytical Results for SWMU 22-015(c)

The samples collected, analyses requested, and decision-level analytical data from the 1995 EC are presented in Tables 4.2-1 to 4.2-3. The results of the samples collected during the 1995 EC are as follows (LANL 1995, 091212, p. 2):

- Antimony, arsenic, cadmium, chromium, cobalt, copper, iron, lead, mercury, nickel, silver, thallium, vanadium, and zinc were detected above BVs. Hexavalent chromium was detected (Plate 5).
- Sixty-two VOCs were detected (Plate 6).

4.3 Consolidated Unit 22-015(d)-99

Consolidated Unit 22-015(d)-99 (Plate 7) consists of a septic system [SWMU 22-010(b)], a wash area [SWMU 22-012], a drain and seepage pit [SWMU 22-015(d)], a sump [SWMU 22-015(e)], and a septic system [SWMU 22-016]. The consolidated unit is located in the north-central area of TA-22 south of building 22-1.

4.3.1 SWMU 22-010(b), Septic System

SWMU 22-010(b) is a septic system located at TA-22 approximately 90 ft south of building 22-1 (Plate 7). The septic system consists of a septic tank (structure 22-51), drainlines, a leach field, sand filter, and outfall. The septic tank was installed in 1948 and originally served buildings 22-1 (an assembly building), 22-4 (an office and fabrication building), and 22-5 (a shop and laboratory building). In the 1950s, buildings 22-32 (a guard shack) and 22-52 (a plating and circuit etching shop) were constructed and added to the septic system. In 1984, buildings 22-90 (an office building), 22-91 (an assembly building), and 22-93 (a detonator development building) were constructed and added to the system. In 1973, a sand filter was constructed (east of the leach field) to replace the leach field. The sand filter discharged through a 6-in.-diameter VCP that extended south 120 ft before terminating at an outfall. The sand filter operated until the 1990s when it was rerouted to the SWSC.

4.3.1.1 Previous Investigations for SWMU 22-010(b)

An RFI was conducted at SWMU 22-010(b) in July and August 1994. Forty-seven samples were collected from 22 locations downgradient of building 22-1. The contents of septic tank 22-51, soils surrounding the tank, the outfall area no longer receiving discharges, the inactive leach field area, and the inactive sand filter and related outfall area were sampled. Samples were collected from depth intervals ranging from 0 to 25 ft bgs. Samples were analyzed for inorganic chemicals, HE, SVOCs, and VOCs (LANL 1997, 056664, pp. 159-−161).

The results of the analyses of samples collected during the 1994 RFI are as follows:

- Arsenic, cadmium, chromium, copper, mercury, lead, silver, vanadium, and zinc were detected above BVs (LANL 1997, 056664, p. 163).
- HE, PAHs, other SVOCs, and VOCs were detected.

4.3.1.2 Analytical Results for SWMU 22-010(b)

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

4.3.2 SWMU 22-012, Wash Area

SWMU 22-012 is an equipment wash area located at TA-22 south of building 22-1 (Plate 7). The wash area consists of a concrete pad placed adjacent to a sump [SWMU 22-015(e)]. The pad was constructed in 1950 and measures 8 ft long × 8 ft wide × 10 in. thick. The pad was used for washing explosives-contaminated equipment used in building 22-1. The contaminated wash water drained from the pad into the adjacent sump. The wash area ceased use after 1984 when building activities ceased, and the sump was filled with concrete.

4.3.2.1 Previous Investigations for SWMU 22-012

An RFI was conducted at SWMU 22-012 in June 1994. Nine surface samples (0–0.5 ft bgs) were collected from nine locations around the perimeter of the wash pad. Samples were analyzed for HE. No other analyses were requested for the samples because only HE contamination was expected to be associated with equipment-washing activities (LANL 1997, 056749, pp. 31−33).

The results of the analyses of samples collected during the 1994 RFI are as follows:

- HMX was detected.

4.3.2.2 Analytical Results for SWMU 22-012

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

4.3.3 SWMU 22-015(d), Drain and Seepage Pit

SWMU 22-015(d) is a drain and seepage pit at TA-22 that served building 22-1 (Plate 7). The 1990 SWMU report (LANL 1990, 007512) does not mention the existence of a seepage pit and describes the SWMU 22-015(d) drain as emptying on the ground at a discharge point approximately 100 ft south of the building. A second memo from a TA-22 site worker (Meyers 1993, 015263) states that in 1948, the floor drain was connected to a 10-ft-deep pit filled with gravel (i.e., a seepage pit) located south of the building. This discrepancy was resolved when the existence of the seepage pit was verified during 1993 RFI activities. The seepage pit had no outlet line; therefore, the SWMU report was mistaken in associating the SWMU 22-015(d) drain as the source for the outfall described as “emptying on the ground.” Use of the seepage pit likely ceased after installation of the HE sump [SWMU 22-015(e)].

4.3.3.1 Previous Investigations for SWMU 22-015(d)

An RFI was conducted at SWMU 22-015(d) in June and July 1994. Twelve samples were collected from three locations downgradient of the seepage pit. Samples were analyzed for HE and VOCs. Samples were collected from depth intervals ranging from 0 to 28.5 ft bgs (LANL 1997, 056749, p. 31).

The results of the analyses of samples collected during the 1994 RFI are as follows: HE were detected.

Additional sampling was conducted as part of the same RFI in April 1997. Four samples were collected from one location at the seepage pit, and one sample was collected from one location beneath an exposed section of the drainline upgradient of the seepage pit. Samples were collected from depth intervals ranging from 0 to 20 ft. The samples were submitted to an off-site contract analytical laboratory for analysis of HE and VOCs (LANL 1997, 056749, p. 31).

4.3.3.2 Analytical Results for SWMU 22-015(d)

The data collected during the 1994 portion of the RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

The samples collected, analyses requested, and decision-level analytical data from the 1997 portion of the RFI are presented in Tables 4.3-1 and 4.3-2. The results of the samples collected during the 1997 portion of the RFI are as follows (LANL 1997, 056749, p. 31): Fifty-seven organic chemicals, including PETN and VOCs, were detected (Plate 8).

4.3.4 SWMU 22-015(e), Sump

SWMU 22-015(e) is an HE sump that was located at TA-22 on the exterior south wall of building 22-1 (Plate 7). The sump was made of concrete and measured 6.4 ft long × 4.5 ft wide × 5 ft deep. The sump was installed in 1949 to receive discharge from a sink and floor troughs located within building 22-1, as well as wastewater from an equipment wash area (SWMU 22-012) located directly south of the sump. The sump discharged to an outfall that daylighted approximately 210 ft south of the building. The sump was filled with concrete in 1984 when building activities ceased.

4.3.4.1 Previous Investigations for SWMU 22-015(e)

An RFI was conducted at SWMU 22-015(e) in June 1994. Seventeen samples were collected from eight locations within a 10-ft radius of the sump. Samples were collected from depth intervals ranging from 0 to 7 ft bgs. Samples were analyzed for HE and VOCs (LANL 1997, 056749, p. 31).

The results of the analyses of samples collected during the 1994 RFI are as follows: HE were detected.

4.3.4.2 Analytical Results for SWMU 22-015(e)

The data collected during the 1994 RFI do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

4.3.5 SWMU 22-016, Septic Tank

SWMU 22-016 is a decommissioned septic tank (structure 22-42) located approximately 120 ft south of building 22-1 (Plate 7). The septic tank was constructed of reinforced concrete and measured approximately 9 ft long × 6 ft wide × 5 ft deep with a capacity of 1365 gal. The tank served building 22-1 and former building 22-4 and was active from 1945 until 1948, when it was replaced by a new septic tank (structure 22-51) at SWMU 22-010(b).

4.3.5.1 Previous Investigations for SWMU 22-016

No previous investigations have been conducted at this site.

4.3.5.2 Analytical Results for SWMU 22-016

No data is available for this site.

5.0 SITES ASSOCIATED WITH TA-40

TA-40 lies at elevations between 6960 and 7480 feet amsl. It is located on a narrow finger of Twomile Mesa. The finger mesa is bounded on the north by an unnamed branch of Twomile Canyon, and on the south by Pajarito Canyon.

Technical Area 40, the Detonator Firing Site, was built in 1950 to replace the detonator firing chambers at TA-06. TA-40 includes an office building, an inert assembly building, six firing chambers, five shot preparation buildings, eight magazines, and utility buildings. The six firing sites have been used since 1950 for explosives testing related to research and development of detonators and other small explosives assemblies. One of the firing chambers, TA-40-9, was upgraded in the 1980s to house a two-stage gas gun. The Laboratory's first contained test-firing facility was completed in 1992 at chamber TA-40-8.

5.1 SWMU 40-001(c), Septic Tank

SWMU 40-001(c) (Figure 5.1-1) is a septic tank (structure 40-25) located at TA-40 approximately 25 ft east of building 40-11. Constructed of reinforced concrete, the septic tank measures 4 ft wide x 7 ft long x 6 ft deep and has a capacity of 540 gal. (LASL 1949, 110465). The septic tank was installed in 1950 and serves building 40-11, which houses changing rooms and restrooms. Originally, the septic tank discharged northeast into Twomile Canyon. In 1951, the drainline was rerouted to discharge south to Pajarito Canyon (LASL 1951, 110464). In 1988, the septic tank outlet was again rerouted; this time to discharge to a leach field constructed south of the septic tank (LANL 1988, 110466).

5.1.1 Previous Investigations for SWMU 40-001(c)

An RFI was conducted at SWMU 40-001(c) in 1994. Fifteen samples were collected from six locations within the site and analyzed for inorganic chemicals, HE, SVOCs, and VOCs. Samples were collected from depth intervals ranging from 0 to 11 ft bgs.

The results of the analyses of samples collected during the 1994 RFI are as follows:

- Aluminum, arsenic, barium, beryllium, cadmium, chromium, copper, iron, lead, manganese, mercury, selenium, vanadium, and zinc were detected above BVs.
- SVOCs and methylene chloride were detected.

5.1.2 Analytical Results for SWMU 40-001(c)

The data collected during the 1994 investigation do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B.

5.2 SWMU 40-003(a), Open Detonation Area

SWMU 40-003(a) (Figure 5.2-1) consists of two former detonation areas located at TA-40. The first site was located 450 ft east of structure 40-15. Use of the site began in the early 1950s, and detonations were remotely controlled from structure 40-15. In 1958, several instances occurred where intact detonators and pieces of HE were discharged during detonations. Efforts to recover all the scattered detonators and HE were unsuccessful (Anderson and Tucker 1959, 007559). Detonation activities at this first location ceased in the early 1960s when a second open-detonation area was developed at a location further to the east.

This second site is approximately 1300 ft east of structure 40-15, within a natural amphitheatre at the end of an unnamed dirt road. At the second site, scrap explosive materials were detonated and controlled remotely from structure 40-15. After each detonation, scattered debris was picked up and transported to an appropriate waste disposal site. Rock rubble and crushed tuff that sloughed from the amphitheater wall was pushed to the south, creating an area of fill that extended nearly to the edge of Pajarito Canyon. The second detonation site was later operated under RCRA interim status. All detonation operations ceased in 1985. The interim-status open-detonation area underwent RCRA closure from 1992 to 1994. The closure report was approved by NMED in August 1995.

The 1990 SWMU report (LANL 1990, 007513) and the Operable Unit 1111 RFI Work Plan (LANL 1993, 026068) both describe SWMU 40-003(a) as being located 450 ft east of structure 40-15 and state that a RCRA closure plan was being developed for the site. Both documents mistakenly identify the location 450 ft east of structure 40-15 as undergoing RCRA closure. The 1991 final closure plan (LANL 1991, 007653) was developed for the second detonation area located 1300 ft east of structure 40-15 and specifically states that the first detonation area located 450 ft east of structure 40-15 would not be addressed under RCRA closure. The first detonation area was omitted from the closure because its period of use occurred prior to RCRA regulation.

5.2.1 Previous Investigations for SWMU 40-003(a)

The Closure Certification Report for the TA-40 Scrap Detonation Site (IT Corporation 1995, 057521) documents that in 1990, LANL personnel found the site had been used as a dumping area for construction rubble and debris. The construction debris was removed from the detonation area in April 1992. During removal, all debris was field-screened for HE contamination, and all uncontaminated material was properly disposed of at the Los Alamos County landfill. Debris that showed residual HE contamination was either decontaminated and then disposed of at the landfill or it was collected for additional treatment and subsequent disposal. Along with the construction debris, approximately 177 yd^3 of rubble and soil were removed from the area and samples were taken beneath the excavation (IT Corporation 1995, 057521, p. 13).

According to the closure report, silver and thallium were detected above background (IT Corporation 1995, 057521, p. 13).

5.2.2 Analytical Results for SWMU 40-003(a)

No decision-level data are available for this site.

5.3 AOC 40-003(b), Burn Site

AOC 40-003(b) (Figure 5.2-1) is a former burn site located at TA-40 approximately 1400 ft east of building 40-15, adjacent to the open detonation area [SWMU 40-003(a)]. The burn site consists of three small burning areas and a burn pit. From 1960 to 1985, a wire burn cage (4 ft wide × 4 ft long × 5 ft high) with a steel-plate floor was used at three different locations. The burn cage was used to contain burning materials and to prevent wastes from being windblown before and during burning activities. Kerosene was poured over the stacked waste, and burning was initiated using explosive detonators fired remotely (LANL 1991, 007653, section 2, pp. 1−7). The burn-cage locations operated as a hazardous waste thermal treatment unit under RCRA interim status until operations ceased in 1985. The burn-cage locations underwent RCRA closure from 1992 to 1994. The closure report (IT Corporation 1995, 057521) was approved by NMED in August 1995.

The burn pit is located between the two northern locations of the burn cage and measures approximately 12 ft wide × 50 ft long × 12 ft deep. Burn pit operations began in 1961 and ceased sometime before 1980. The burn pit was omitted from the RCRA closure because its period of use occurred before 1980 and, therefore, prior to RCRA regulation.

5.3.1 Previous Investigations for AOC 40-003(b)

The Closure Certification Report for the TA-40 Scrap Detonation Site (IT Corporation 1995, 057521) documents that characterization samples were collected at SWMU 40-003(b) in October 1994. These characterization samples were used to identify two small surface areas—approximately 4 ft × 4 ft and 6 ft × 6 ft—requiring remediation based on analytical results that indicated elevated levels of lead. Soil remediation of these areas was conducted during December 1994. Forty-one 55-gal. drums and six rolloff bins of waste were generated from the soil remediation. Of these, 28 drums determined to be nonhazardous were stored at TA-40 to await final disposal at an off-site landfill. The remaining 13 drums were stored at TA-54. The rolloff bins were disposed of at an off-site RCRA-permitted treatment, storage, or disposal facility. Confirmation sampling indicated contaminant concentrations below applicable cleanup levels (IT Corporation 1995, 057521, pp. 8−15).

The results of the analyses of the samples collected during the 1995 TA-40 closure are as follows (IT Corporation 1995, 057521, pp. 10−11): arsenic, silver, barium, cadmium, chromium, lead, mercury, nickel, selenium, and thallium were detected above BVs.

The excavated sites were restored with clean backfill that was compacted and graded to the original contours of the surrounding terrain (IT Corporation 1995, 057521, p. 15).

A 20-ft-long × 20-ft-wide × 4-ft-deep excavated area called the “burn pit” was discovered to be beyond the scope of the intended remediation. Although characterization samples identified RCRA-hazardous levels of lead within the “burn pit” area, it was determined that Hazardous and Solid Waste Amendments of 1984 regulations applied rather than RCRA regulations, because the “burn pit” area was closed before 1980.

5.3.2 Analytical Results for AOC 40-003(b)

The data collected during the 1992 and 1994 investigations do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B of the HIR.

5.4 SWMU 40-004, Storage Area

SWMU 40-004 (Figure 5.4-1) is a storage area located at TA-40 behind building 40-9 (DOE 1987, 008663). The 1990 SWMU report (LANL 1990, 007513) states that the storage area was used to store containers of chloroethane and vacuum pump oil, and that oil stains were observed. The dates of operation for the storage area are unknown.

An extensive archival search was unable to find any additional information of any kind about this site other than what was provided in the 1990 SWMU report and the CEARP report (DOE 1987, 008663). The information described in the SWMU report is not in the CEARP report, so it is not known how the SWMU report derived its description of the SWMU 40-004 storage area and the products stored there. The RFI work plan states that this storage area is located beneath the southwest wing of building TA-40 (LANL 1993, 026068, p. 5-95); however, no references are provided as to how this information is known. Therefore, it is concluded that the storage area could have been located anywhere behind building 40-9, including the area beneath the southwest wing of the building, which is a new addition constructed in 1989.

5.4.1 Previous Investigations for SWMU 40-004

In 1994, the ER Project conducted RFI sampling at SWMU 40-004. Samples were collected and submitted to a fixed laboratory for analysis of organic chemicals. None of the chemicals analyzed exceeded BVs or screening levels.

5.4.2 Analytical Results for SWMU 40-004

The data collected during the 1994 RFI does not meet current data validation standards and is not decision-level data. The screening-level data are presented in Appendix B of the HIR.

5.5 SWMU 40-006(a), Firing Site

SWMU 40-006(a) (Plate 9) is a firing site (structure 40-15) located at TA-40 on the northern rim of Pajarito Canyon, at the east end of TD Site road. SWMU 40-006(a) is listed in Table IV-2 of the Consent Order (Deferred Sites in Testing Hazard Zones), and investigation of this site is deferred per section IV.A.5.b of the Consent Order.

The SWMU 40-006(a) firing site consists of a reinforced concrete and steel building that allows observation of the test shots, a partially protected area on the south side of the building where shots are prepared, and an open firing pad connected to the south of the building where larger shots are fired. Since 1950, this firing site has been used to test and develop detonators. Tests conducted at this site have included detonator booster tests, which use 2 lb of explosives, and large open-air shots, which can use up to 50 lb of explosives (LANL 1993, 026068 p. 5-79). After each shot, large pieces of debris are removed and disposed of, the open area is graded, and the sand and debris are pushed to the edge of the canyon. This practice created a sand berm near the canyon edge. Building 40-15 also served as the remote-control point for the SWMU 40-003(a) detonation sites.

5.5.1 Previous Investigations for SWMU 40-006(a)

The 1993 RFI work plan (LANL 1993, 026068) reported a 1989 DOE investigation at SWMU 40-006(a). Three samples were collected from three locations and analyzed for HE, inorganic chemicals, and radionuclides. Samples were collected from depth intervals ranging from 0 to 0.5 ft bgs. The results of the analyses of samples collected during the 1989 investigation are as follows:

- Barium, copper, and zinc were detected above BVs.
- HE were not detected.
- Thorium-232 and potassium-40 were detected.

An RFI was conducted at SWMU 40-006(a) in 1995. One-hundred thirteen samples were collected from 48 locations and submitted to an off-site contract analytical laboratory for analyses of metals, total cyanide, uranium, HE, SVOCs, gamma-emitting radionuclides, strontium-90, and tritium; however, not all samples were analyzed for all suites. Samples were collected at depth intervals ranging from 0 to 14.5 ft bgs.

5.5.2 Analytical Results for SWMU 40-006(a)

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 5.5-1 to 5.5-4. The results of the analyses of samples collected during the 1995 RFI are as follows:

- Antimony, arsenic, barium, cadmium, calcium, chromium, cobalt, copper, lead, magnesium, manganese, mercury, nickel, selenium, silver, total uranium, and zinc were detected above BVs (Plate 10).
- Twenty-one organic chemicals, including PAHs, other SVOCs, and HE, were detected (Plate 11).
- Cesium-137 and strontium-90 were detected above FVs; cobalt-60 was detected (Plate 12).

5.6 SWMU 40-006(b), Firing Site

SWMU 40-006(b) (Figure 5.6-1) is a firing site (structure 40-8) located at TA-40 on the northern rim of Pajarito Canyon, at the west end of TD Site Rd. SWMU 40-006(b) is listed in Table IV-2 of the Consent Order (Deferred Sites in Testing Hazard Zones), and investigation of this site is deferred per section IV.A.5.b of the Consent Order.

The SWMU 40-006(b) firing site consists of a reinforced concrete and steel building that allows observation of the test shots and a partially protected area on the south side of the building where shots are prepared. Since 1950, this firing site has been used to test detonators. Historically, the firing site included an open firing pad connected to the south of the building where the larger shots (up to 85 lb) were fired. In the past after each shot, large pieces of debris were removed and disposed of, and sand and debris were pushed to the edge of the canyon. This practice created a soil berm near the canyon edge.

In 1992, the firing site was modified. The firing pad and the top 6 in. of soil were removed (LANL 1993, 026068, p. 5-80), and a containment system consisting of a large vessel with a high-efficiency particulate filtration system was installed. The firing site is now used only to test and develop small explosive devices.

5.6.1 Previous Investigations for SWMU 40-006(b)

In 1991, the SWMU 40-006(b) firing pad was excavated in preparation for the installation of a containment system. Before excavation, a reconnaissance survey was conducted for contaminants in the soil surrounding the firing pad. Samples were tested for total beryllium, total uranium, explosive residues, PCBs, SVOCs, VOCs, and gross radioactivity. Results showed that lead and uranium were present. Before construction began, the top 6 in. of soil on the firing pad were removed and placed on plastic sheeting (LANL 1993, 026068, pp. 5-79−5-89).

Best management practices (BMPs) were installed at SWMU 40-006(b) in 2000 as part of the post-Cerro Grande fire recovery. The fire damage was moderate to severe with several buildings destroyed near this site. Straw wattles were installed on the steep portion of the slope to reduce the sediment migration potential. Wattles were also installed on the mesa’s edge to divert run-on from the slope (LANL 2000, 067370, p. 31).

5.6.2 Analytical Results for SWMU 40-006(b)

No decision-level data are available for this site.

5.7 SWMU 40-006(c), Firing Site

SWMU 40-006(c) (Figure 7.7-1) is a firing site (structure 40-5) located at TA-40 on the north edge of Pajarito Canyon at the west end of TD Site Rd. SWMU 40-006(c) is listed in Table IV-2 of the Consent Order (Deferred Sites in Testing Hazard Zones), and investigation of this site is deferred per section IV.A.5.b of the Consent Order.

The SWMU 40-006(c) firing site consists of a reinforced concrete and steel building that allows observation of test shots and a partially protected area on the south side of the building where shots are prepared. Since 1950, this firing site has been used to test detonators. Historically, the firing site included an open firing pad connected to the south of the building where the larger shots (up to 50 lb) were fired. In the past, after each shot, large pieces of debris were removed and disposed of, and sand and debris were pushed to the edge of the canyon. This practice has created a soil berm near the canyon edge. The firing site is now used only to test and develop small explosive devices.

5.7.1 Previous Investigations for SWMU 40-006(c)

BMPs were installed at SWMU 40-006(c) in 2000 as part of the post-Cerro Grande fire recovery. The fire damage was moderate to severe with several buildings destroyed near this site. Straw wattles were installed on the steep portion of the slope to reduce the sediment migration potential. Wattles were also installed on the mesa's edge to divert run-on from the slope (LANL 2000, 067370, p. 32).

5.7.2 Analytical Results for SWMU 40-006(c)

No decision-level data are available for this site.

5.8 AOC 40-007(a), Storage Area

AOC 40-007(a) (Figure 5.8-1) is a satellite accumulation area (SAA) and former storage area located at TA-40 inside building 40-3 (an HE preparation building). Before this area became an SAA, it was used to store waste of unspecified type associated with HE detonator assembly operations. As an SAA, this site stores waste associated with HE detonator assembly operations, which typically consists of HE-contaminated rags. The waste is generated at a rate of 1 to 2 gal. per month.

5.8.1 Previous Investigations for AOC 40-007(a)

No previous investigations have been conducted at this site.

5.8.2 Analytical Results for AOC 40-007(a)

No decision-level data are available for this site.

5.9 AOC 40-007(b), Storage Area

AOC 40-007(b) (Figure 5.9-1) is an SAA and former storage area located at TA-40 inside building 40-6 (an HE preparation building). Before this area became an SAA, it was used to store waste of unspecified type associated with HE detonator assembly operations. As an SAA, this site stores waste associated with HE detonator assembly operations, which typically consists of HE-contaminated rags. The waste is generated at a rate of 1 to 2 gal. per month.

5.9.1 Previous Investigations for AOC 40-007(b)

No previous investigations have been conducted at this site.

5.9.2 Analytical Results for AOC 40-007(b)

No decision-level data are available for this site.

5.10 AOC 40-007(c), Storage Area

AOC 40-007(c) (Figure 5.10-1) is the location of a former SAA and storage area located at TA-40 inside building 40-11 (an HE preparation building). Before this area became an SAA, it was used to store waste of unspecified type associated with HE detonator assembly operations. As an SAA, this site stored waste associated with HE detonator assembly operations, which typically consists of HE-contaminated rags. The waste was generated at a rate of 1 to 2 gal. per month. In January 2007, the SAA was removed.

5.10.1 Previous Investigations for AOC 40-007(c)

No previous investigations have been conducted at this site.

5.10.2 Analytical Results for AOC 40-007(c)

No decision-level data are available for this site.

5.11 AOC 40-007(d), Storage Area

AOC 40-007(d) (Figure 5.11-1) is the location of a former SAA and storage area located at TA-40 inside building 40-14 (an HE preparation building). Before this area became an SAA, it was used to store waste of unspecified type associated with HE detonator assembly operations. As an SAA, this site stored waste associated with HE detonator assembly operations, which typically consists of HE-contaminated rags. The waste was generated at a rate of 1 to 2 gal. per month. In January 2005, the SAA was removed.

5.11.1 Previous Investigations for AOC 40-007(d)

No previous investigations have been conducted at this site.

5.11.2 Analytical Results for AOC 40-007(d)

No decision-level data are available for this site.

5.12 SWMU 40-009, Landfill

SWMU 40-009 (Figure 5.12-1) is a landfill located at TA-40 south of building 40-9. The 1990 SWMU report (LANL 1990, 007513) states that the landfill resulted from a decommissioning effort undertaken at TA-15 in 1967. The SWMU report provides only a vague location for the landfill, stating that debris from TA-15 was taken to TA-40 and disposed of in the canyon between buildings 40-5 and 40-15. The RFI investigating field team walked the canyon area between the two buildings and found two prominent earthen berms on the steep hillside directly south of building 40-9 (LANL 1995, 063947). The field team suspected the berms to be the landfill (LANL 1995, 063947).

5.12.1 Previous Investigations for SWMU 40-009

An RFI was conducted at SWMU 40-009 in 1995. Eighteen soil samples were collected from six locations within the site and submitted to an off-site contract analytical laboratory for analyses of metals, uranium, HE, SVOCs, gamma-emitting radionuclides, and strontium-90. One sample was also analyzed for tritium. Samples were collected from depth intervals ranging from 0 to 5.5 ft bgs.

BMPs were installed at SWMU 40-009 in 2000 as part of the post-Cerro Grande fire recovery. Straw wattles were installed along the mesa edge to divert run-on from the slope. Rock check dams (on-site materials used) were provided to dissipate flow within the drainage channels on both the east and west ends of the site (LANL 2000, 067370, p. 33).

5.12.2 Analytical Results for SWMU 40-009

The samples collected, analyses requested, and decision-level analytical data from the 1995 RFI are presented in Tables 5.12-1 to 5.12-4. The results of the analyses of samples collected during the 1995 RFI are as follows:

- Beryllium, cadmium, copper, lead, total uranium, and zinc were detected above BVs (Figure 5.12-2).
- Eight organic chemicals including HE, PAHs, and other SVOCs, were detected (Figure 5.12-3).
- Cesium-137 and strontium-90 were detected above FVs (Figure 5.12-4).

5.13 SWMU 40-010, Surface Disposal Area

SWMU 40-010 (Figure 5.13-1) is a surface disposal area located at TA-40 on the edge of Pajarito Canyon, approximately 200 ft south of former building 40-72. The surface disposal area extends about 150 ft along the canyon edge and 140 ft down the canyon side. The area contained various debris, including twenty 30-gallon drums (LANL 1993, 026068, p. 5-56). This area also contains debris from farm and home implements that predate Manhattan Project activities. Post-Cerro Grande fire activities removed all the drums and exposed debris, with the exception of the pre-Manhattan Project debris, which is considered to be of archaeological importance.

SWMU 40-010 is not listed in the 1990 SWMU report (LANL 1990, 007513). This SWMU was one of 27 newly identified SWMUs added to the Laboratory's Hazardous Waste Facility Permit (HWFP) by the Environmental Protection Agency (EPA) in 1993 (LANL 1993, 030074).

5.13.1 Previous Investigations for SWMU 40-010

An RFI was conducted at SWMU 40-010 in 1994. Six samples were collected from six locations and analyzed for inorganic chemicals, HE, SVOCs, VOCs, and radionuclides. Samples were collected from depth intervals ranging from 0 to 2.5 ft bgs. The results of the analyses of samples collected during the 1994 RFI are as follows:

- Aluminum, barium, calcium, chromium, copper, iron, lead, magnesium, manganese, potassium, vanadium, and zinc were detected above BVs; total cyanide was detected.
- Methylene chloride and toluene were detected.
- Cesium-137 and strontium-90 were detected above BVs/FVs.

BMPs were installed at SWMU 40-010 in 2000 as part of the post-Cerro Grande fire recovery. The fire damage exposed the surface disposal area. Straw wattles were installed upgradient of the surface disposal area to provide run-on diversion. The area was raked, reseeded, and mulched. Surface debris near the edge was removed and disposed of as solid wastes (LANL 2000, 067370, p. 34).

5.13.2 Analytical Results for SWMU 40-010

The data collected during the 1994 investigation do not meet current data validation standards and are not decision-level data. The screening-level data are presented in Appendix B**.**

6.0 REFERENCES AND MAP DATA SOURCES

6.1 References

The following list includes all documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and Environmental Remediation and Surveillance Program identification numbers (ER IDs). This information is also included in text citations. ER ID numbers are assigned by the EP 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; the U.S. Department of Energy—Los Alamos Site Office; the U.S. EPA, Region 6; and the EP 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.

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6.2 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.

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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.

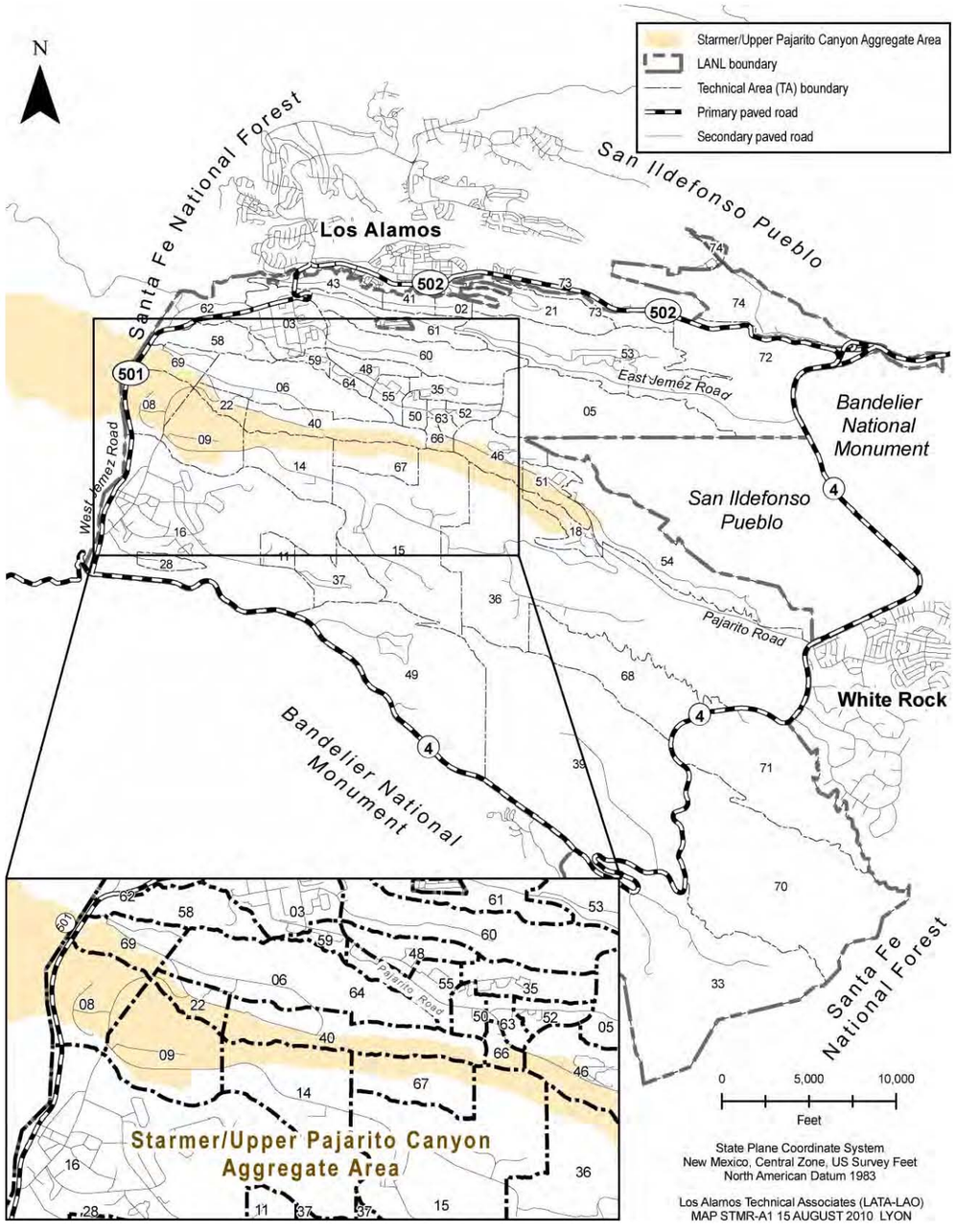


Figure 1.0-1 Location of Starmer/Upper Pajarito Canyon Aggregate Area with respect to Laboratory technical areas

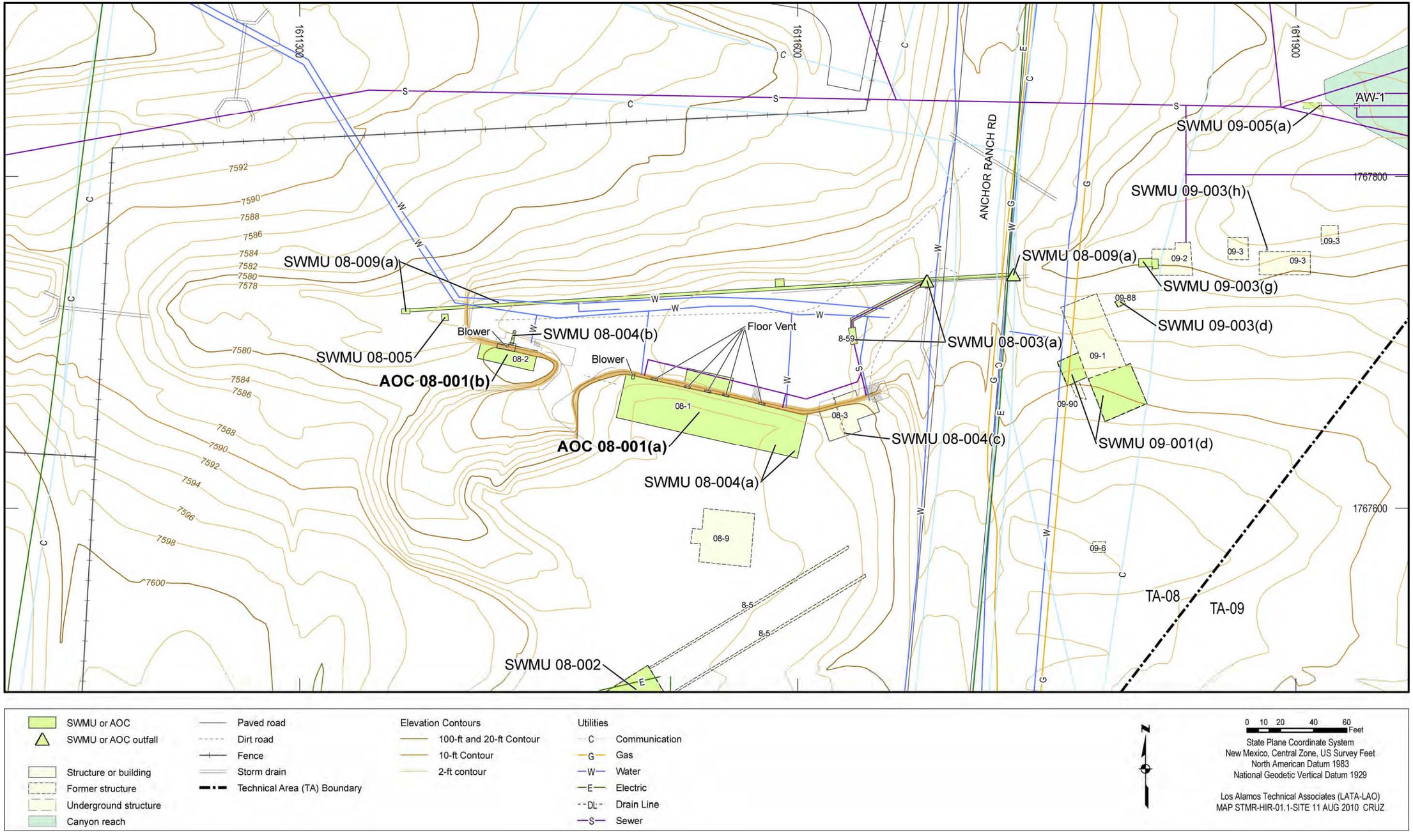


Figure 2.1-1 Site features of AOCs 08-001(a) and 08-001(b)

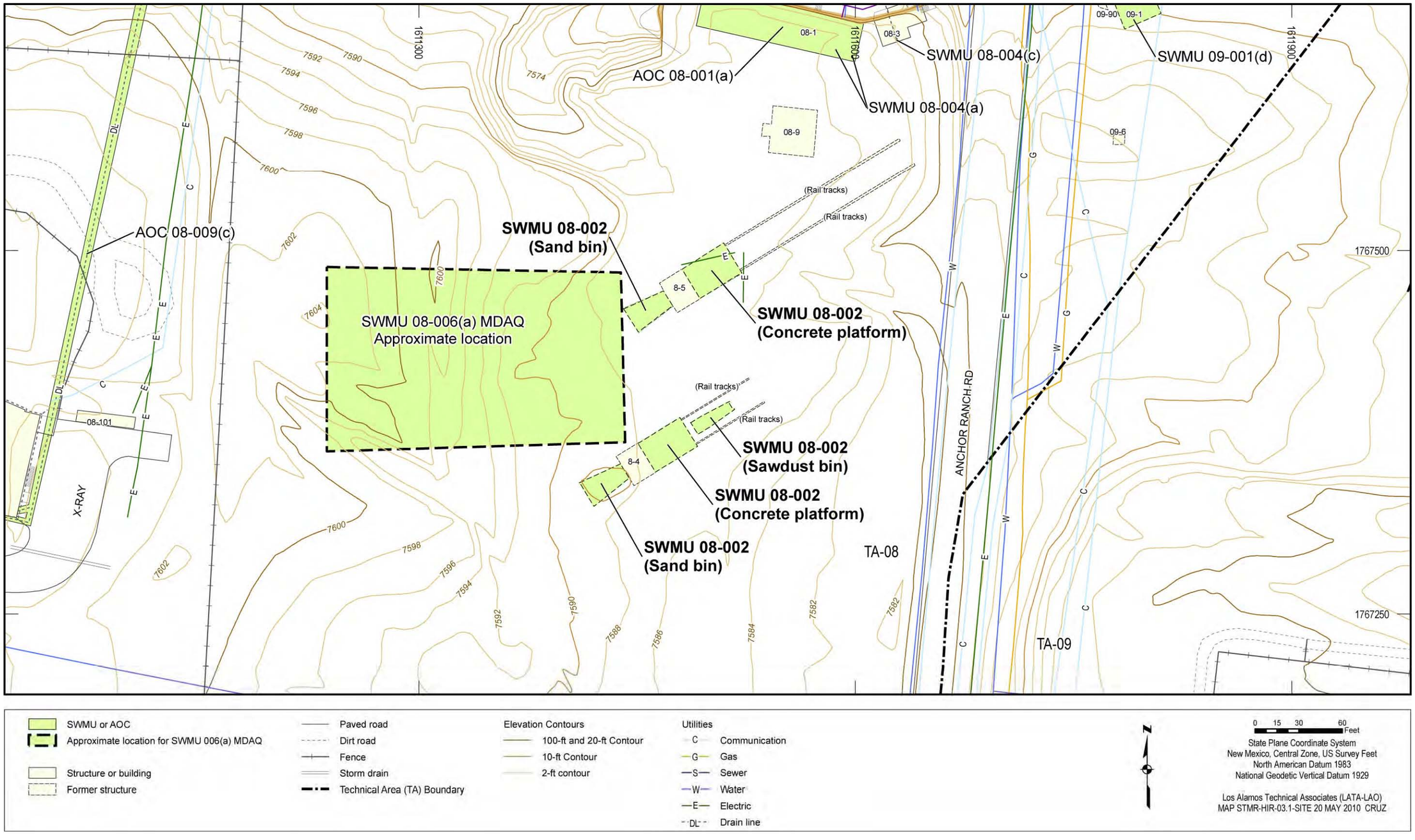


Figure 2.3-1 Site features of SWMU 08-002

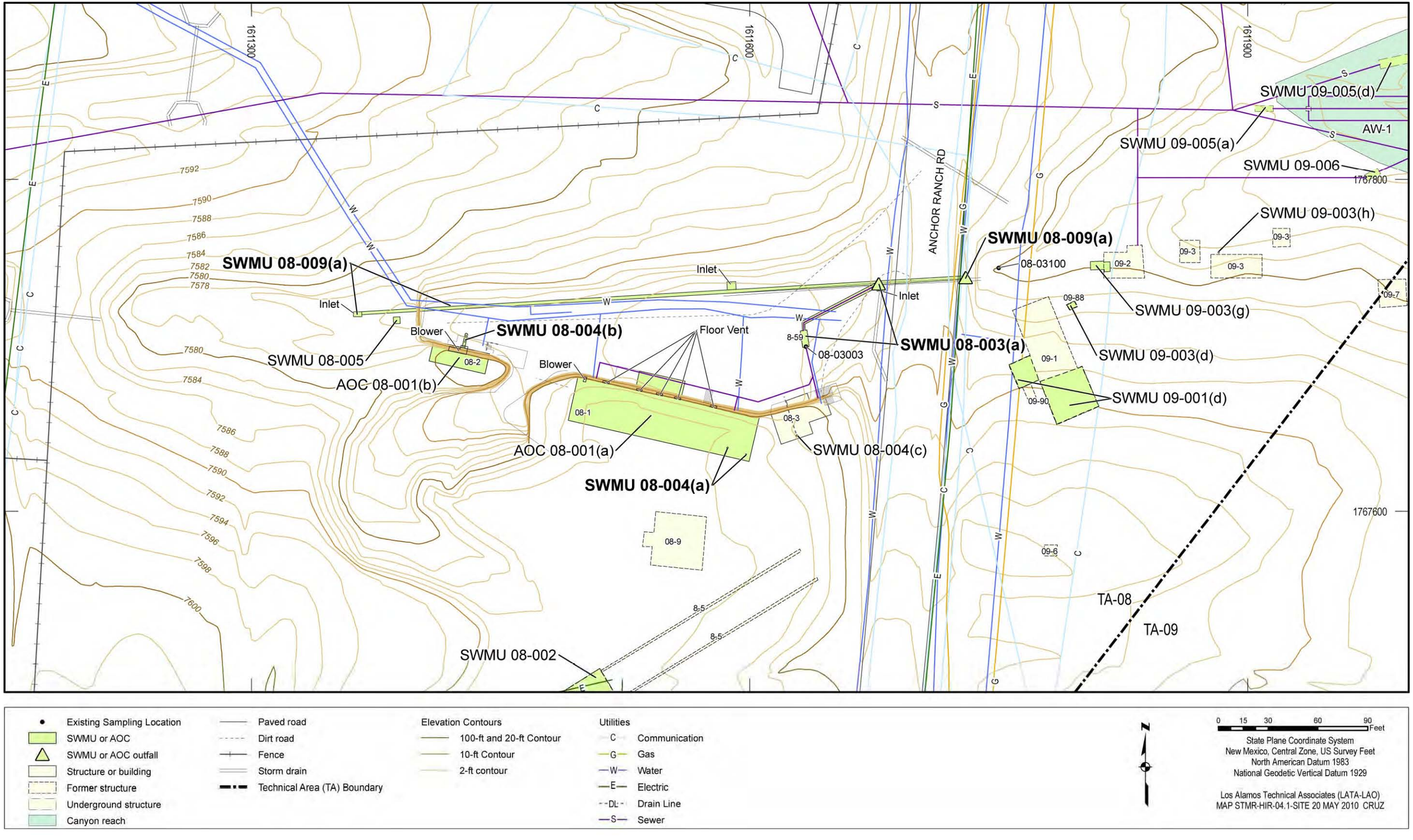


Figure 2.4-1 Site features of Consolidated Unit 08-003(a)-00 [SWMUs 08-003(a), 08-004(a), 08-004(b), and 08-009(a)]

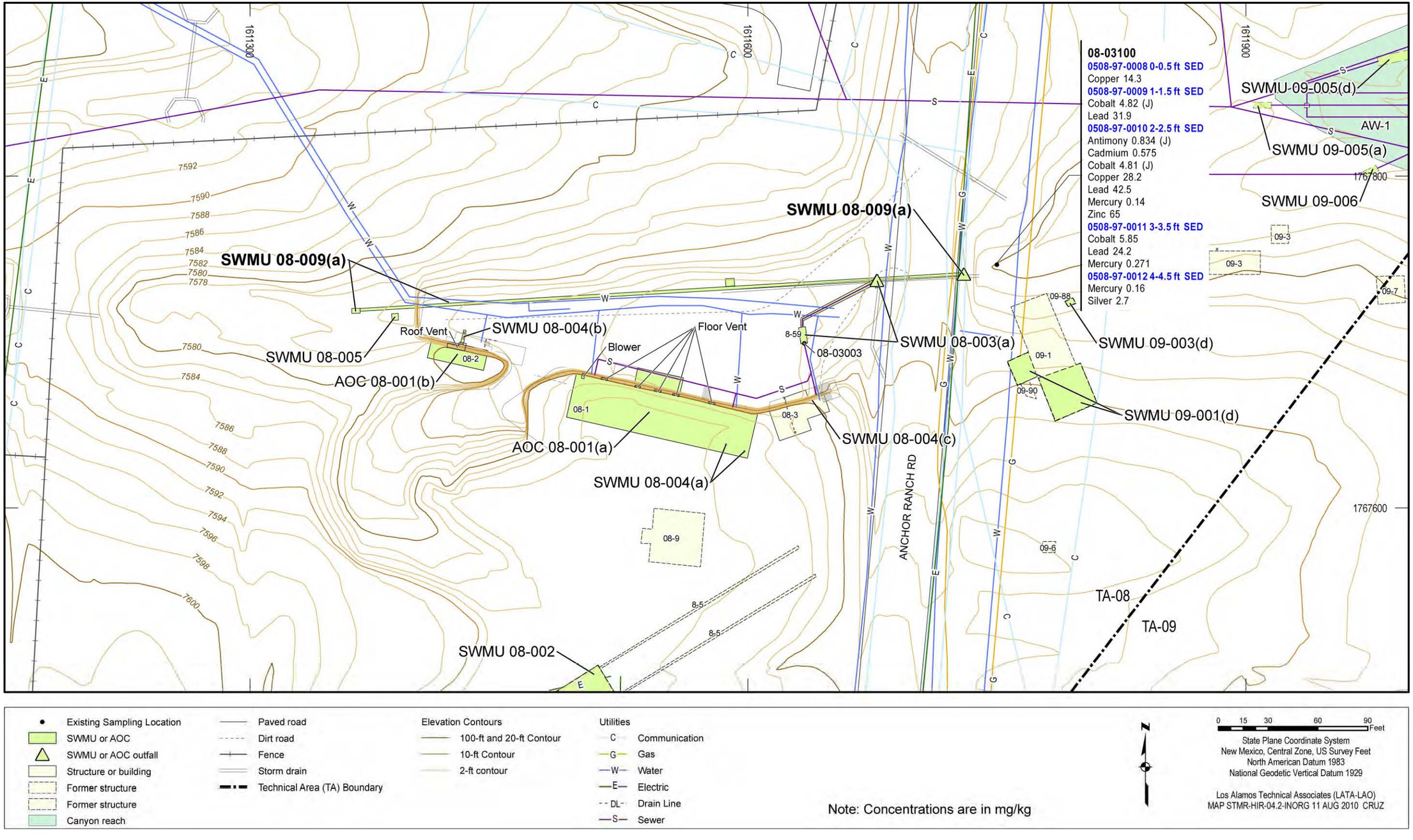


Figure 2.4-2 Inorganic chemicals detected above BVs at SWMU 08-009(a)

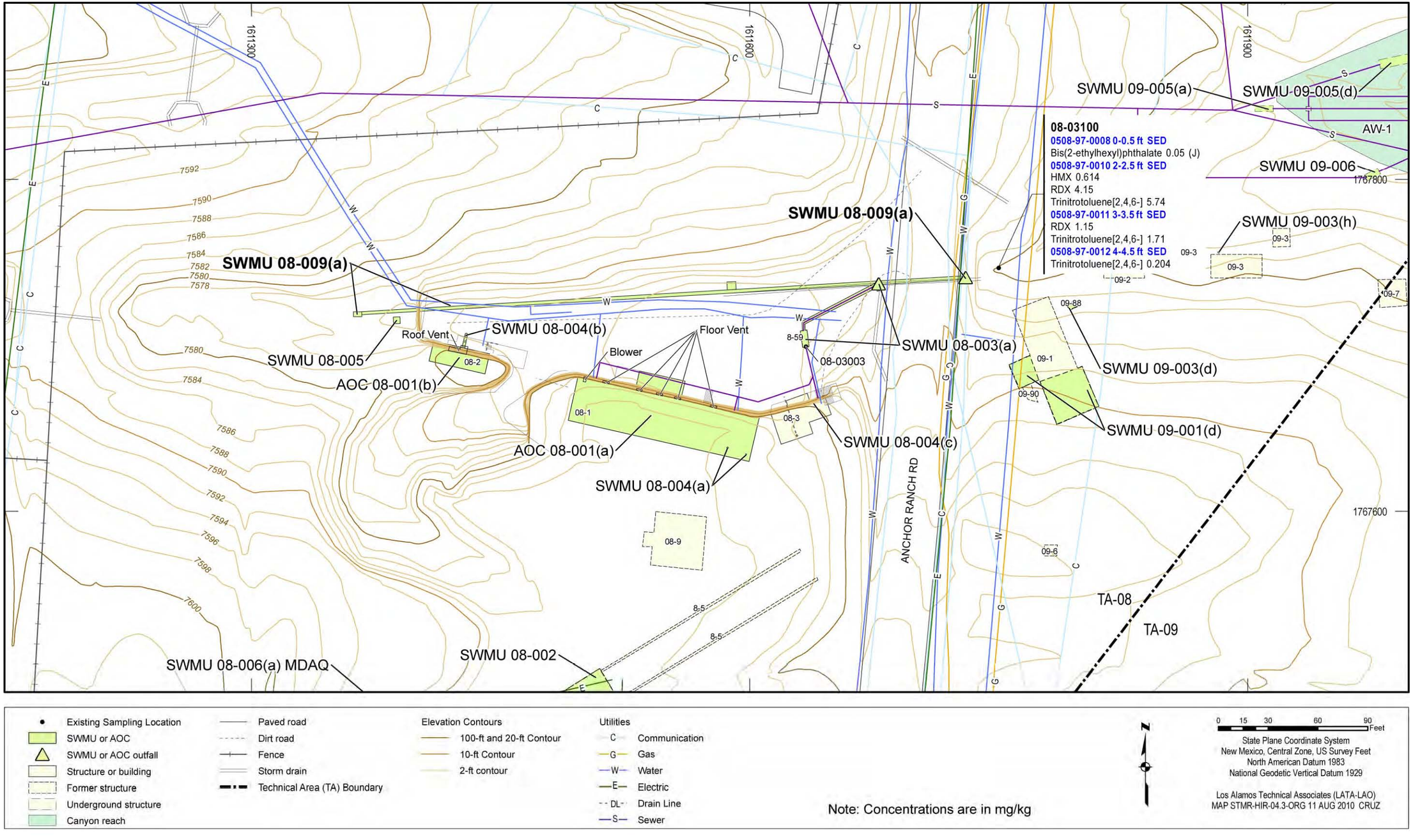


Figure 2.4-3 Organic chemicals detected at SWMU 08-009(a)

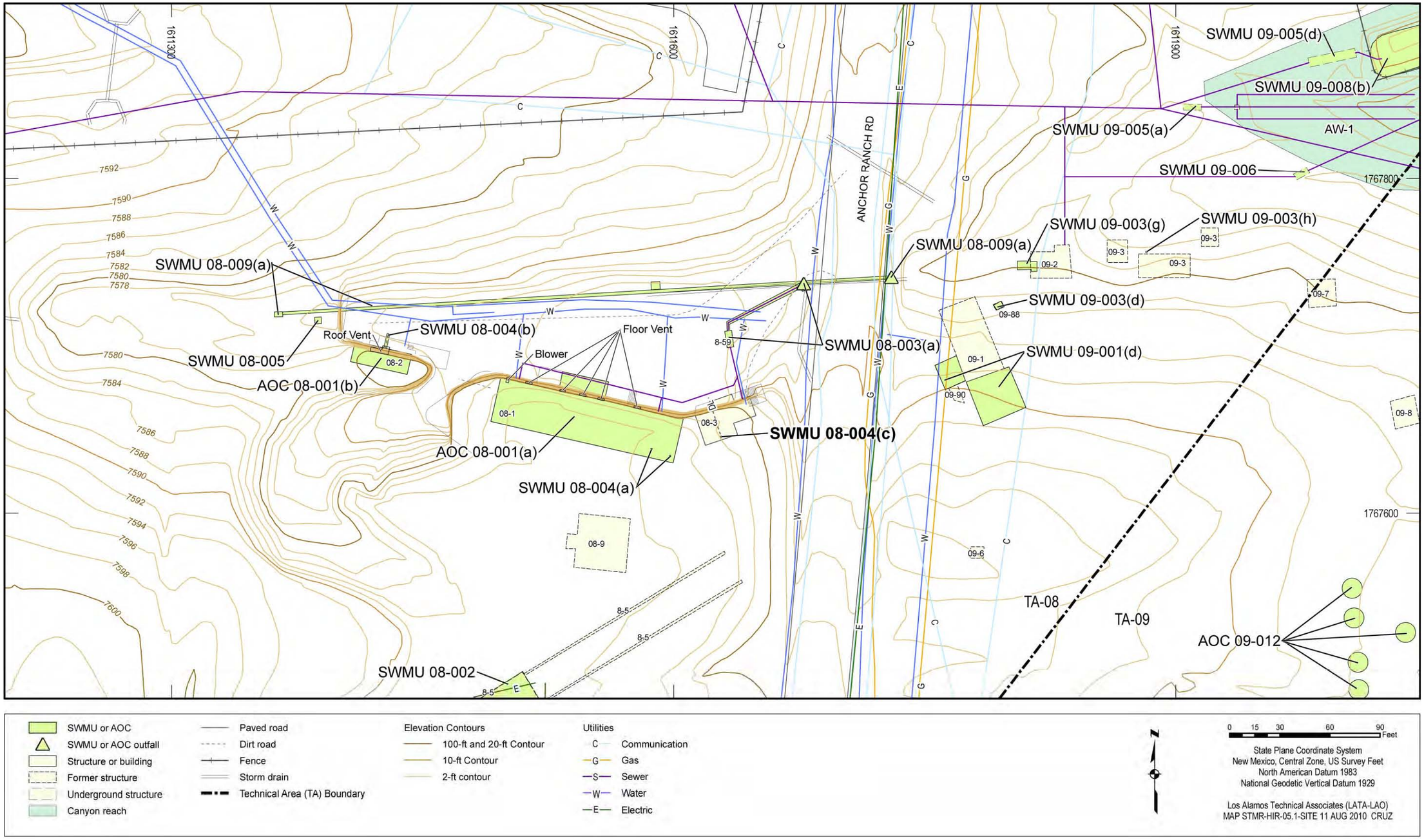


Figure 2.5-1 Site features of SWMU 08-004(c)

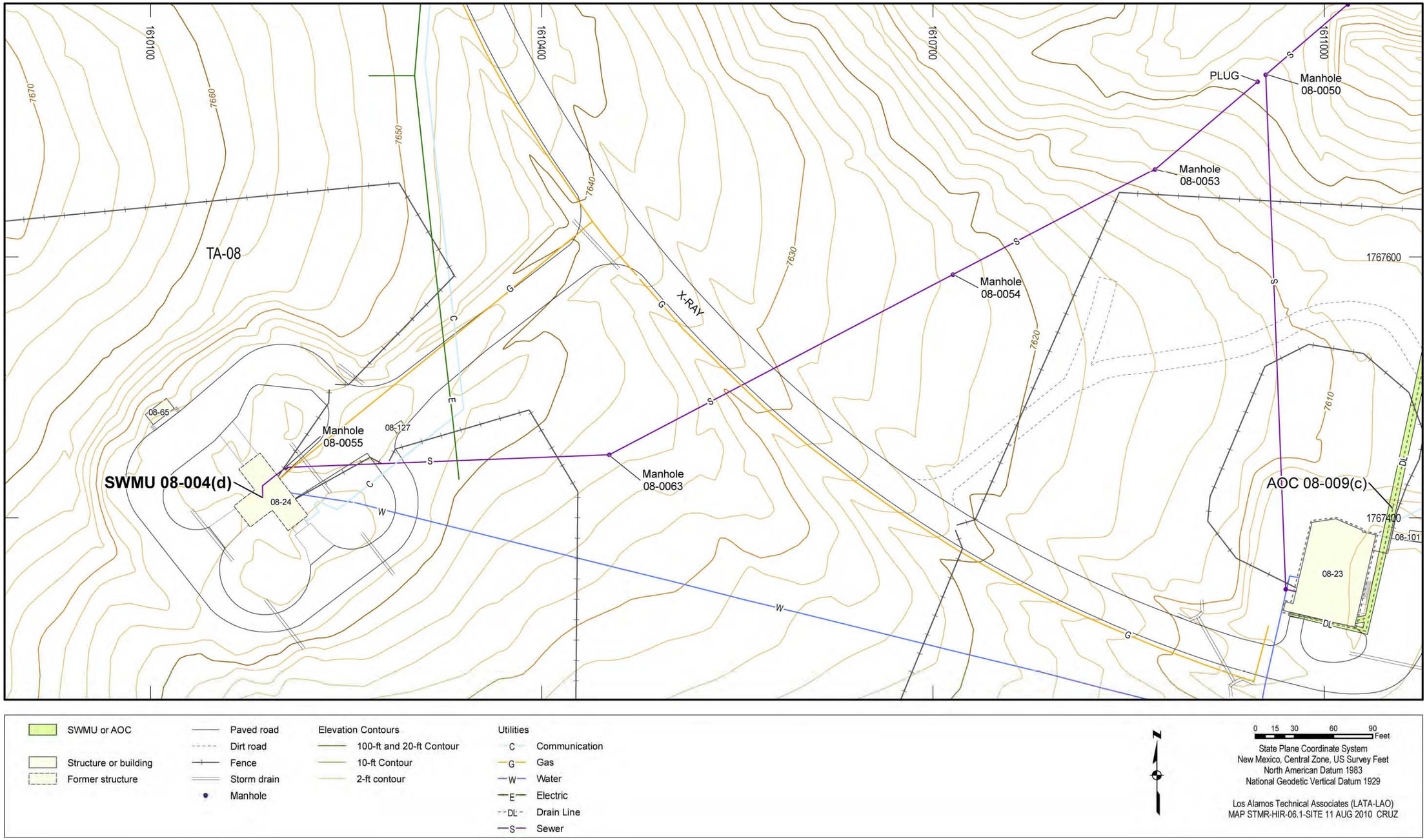


Figure 2.6-1 Site features of SWMU 08-004(d)

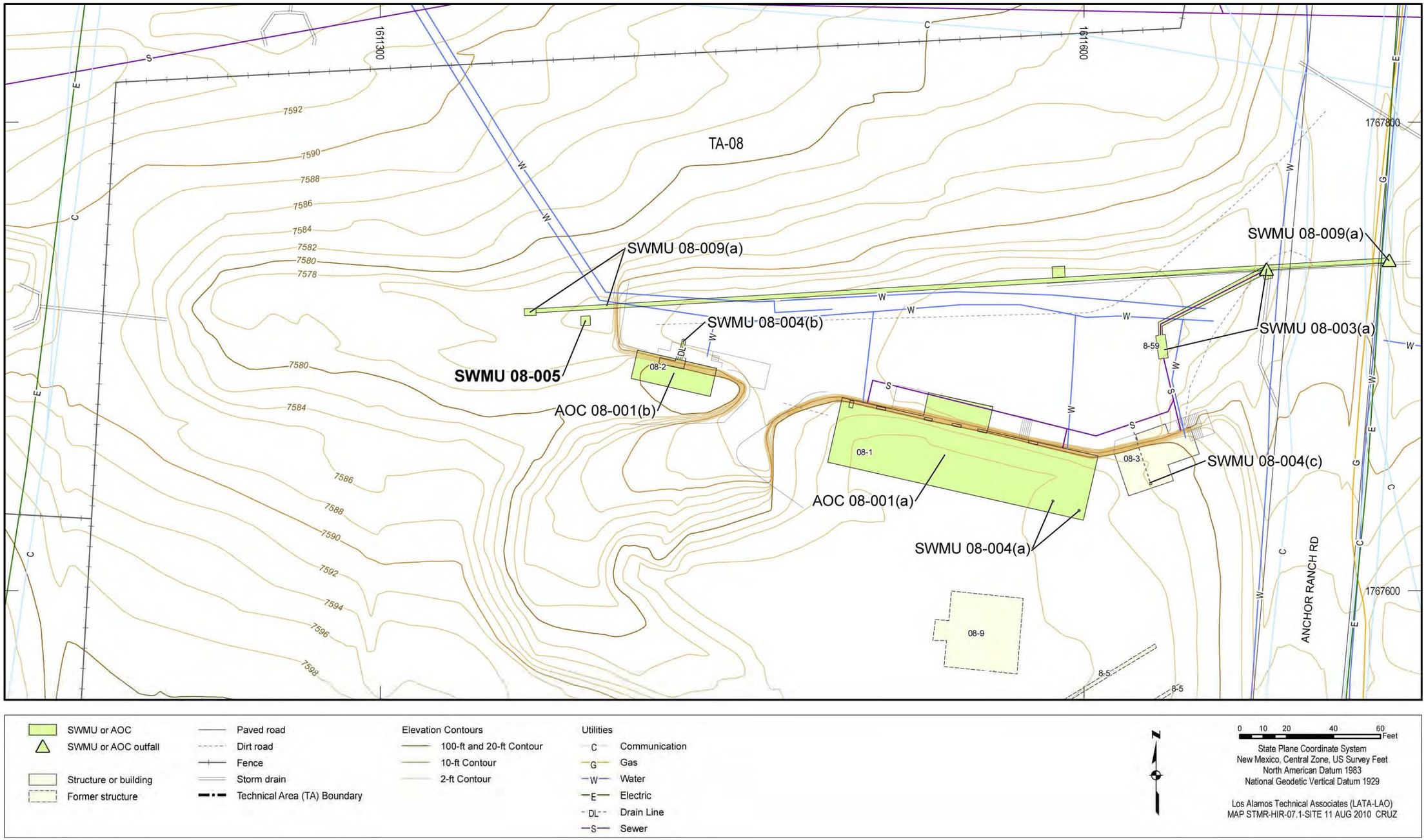


Figure 2.7-1 Site features of SWMU 08-005

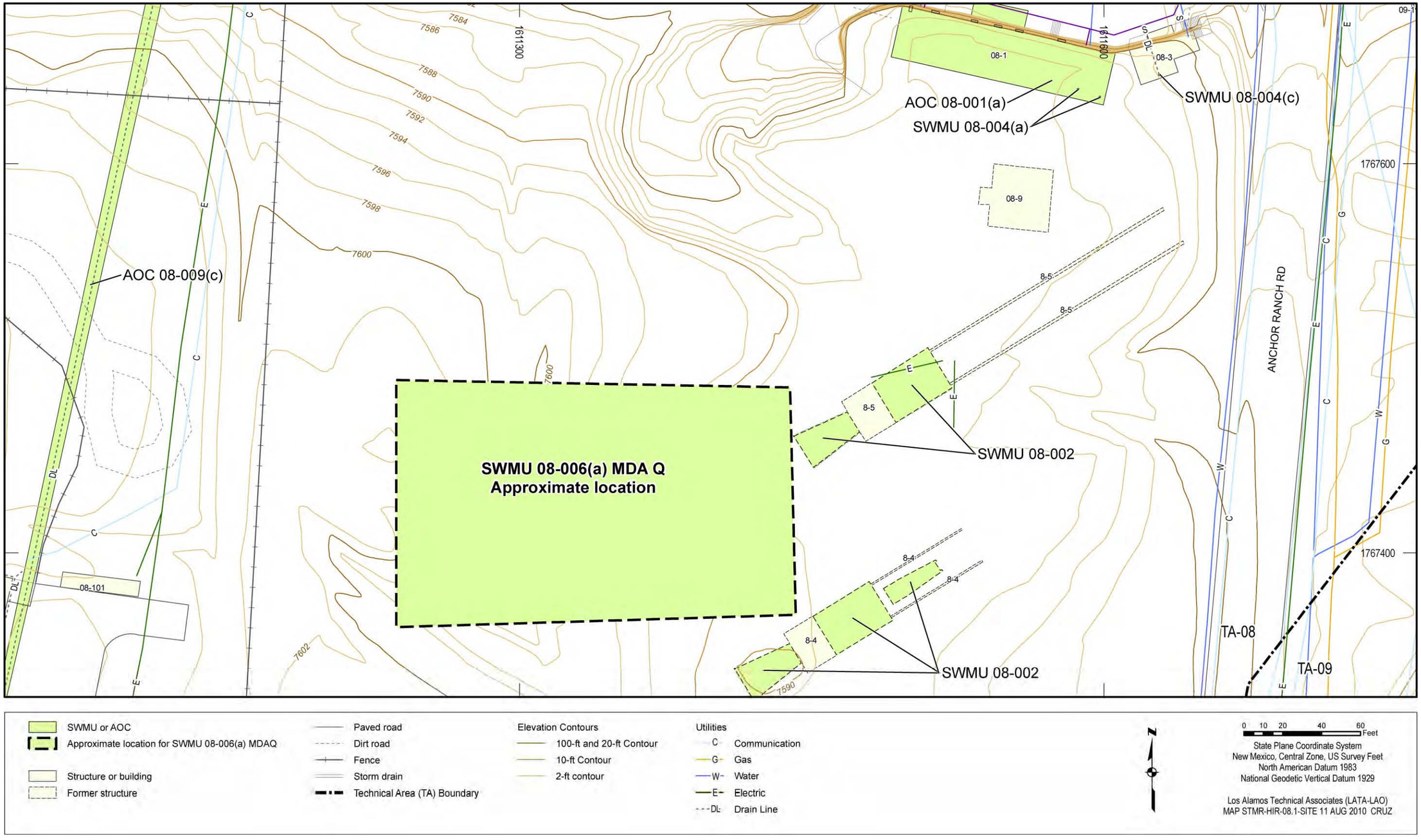


Figure 2.8-1 Site features of SWMU 08-006(a)

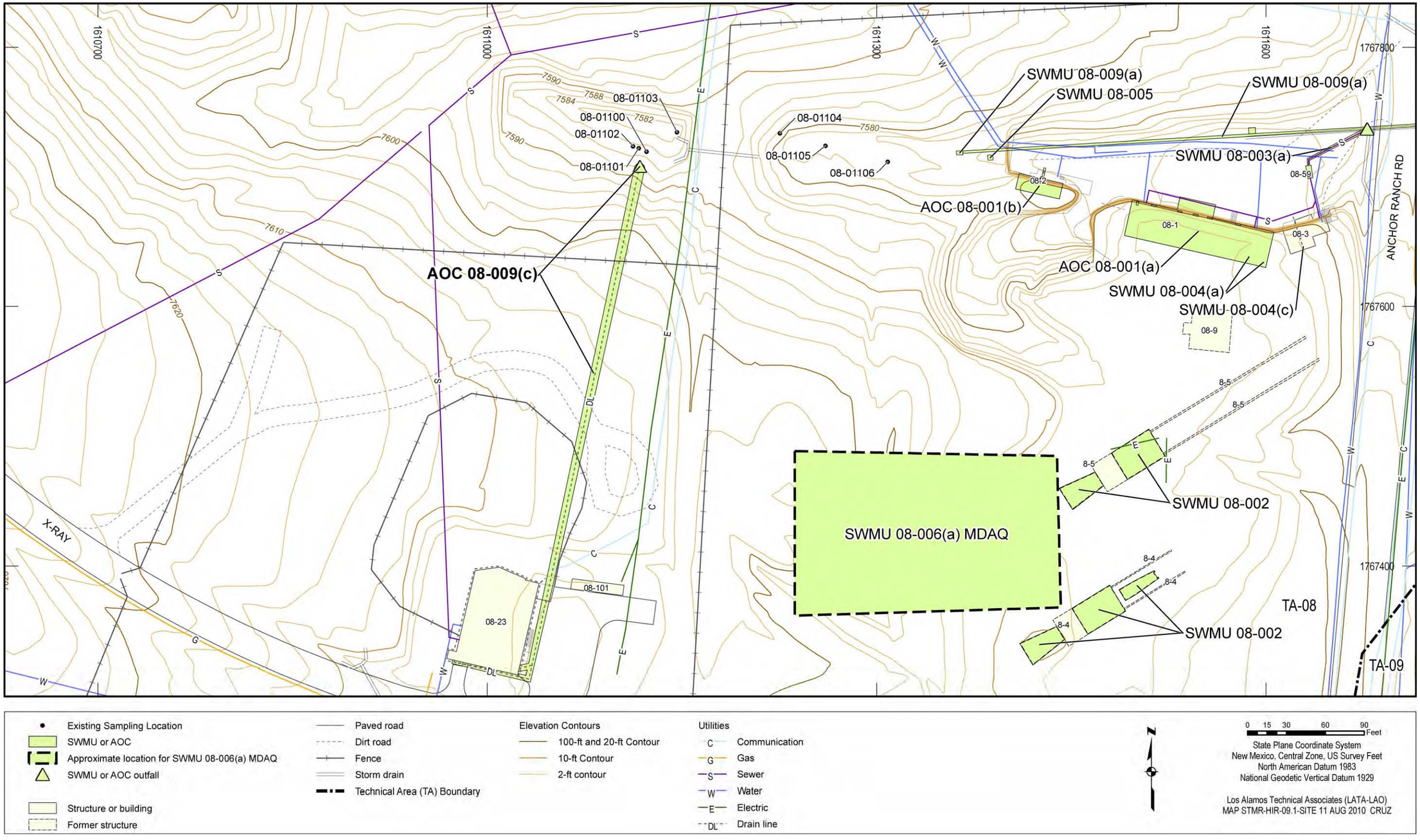


Figure 2.9-1 Site features of AOC 08-009(c)

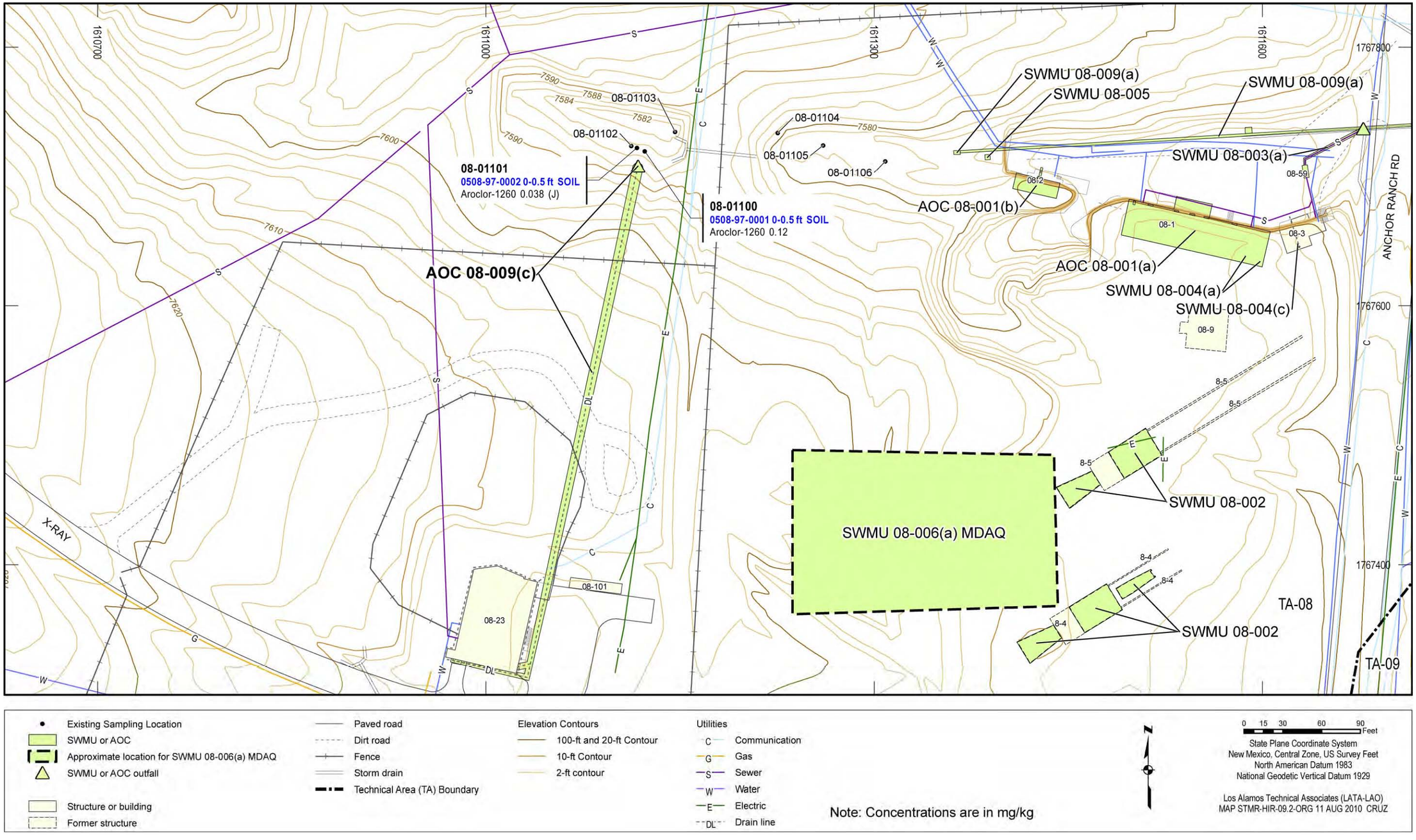


Figure 2.9-2 Organic chemicals detected at AOC 08-009(c)

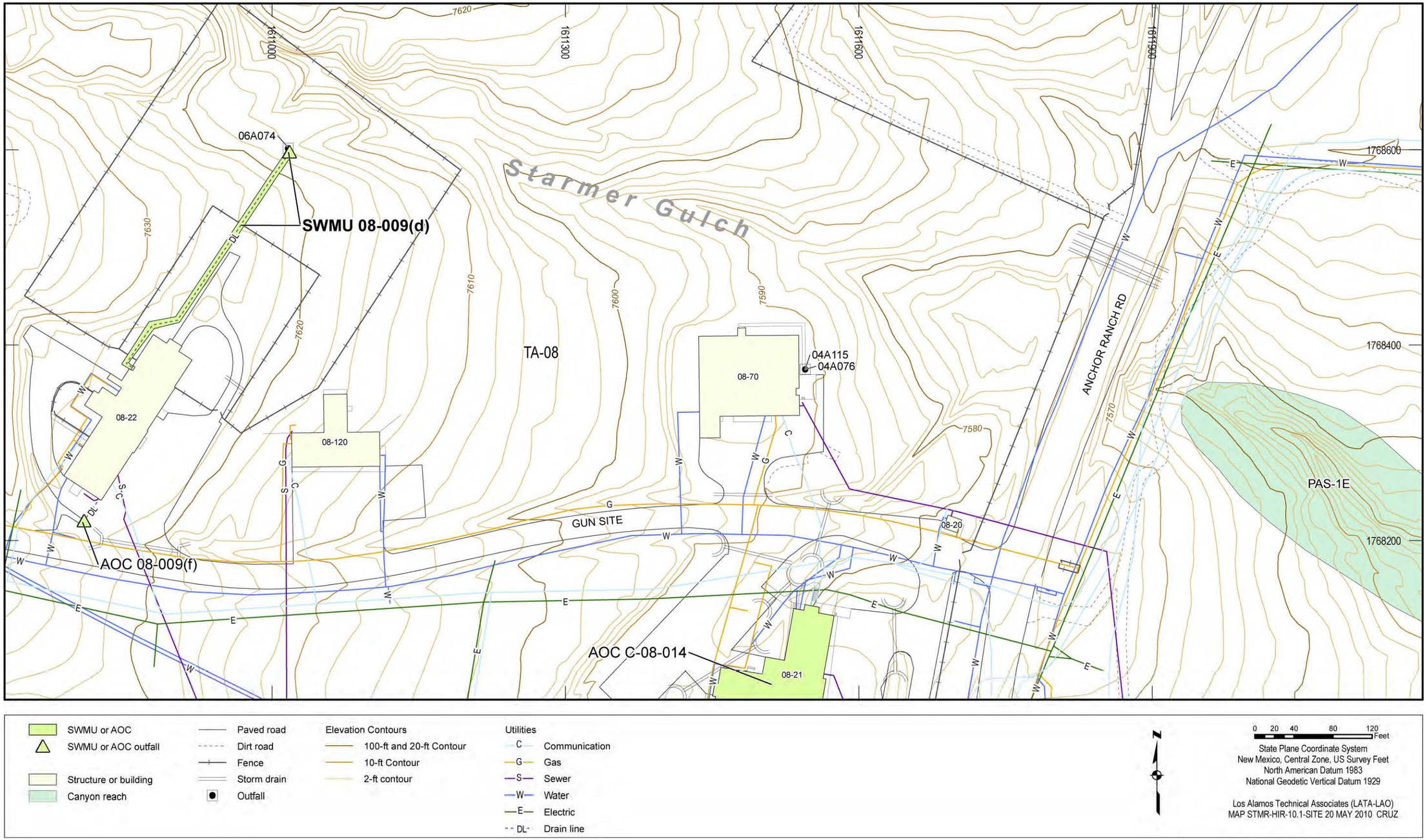


Figure 2.10-1 Site features of SWMU 08-009(d)

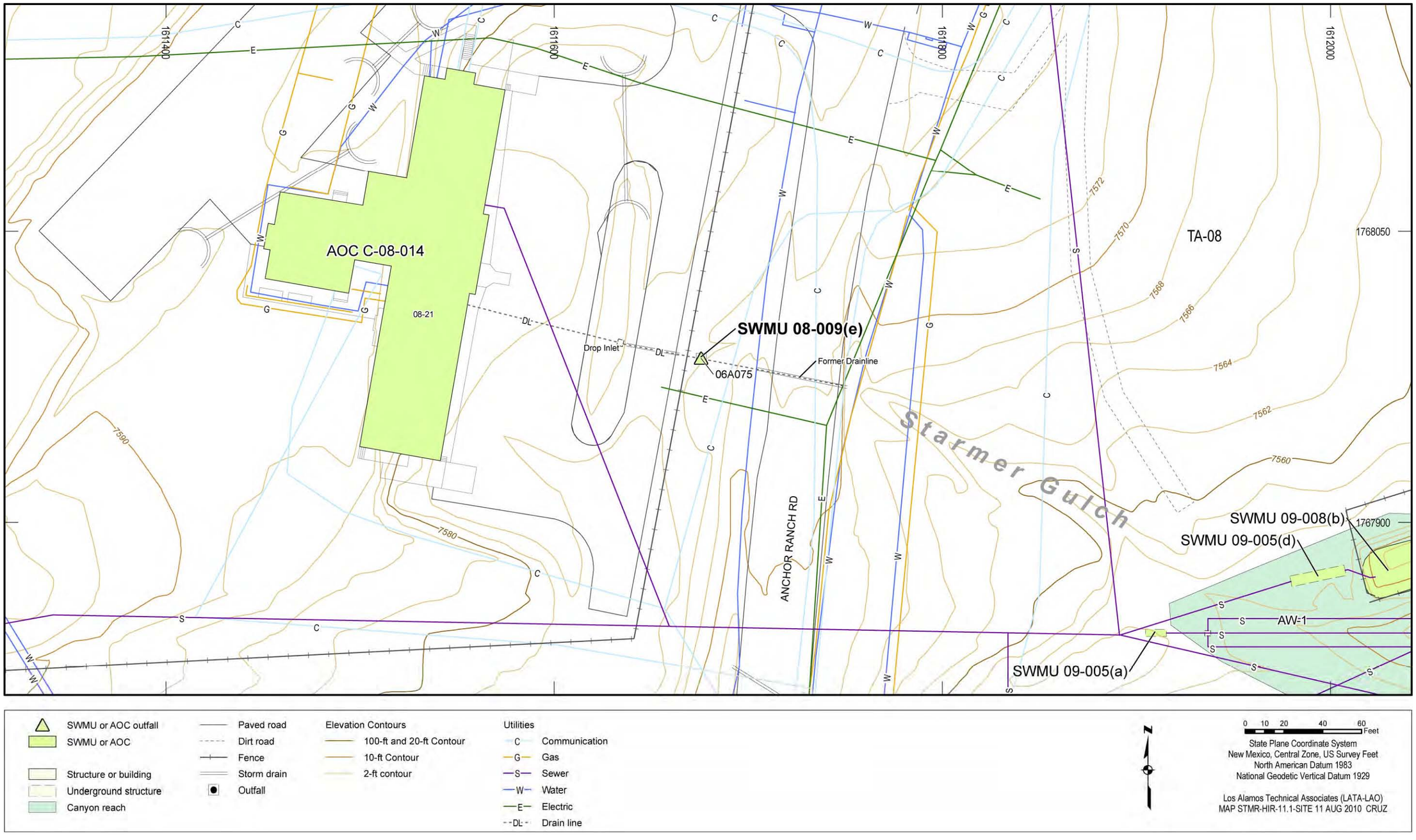


Figure 2.11-1 Site features of SWMU 08-009(e)

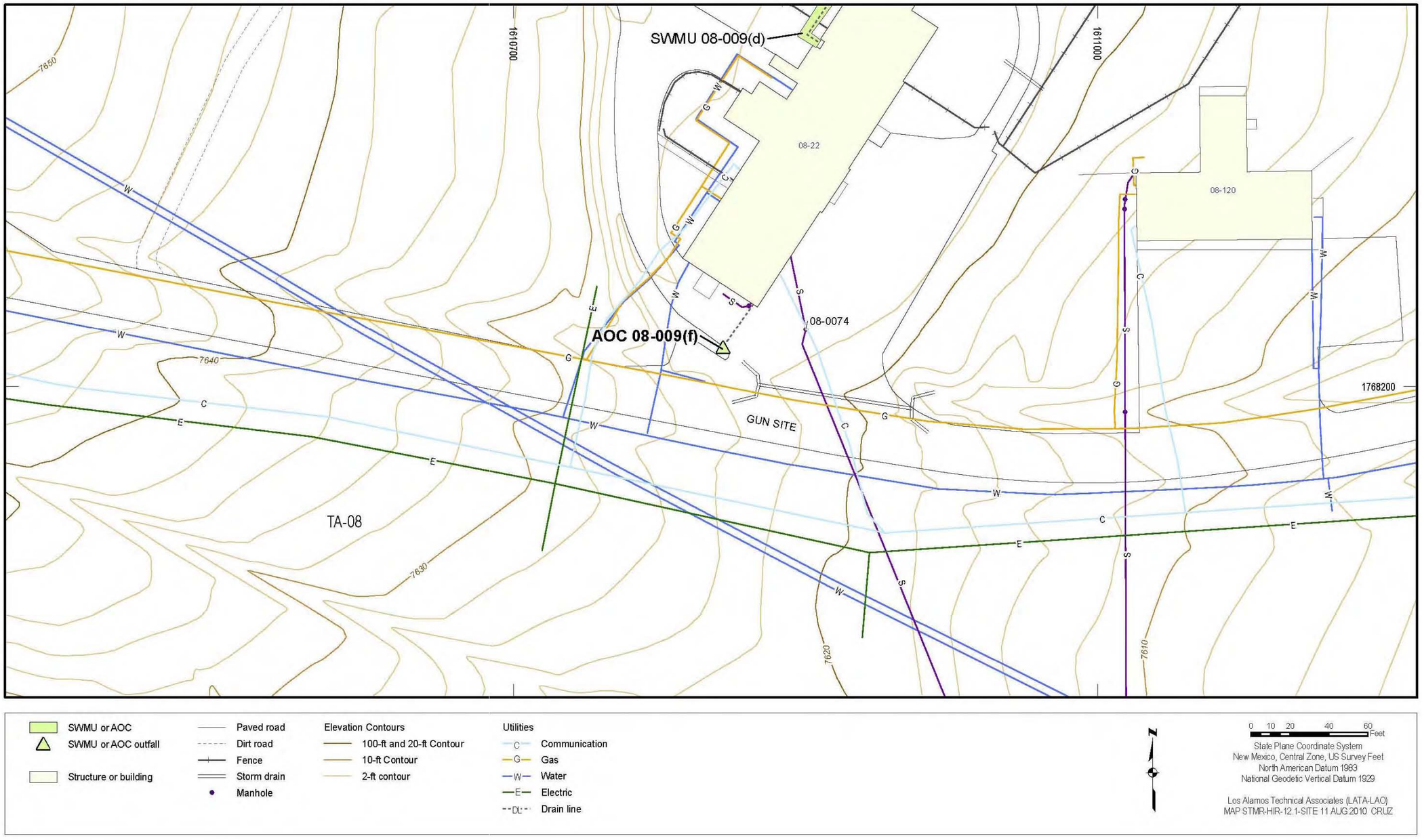


Figure 2.12-1 Site features of AOC 08-009(f)

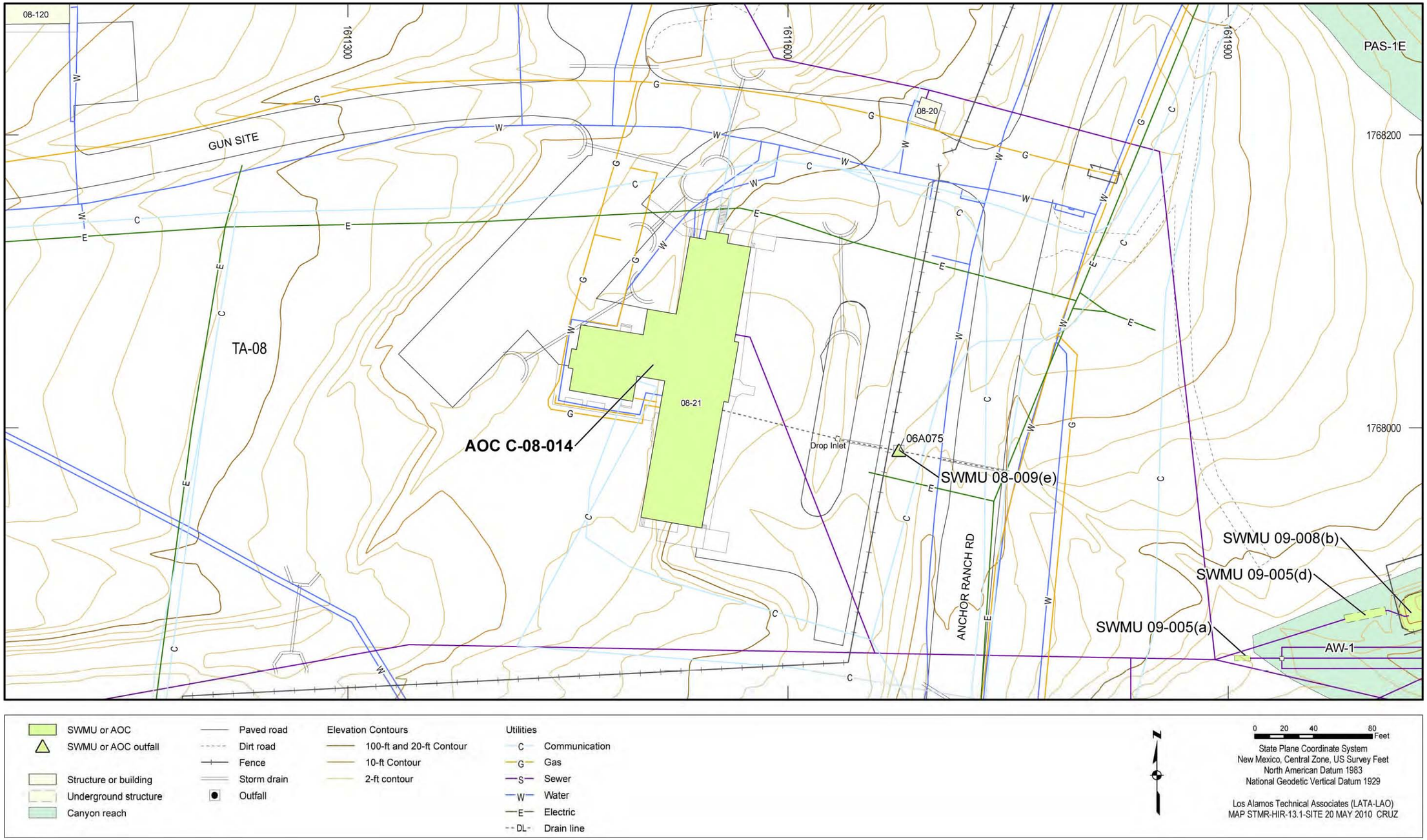


Figure 2.13-1 Site features of AOC C-08-014

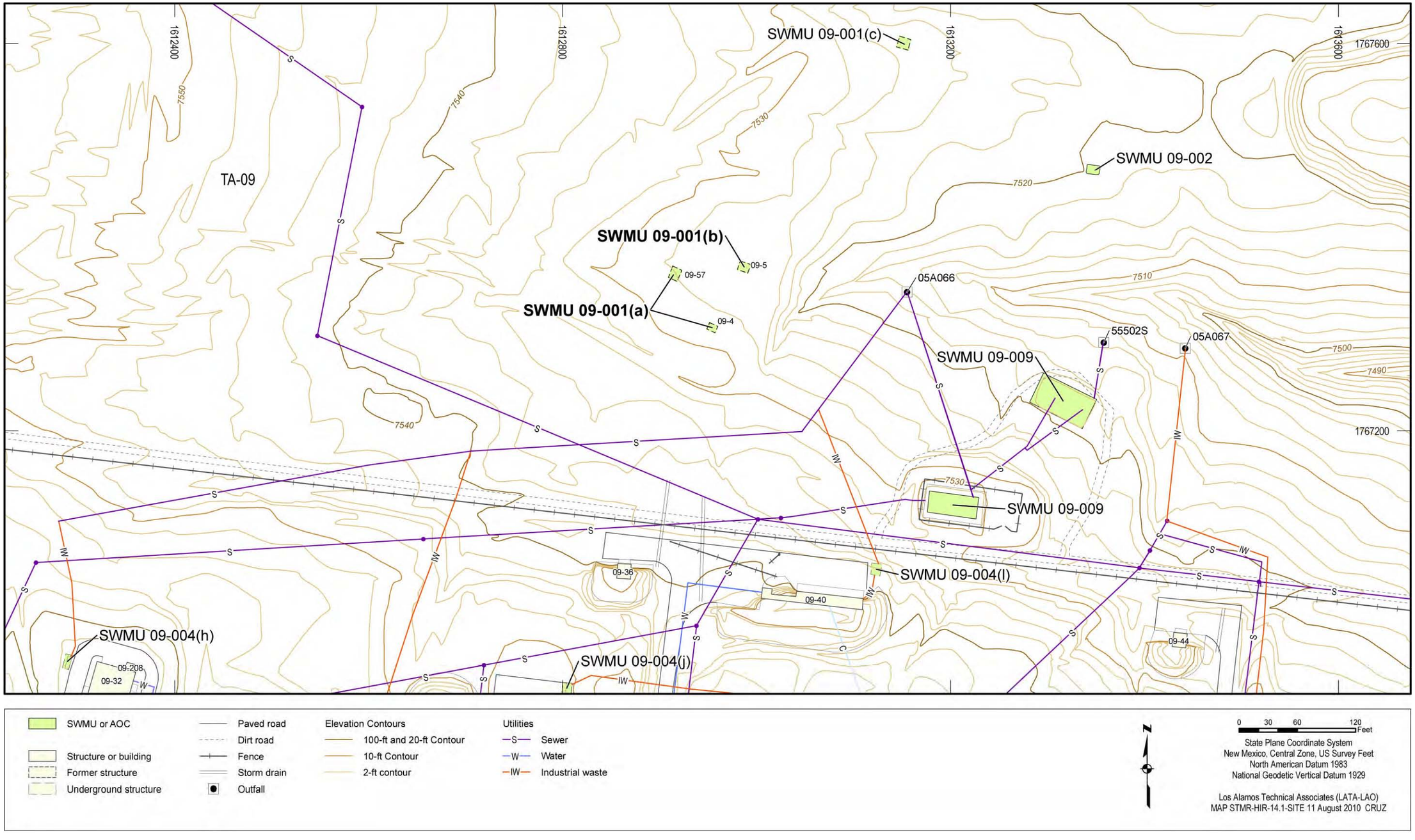


Figure 3.1-1 Site features of Consolidated Unit 09-001(a)-99 [SWMUs 09-001(a) and 09-001(b)]

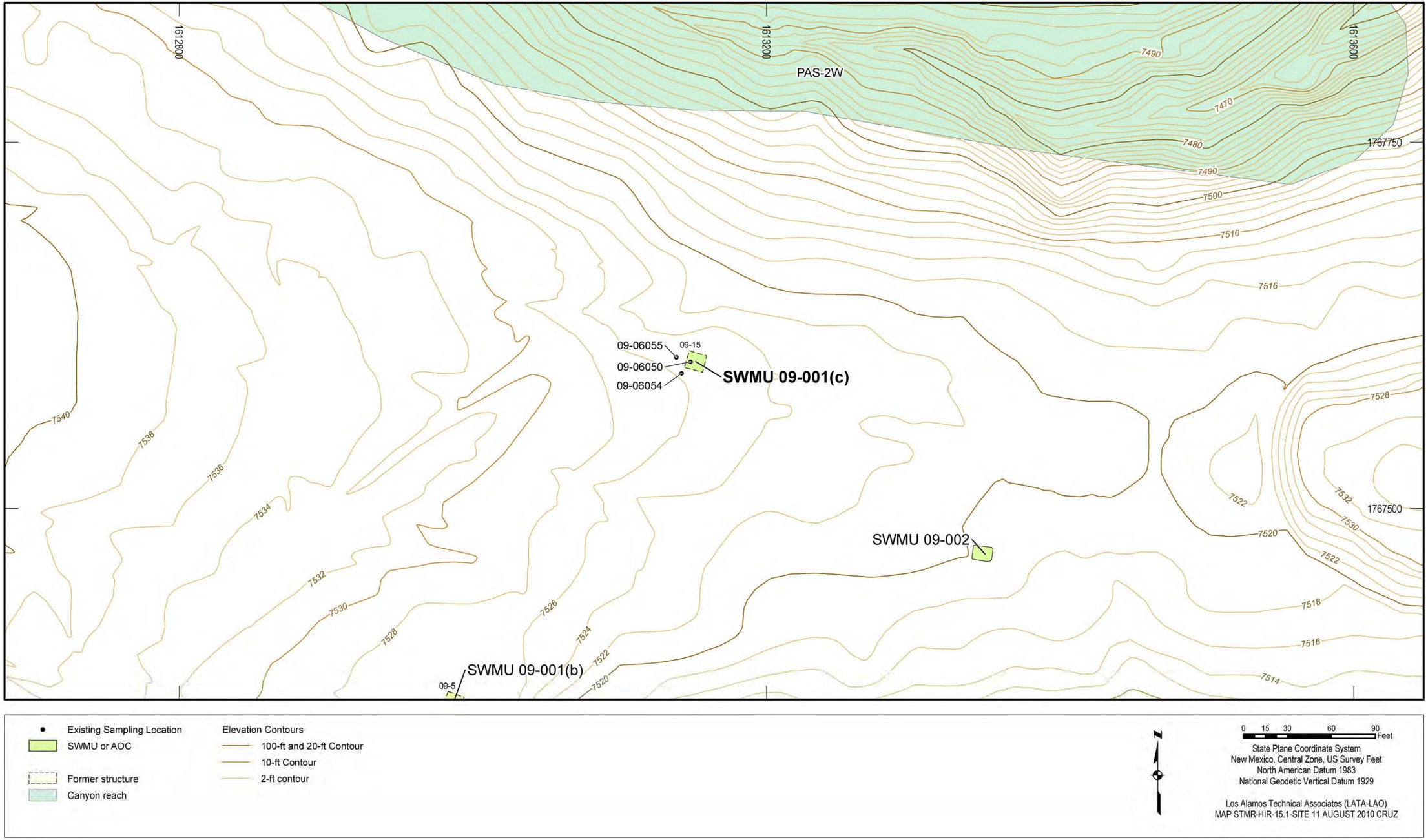


Figure 3.2-1 Site features of SWMU 09-001(c)

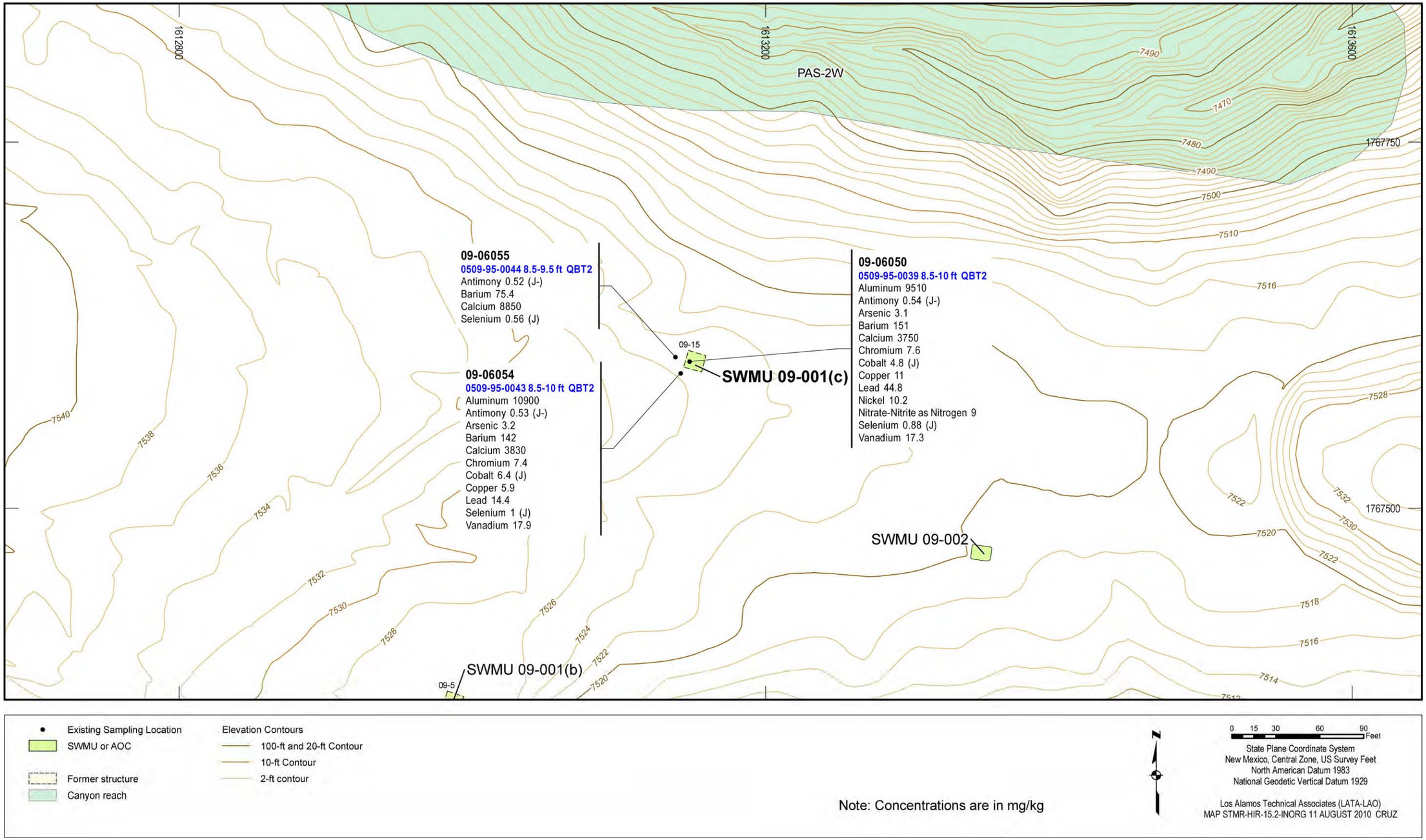


Figure 3.2-2 Inorganic chemicals detected above BVs at SWMU 09-001(c)

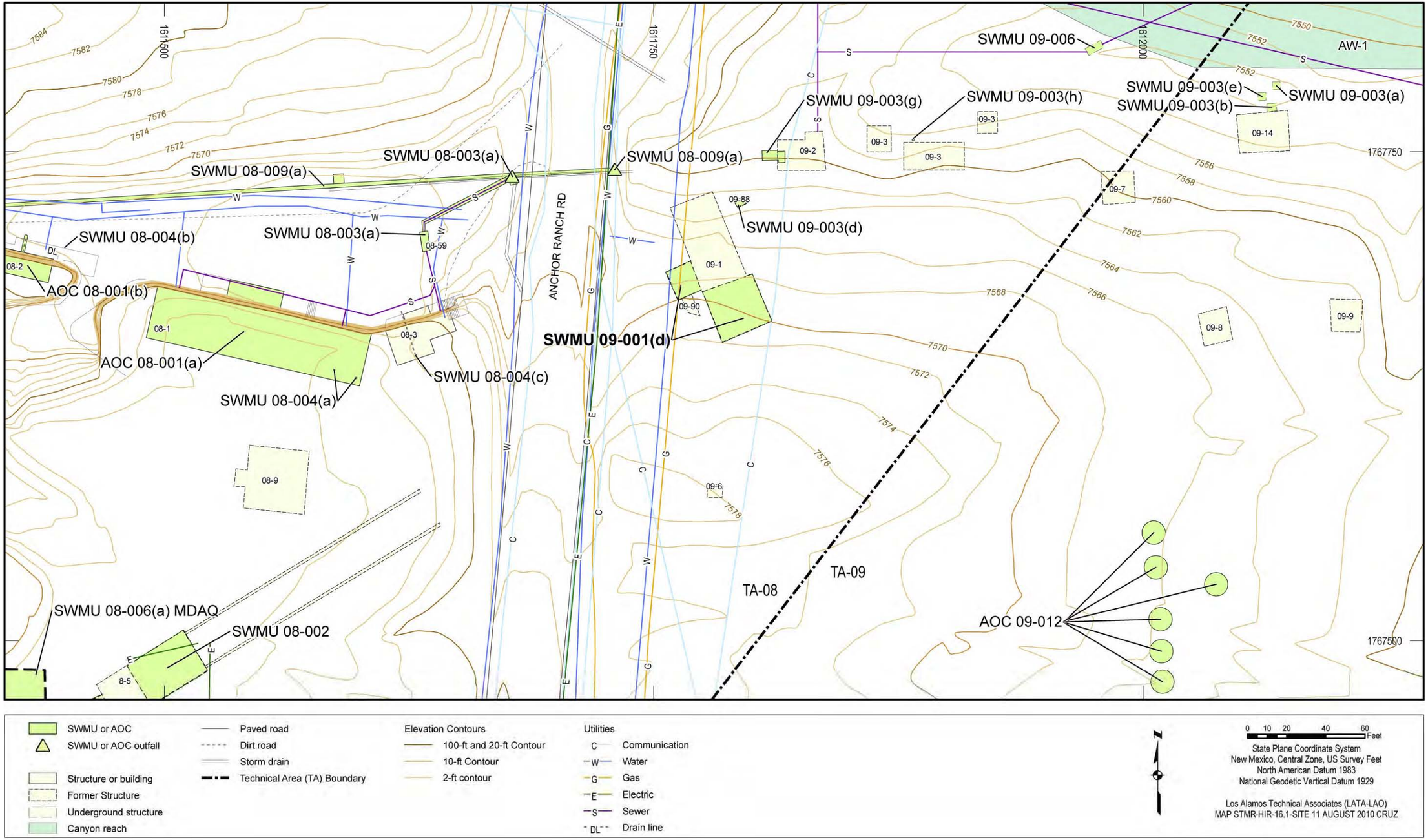


Figure 3.3-1 Site features of SWMU 09-001(d)

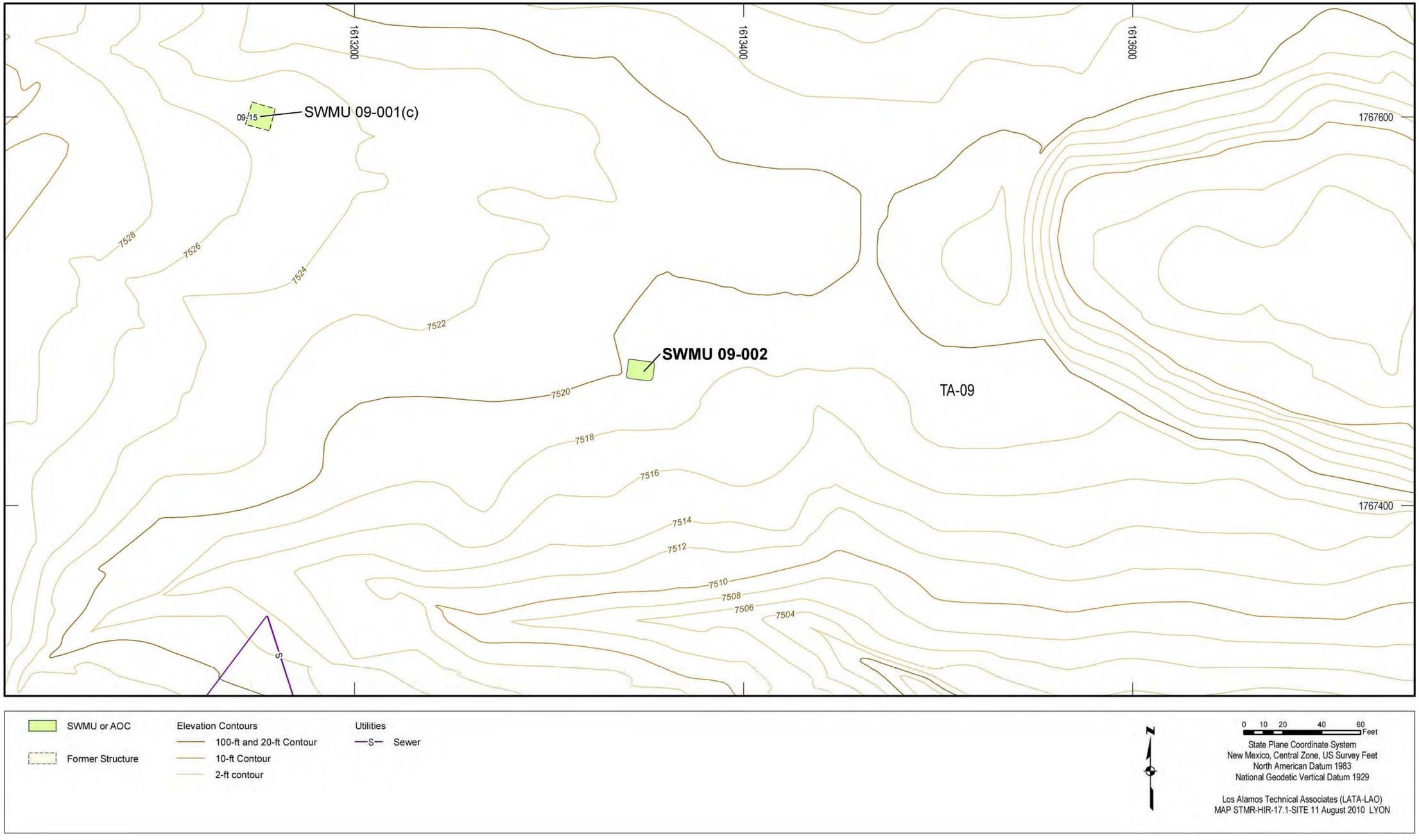


Figure 3.4-1 Site features of SWMU 09-002

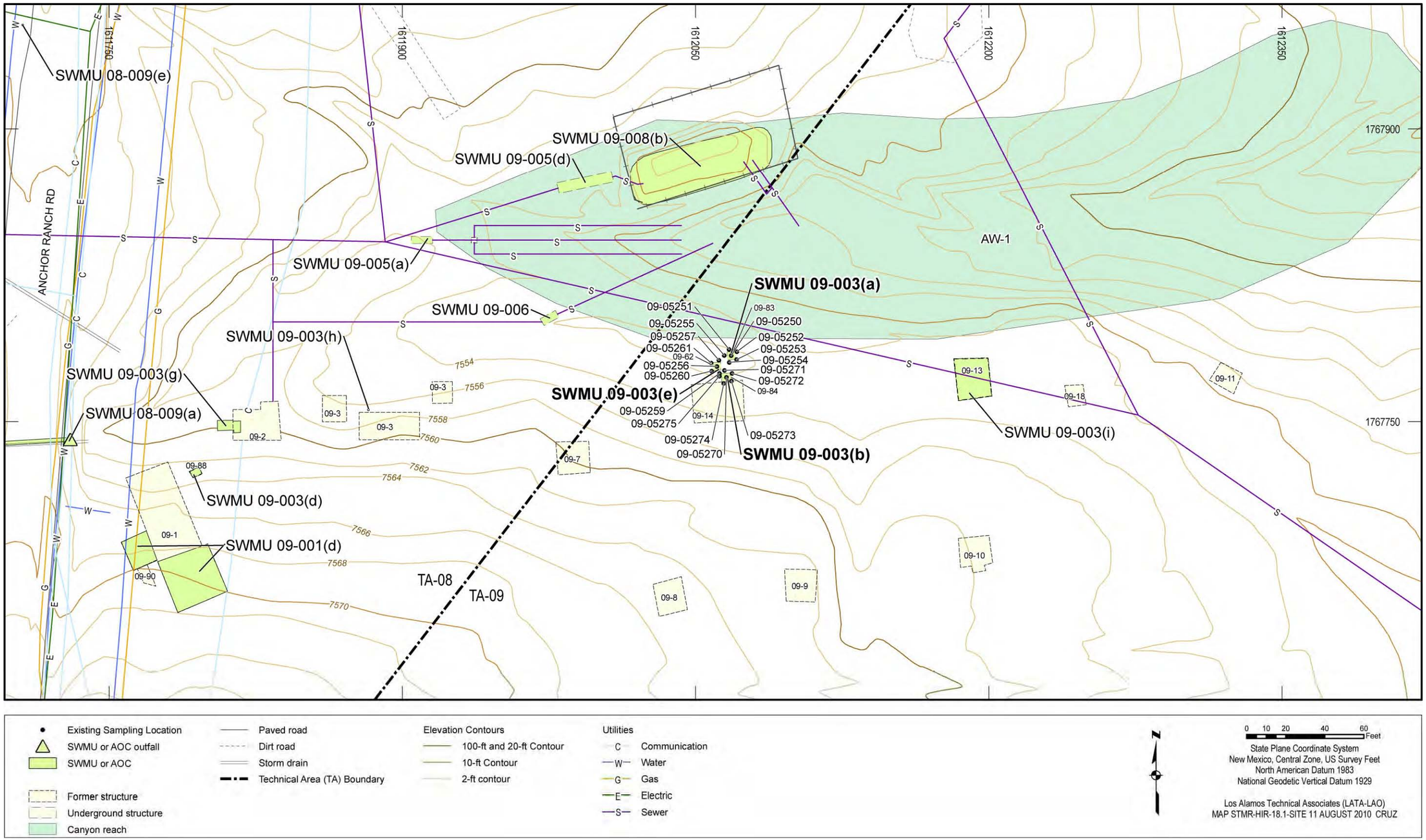


Figure 3.5-1 Site features of Consolidated Unit 09-003(a)-99 [SWMUs 09-003(a), 09-003(b), and 09-003(e)]

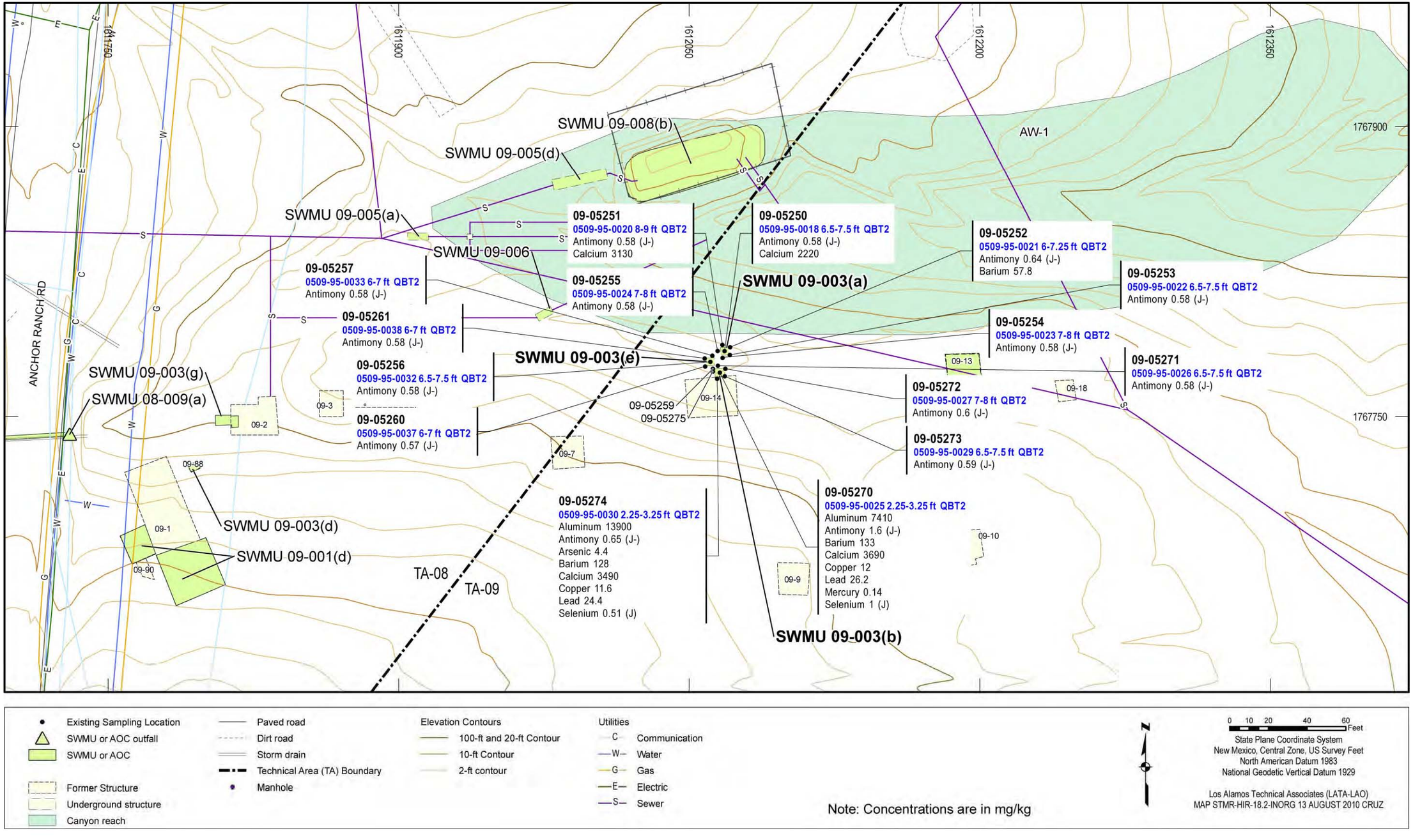


Figure 3.5-2 Inorganic chemicals detected above BVs at Consolidated Unit 09-003(a)-99 [SWMUs 09-003(a), 09-003(b), and 09-003(e)]

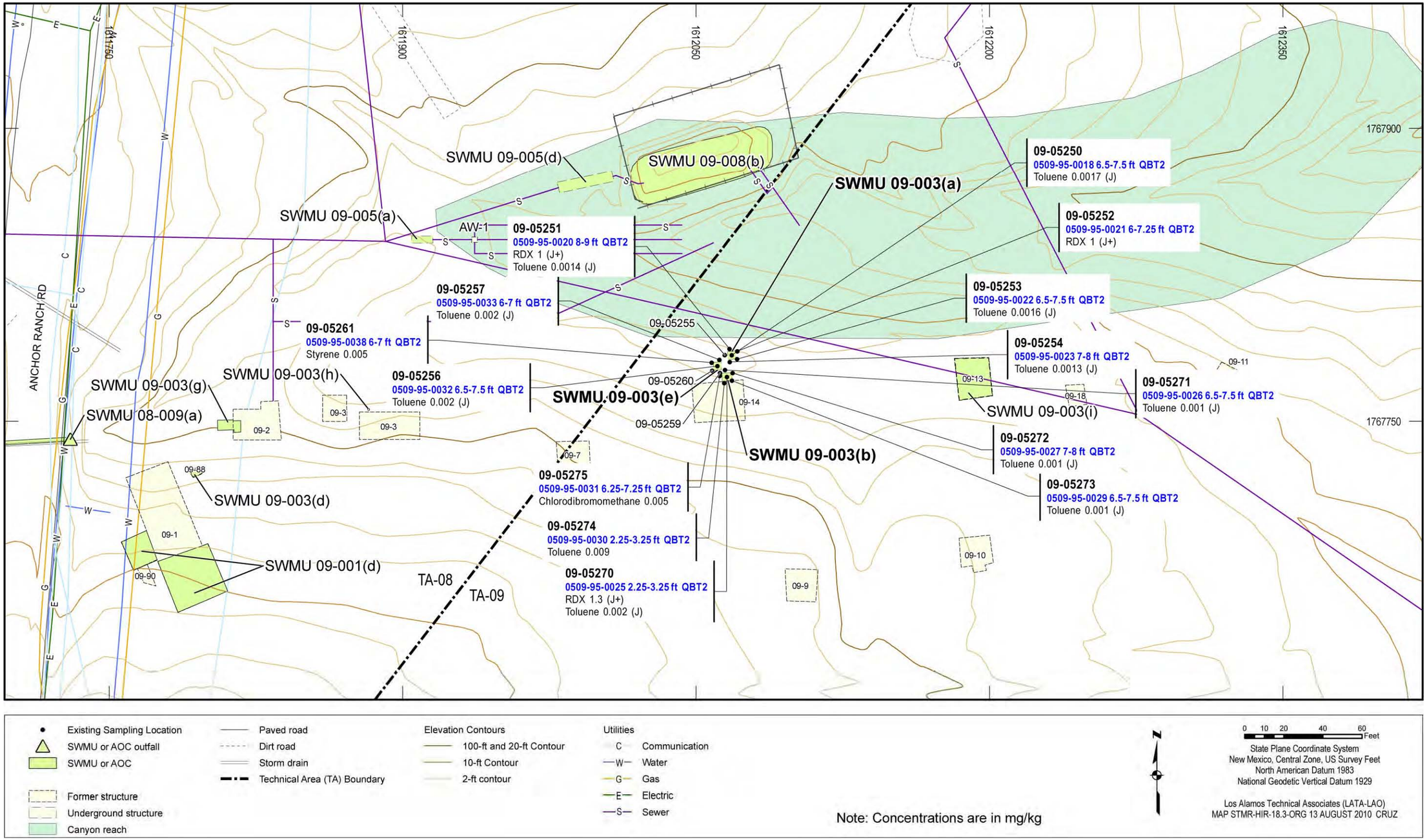


Figure 3.5-3 Organic chemicals detected at Consolidated Unit 09-003(a)-99 [SWMUs 09-003(a), 09-003(b), and 09-003(e)]

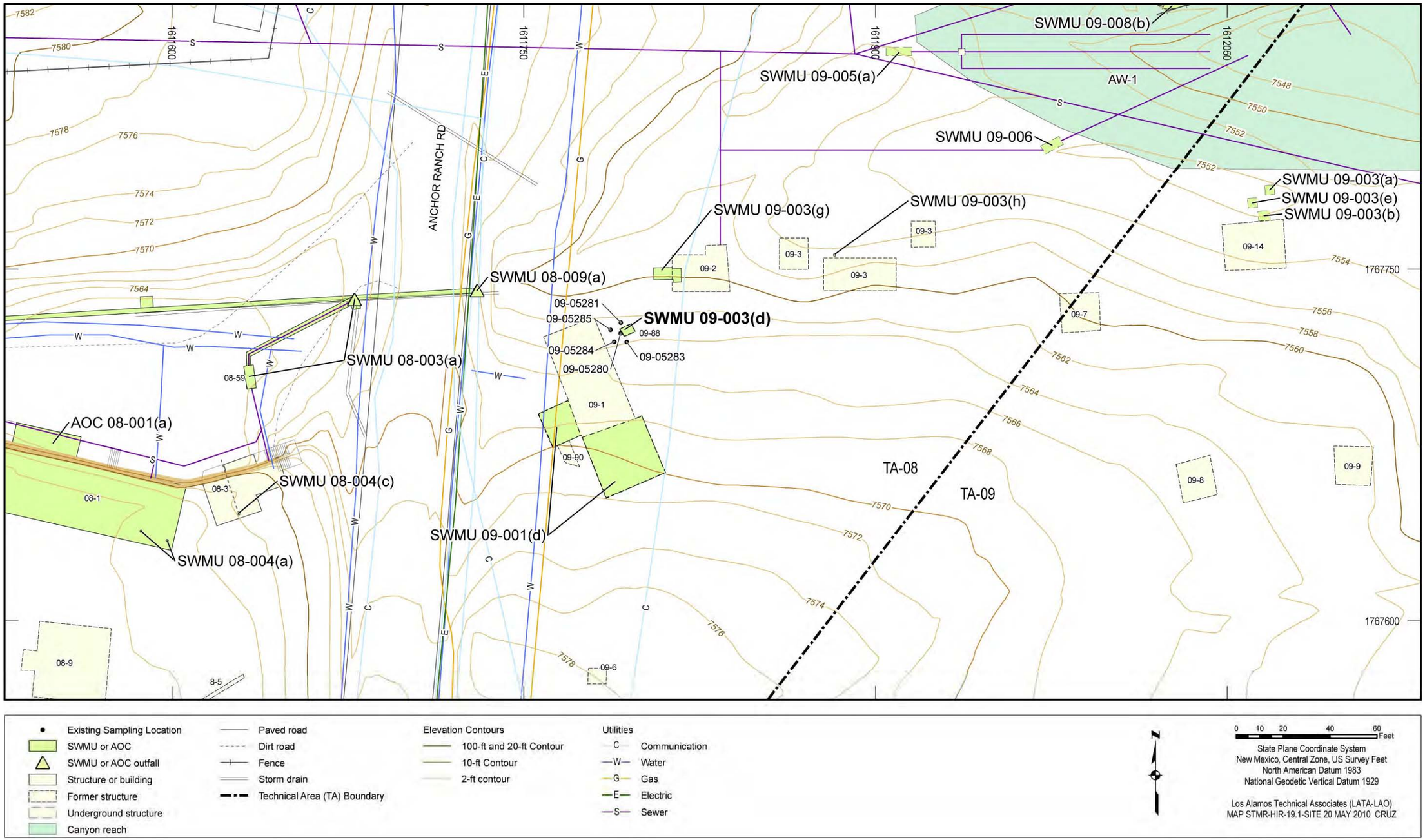


Figure 3.6-1 Site features of SWMU 09-003(d)

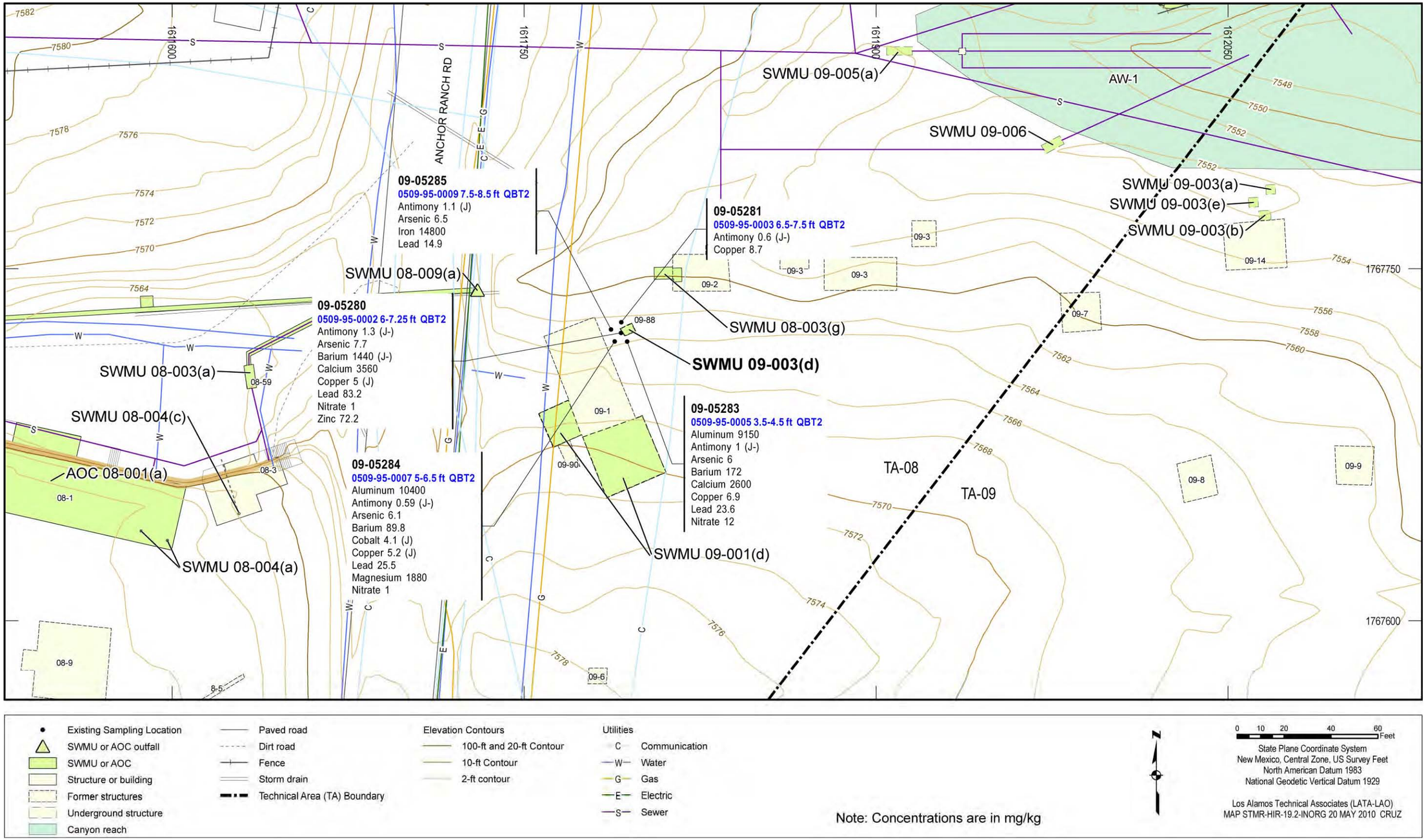


Figure 3.6-2 Inorganic chemicals detected above BVs at SWMU 09-003(d)

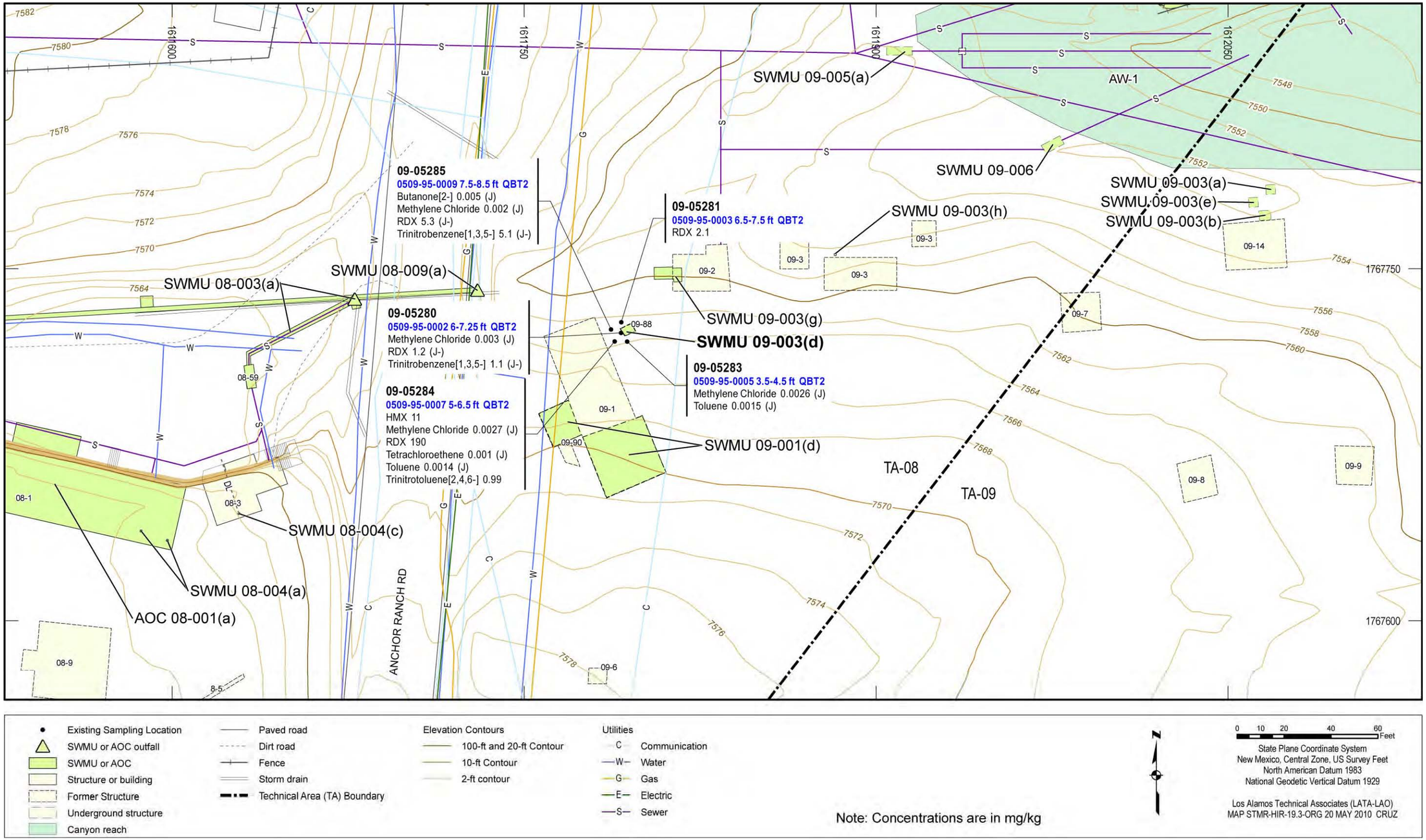


Figure 3.6-3 Organic chemicals detected at SWMU 09-003(d)

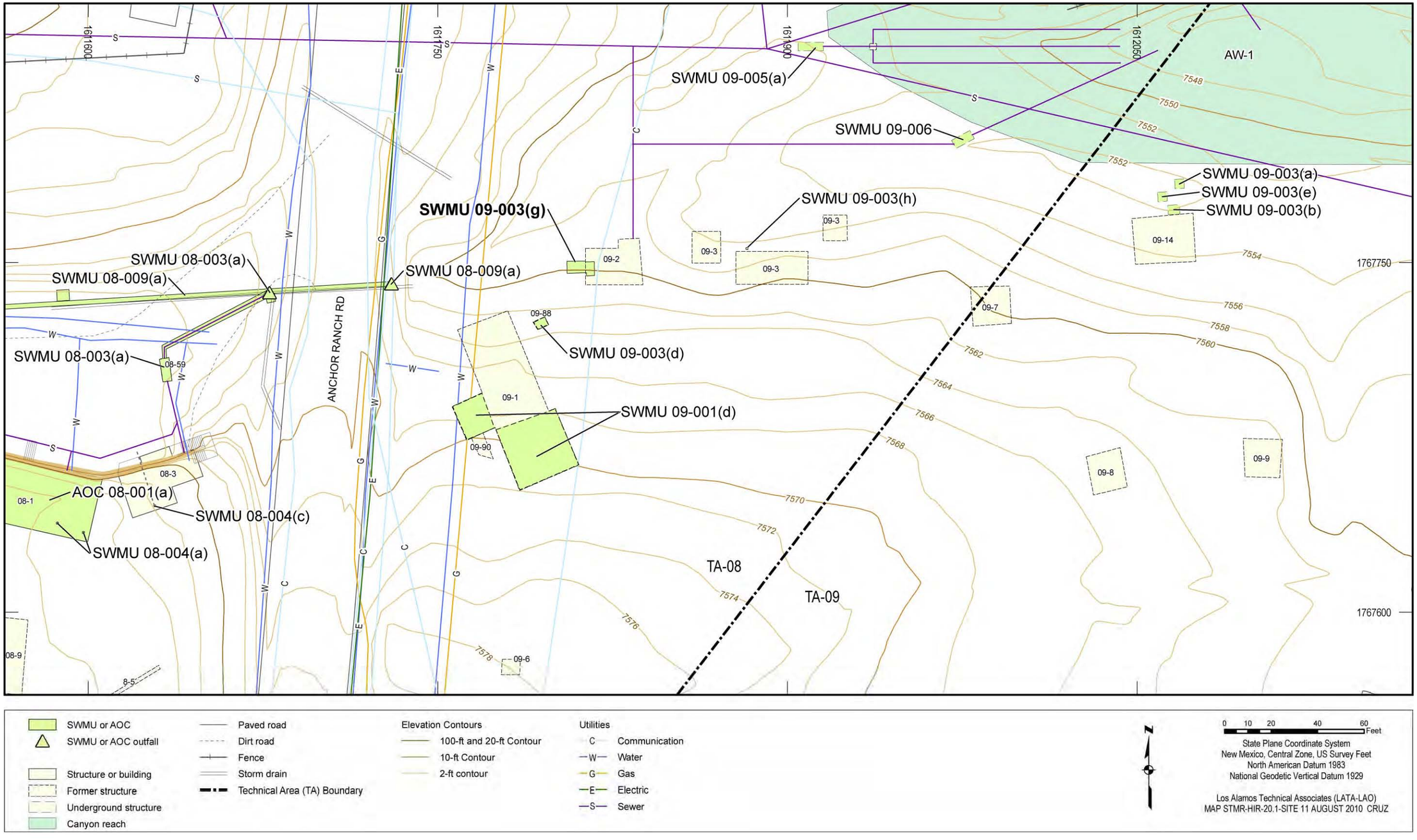


Figure 3.7-1 Site features of SWMU 09-003(g)

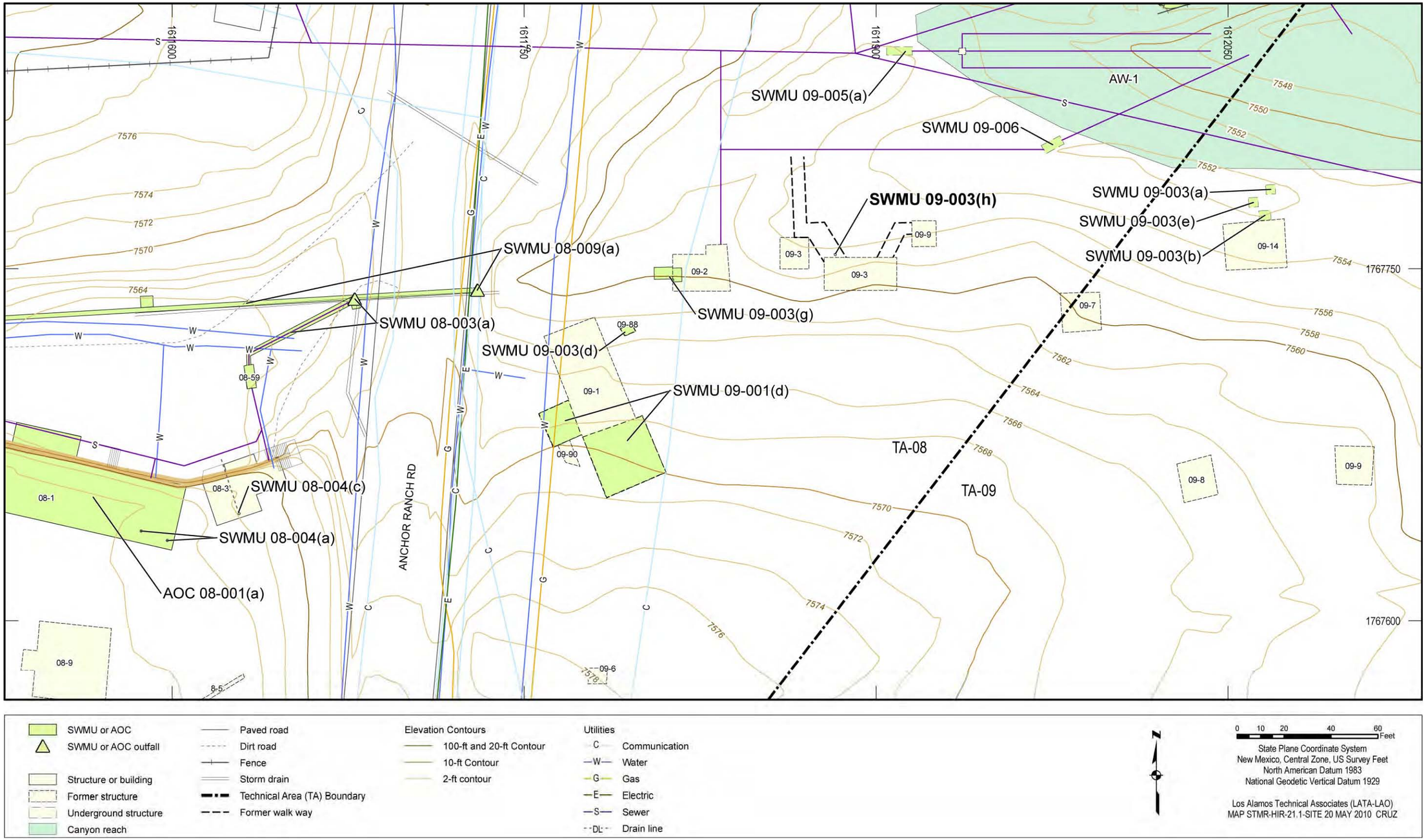


Figure 3.8-1 Site features of SWMU 09-003(h)

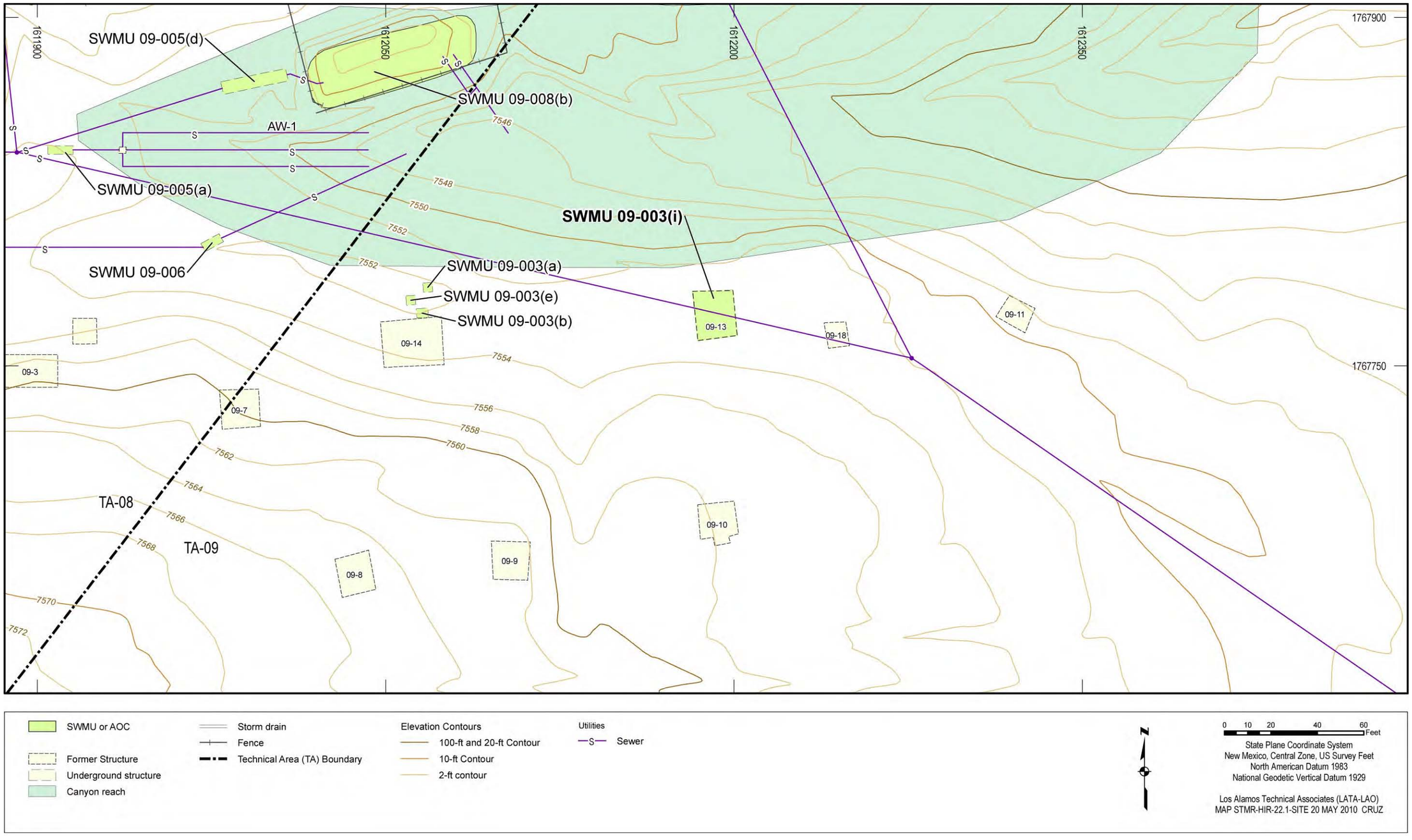


Figure 3.9-1 Site features of SWMU 09-003(i)

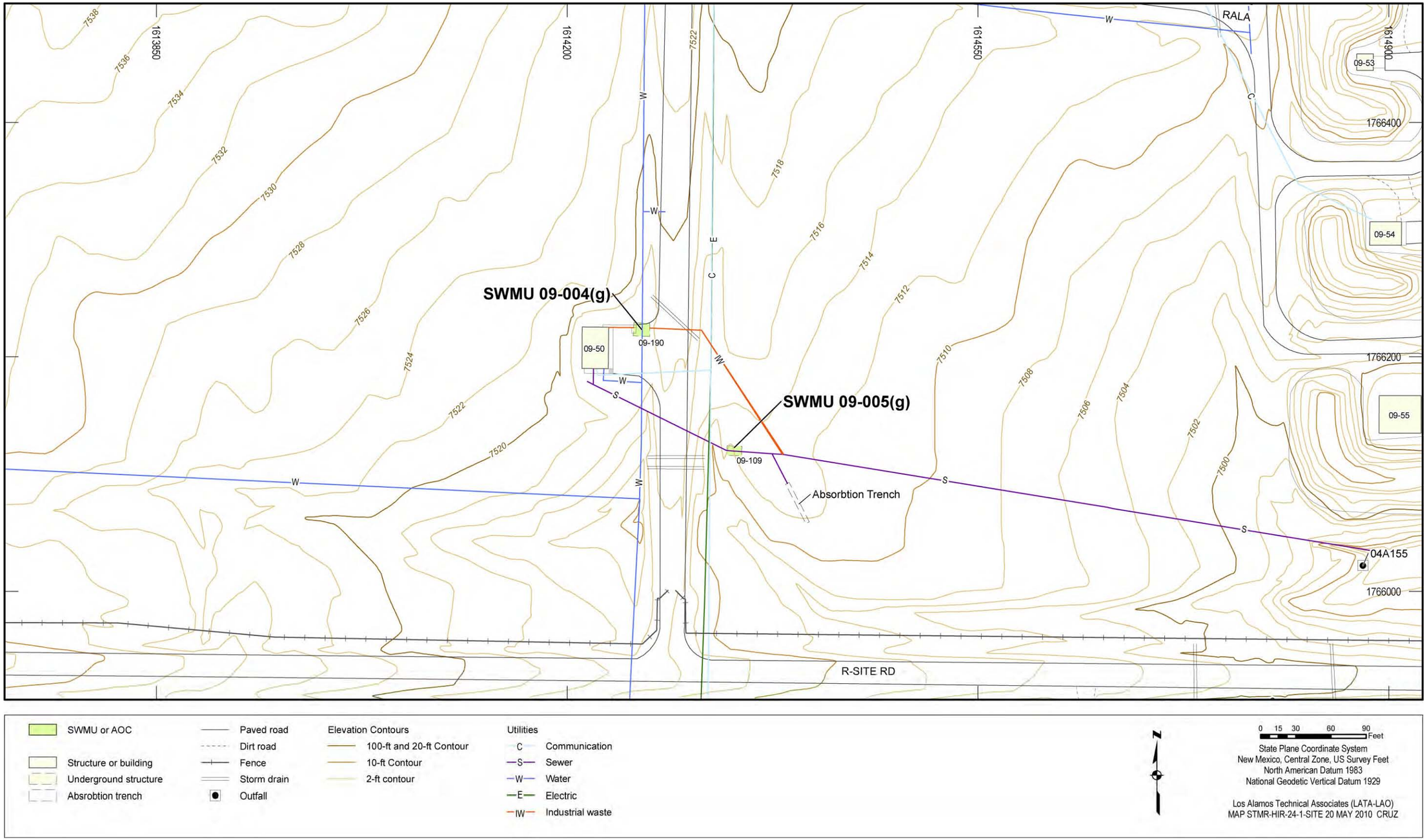


Figure 3.11-1 Site features of SWMUs 09-004(g) and 09-005(g)

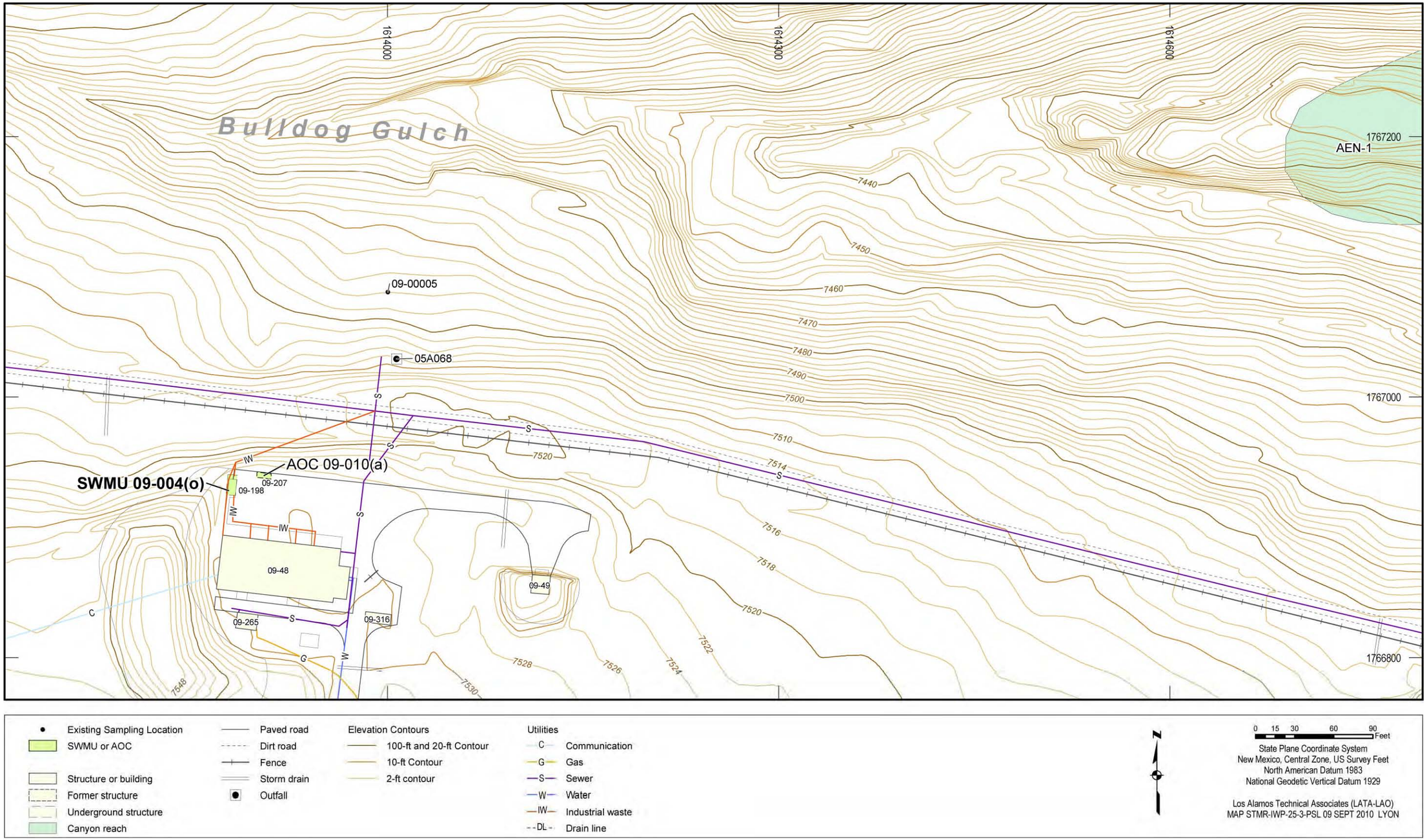


Figure 3.12-1 Site features of SWMU 09-004(o)

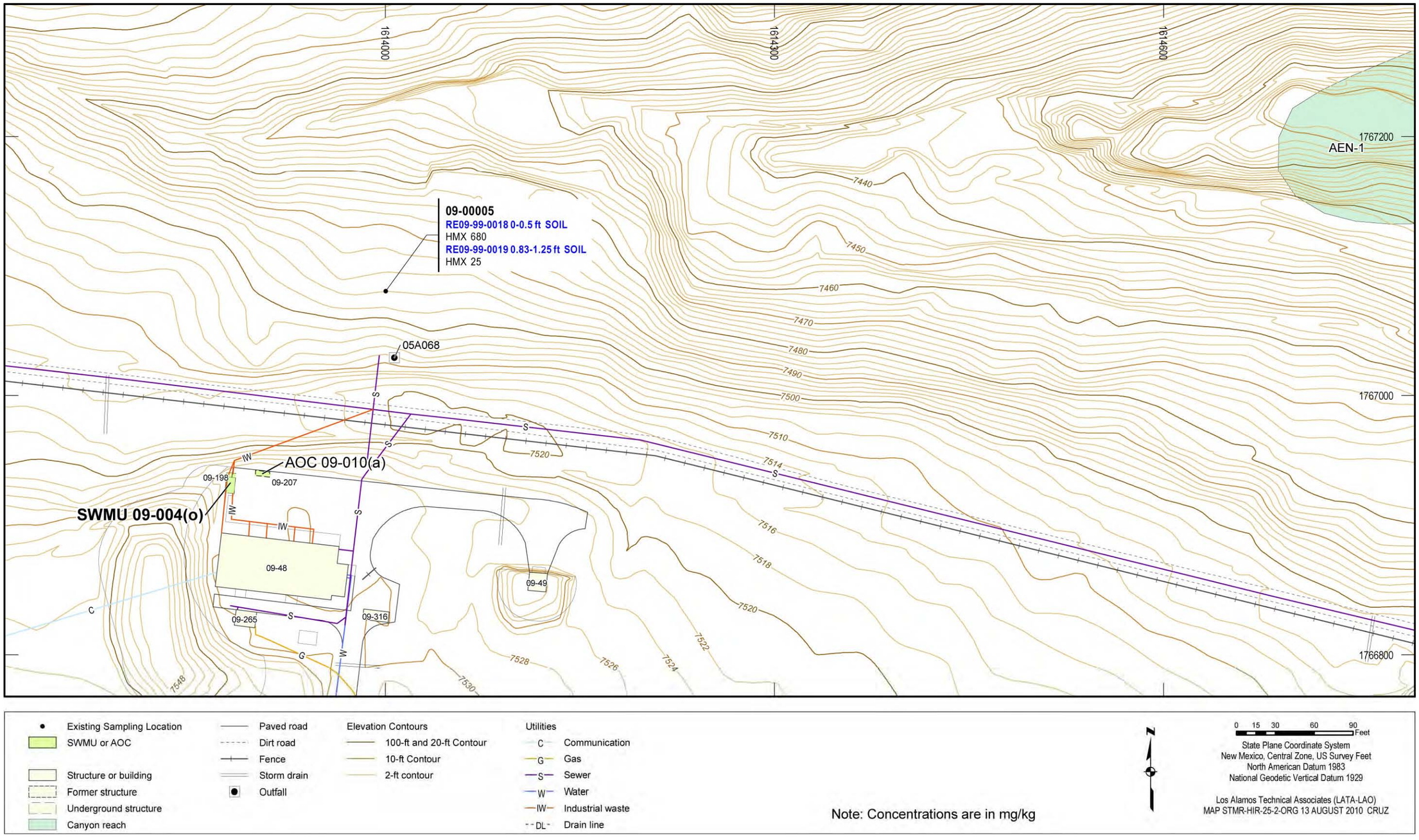


Figure 3.12-2 Organic chemicals detected at SWMU 09-004(o)

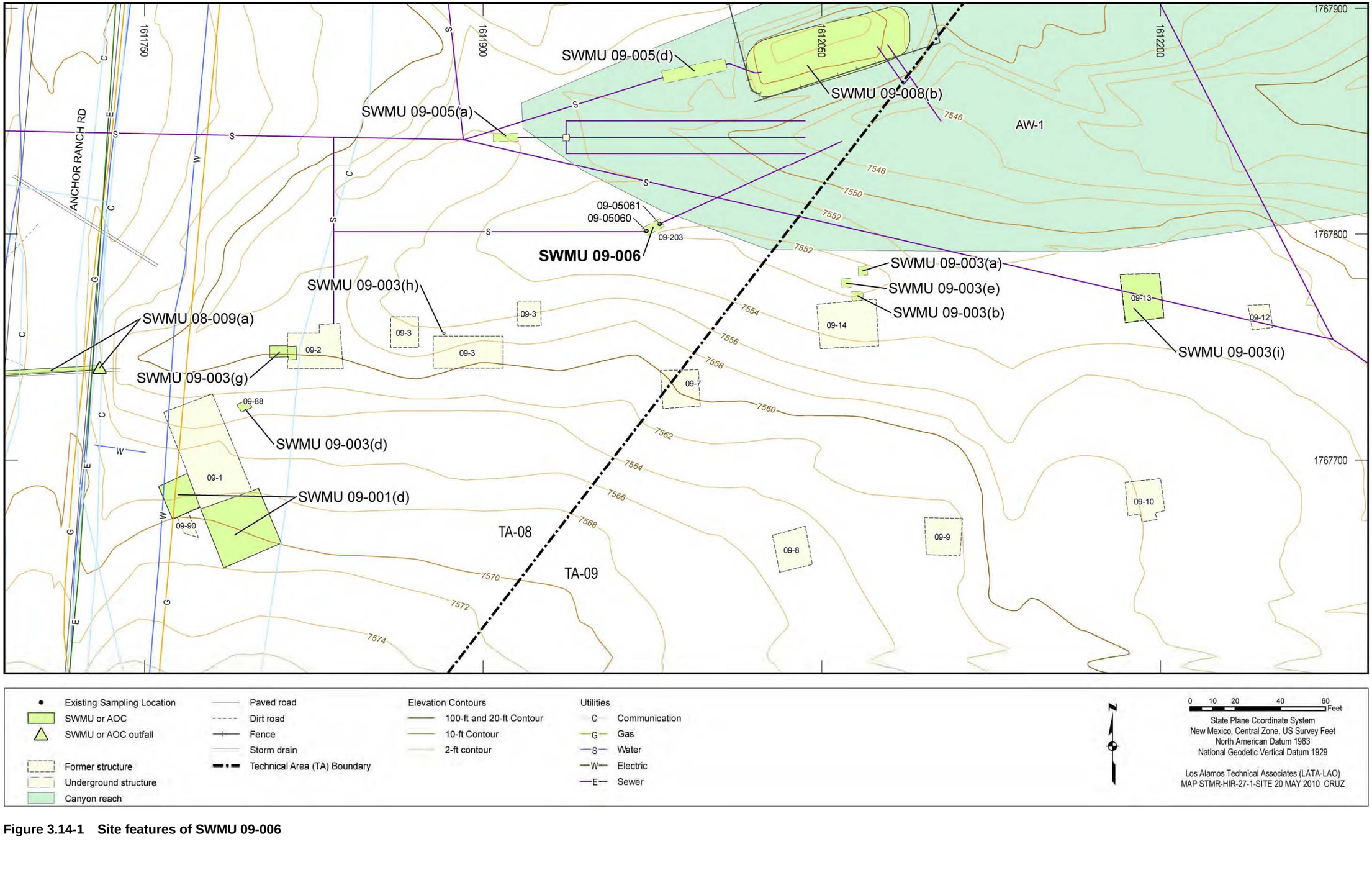


Figure 3.14-1 Site features of SWMU 09-006

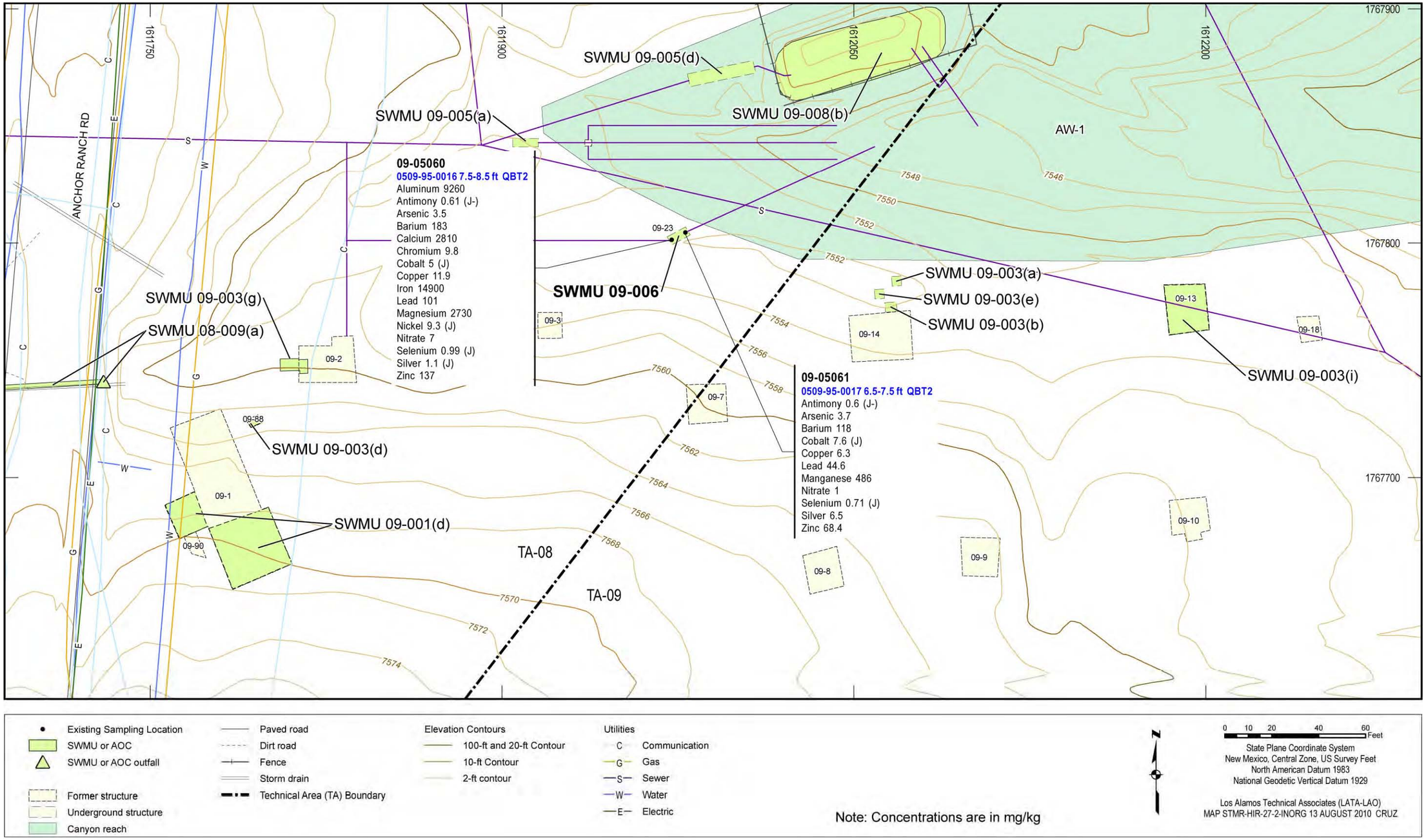


Figure 3.14-2 Inorganic chemicals detected above BVs at SWMU 09-006

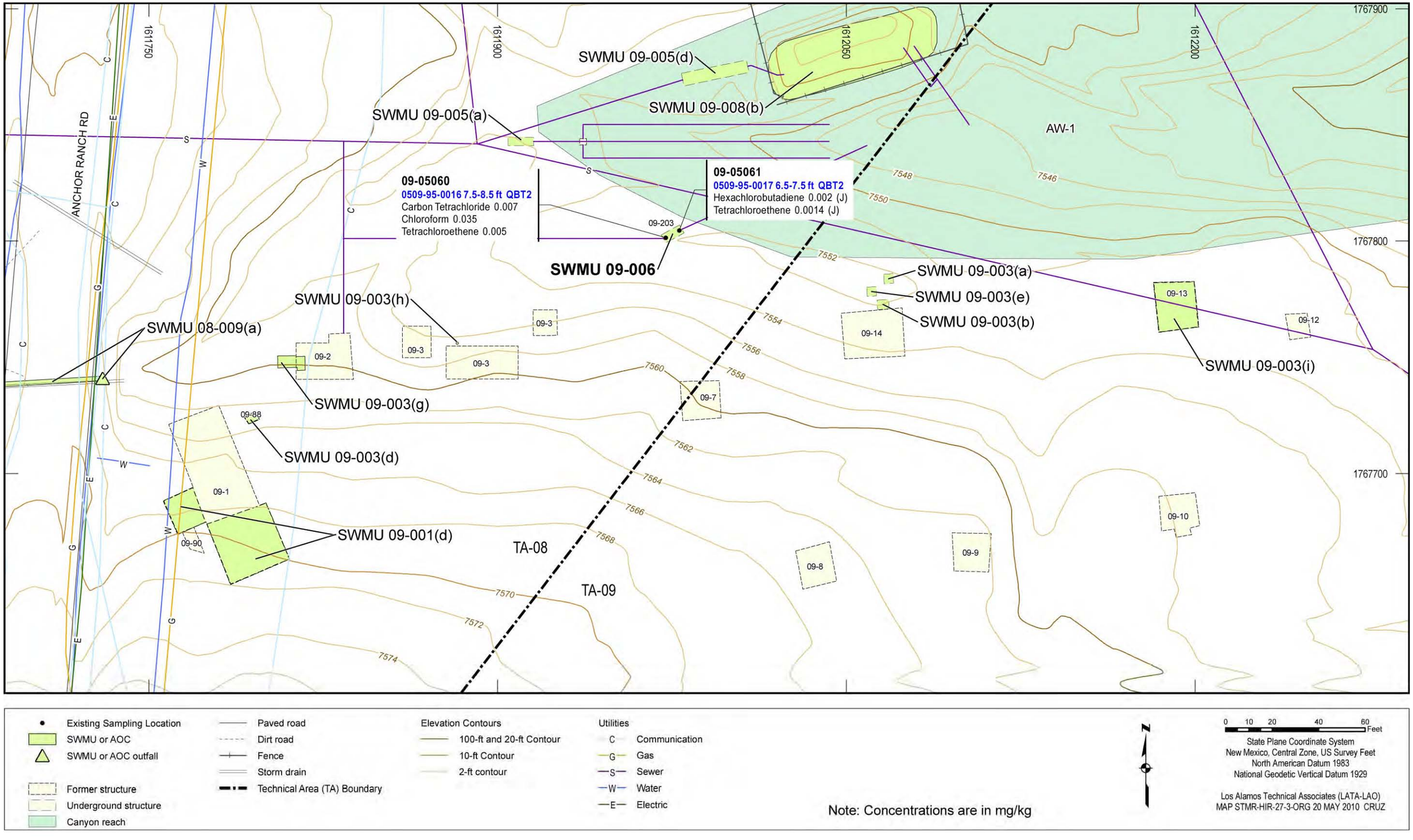


Figure 3.14-3 Organic chemicals detected at SWMU 09-006

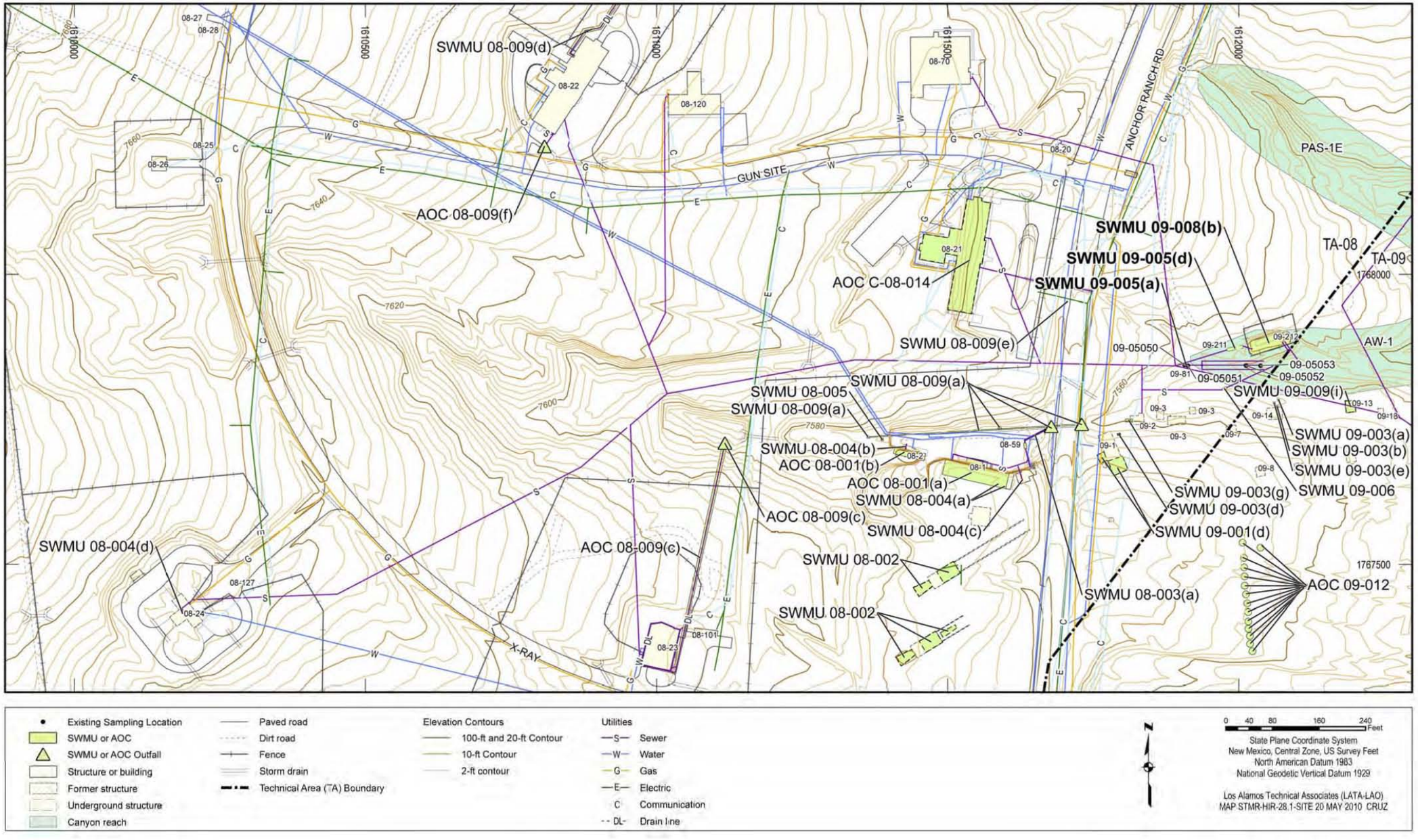


Figure 3.15-1 Site features of Consolidated Unit 09-008(b)-99 [SWMUs 09-005(a), 09-005(d), and 09-008(b)]

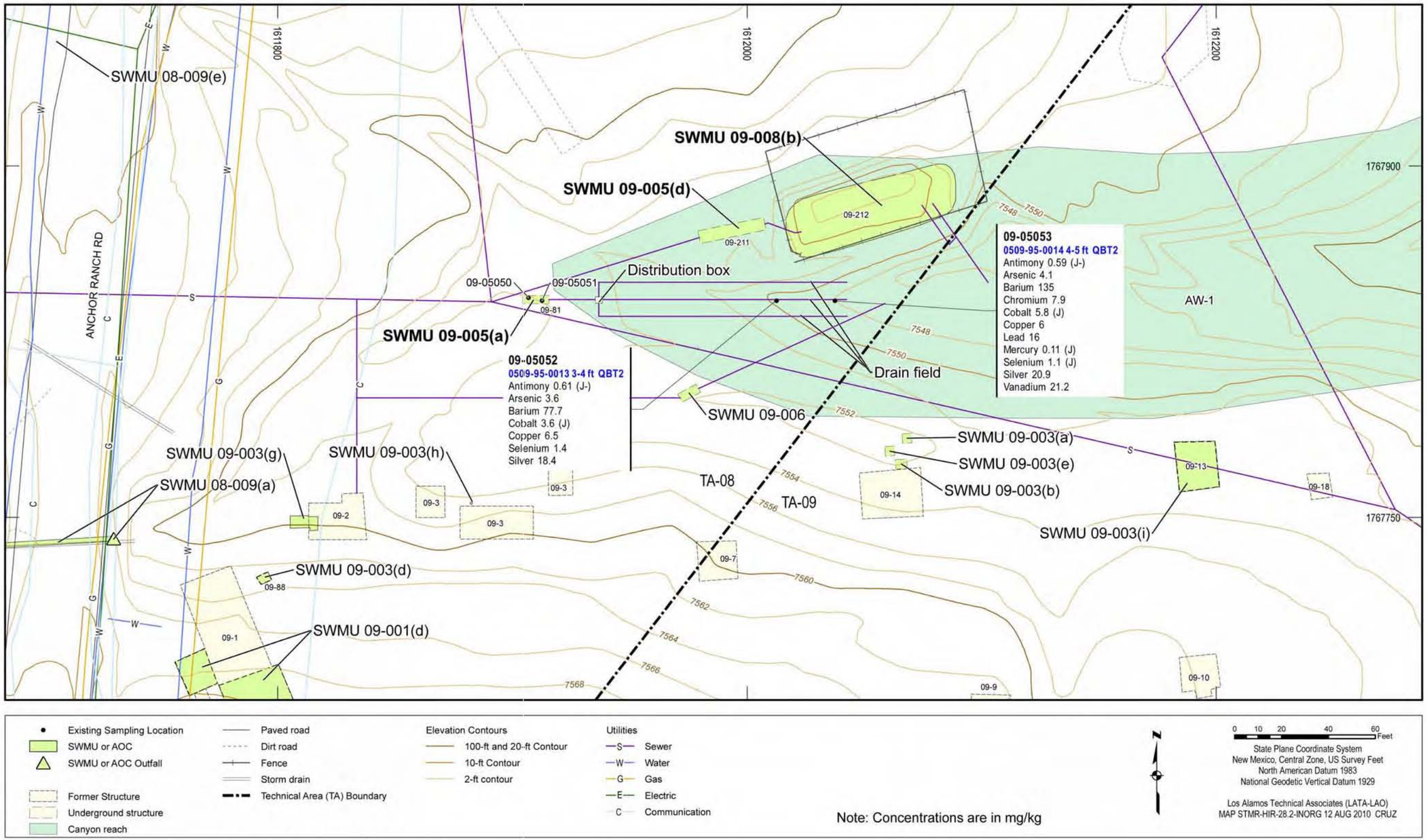


Figure 3.15-2 Inorganic chemicals detected above BVs at SWMU 09-005(a)

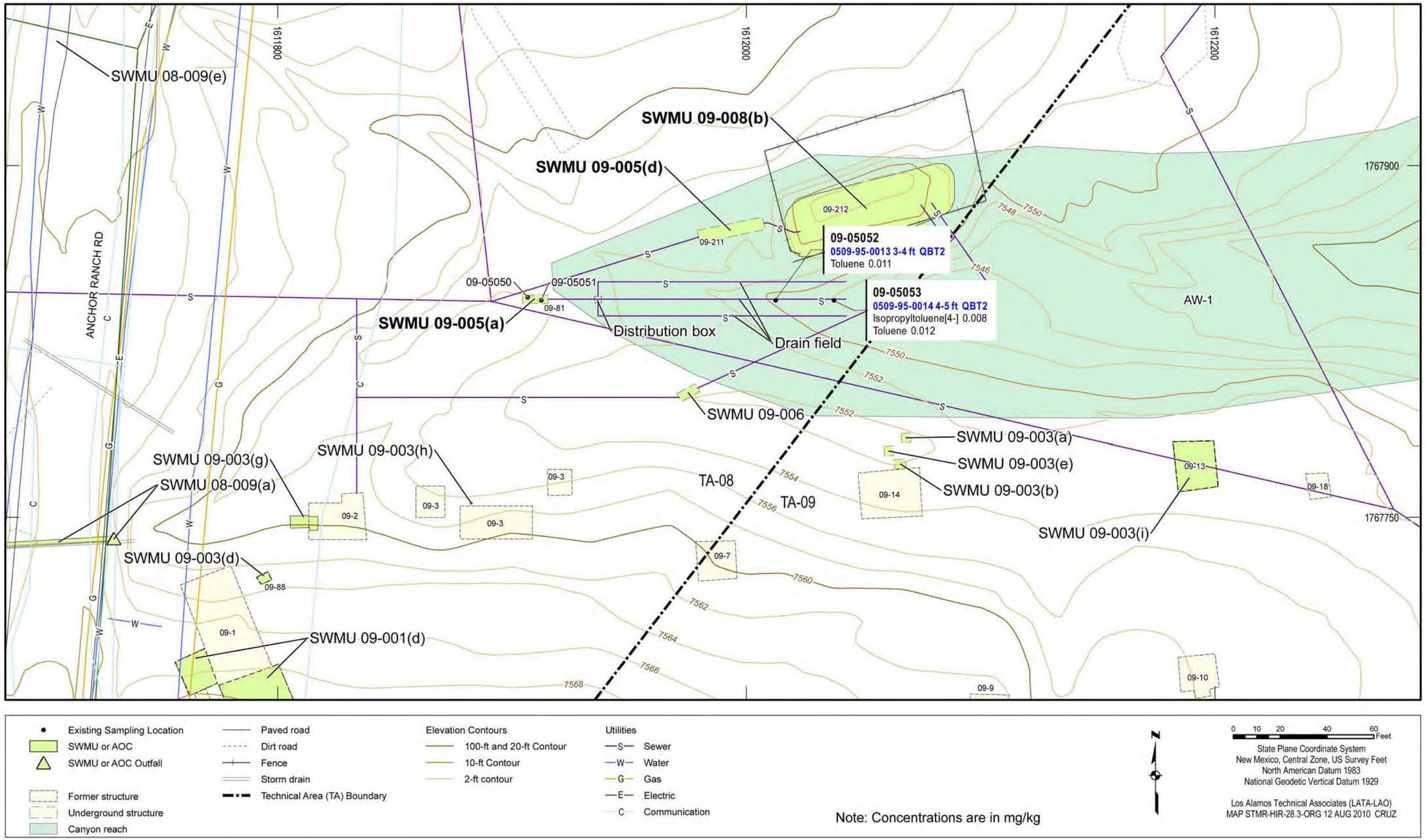


Figure 3.15-3 Organic chemicals detected at SWMU 09-005(a)

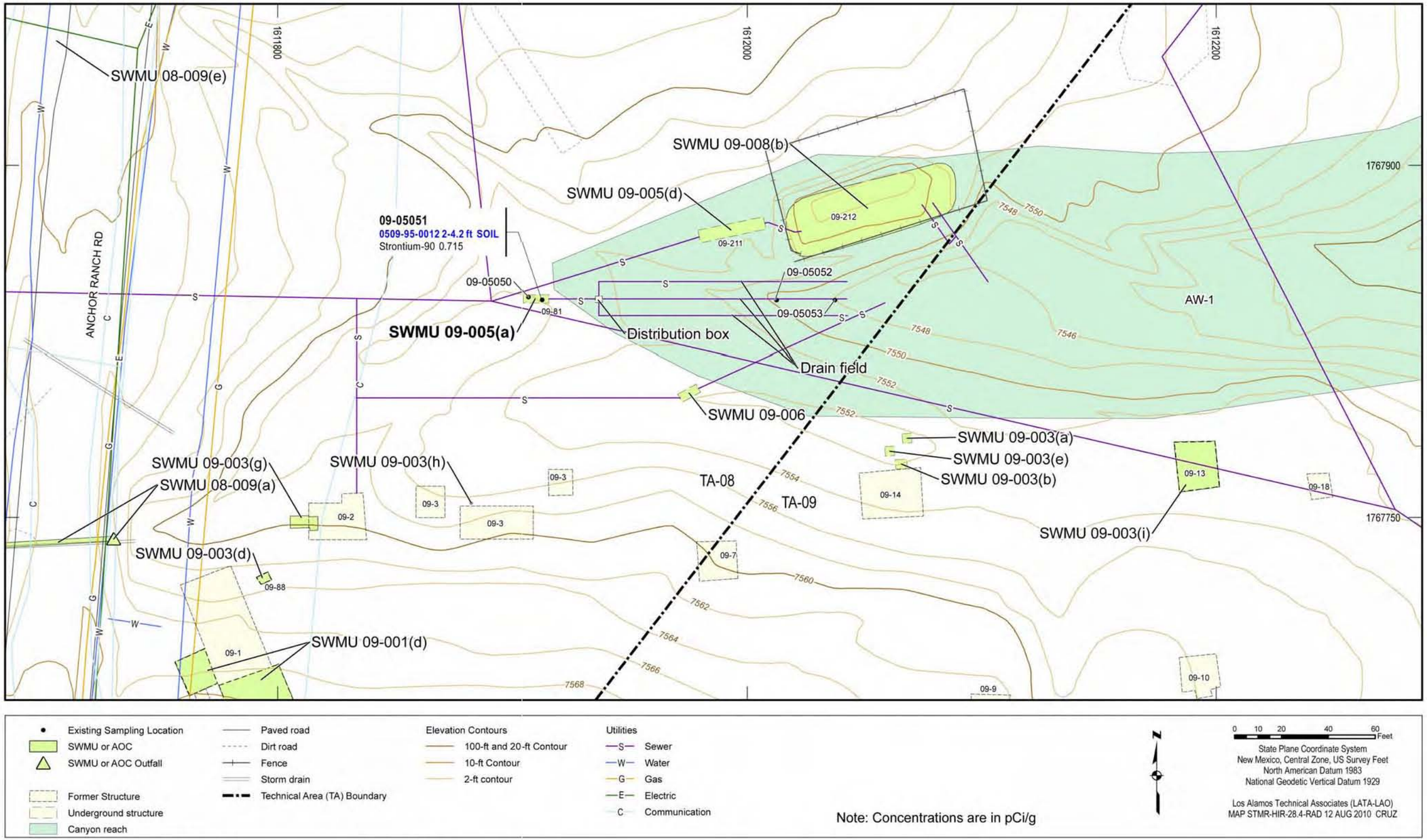


Figure 3.15-4 Radionuclides detected or detected above BVs/FVs at SWMU 09-005(a)

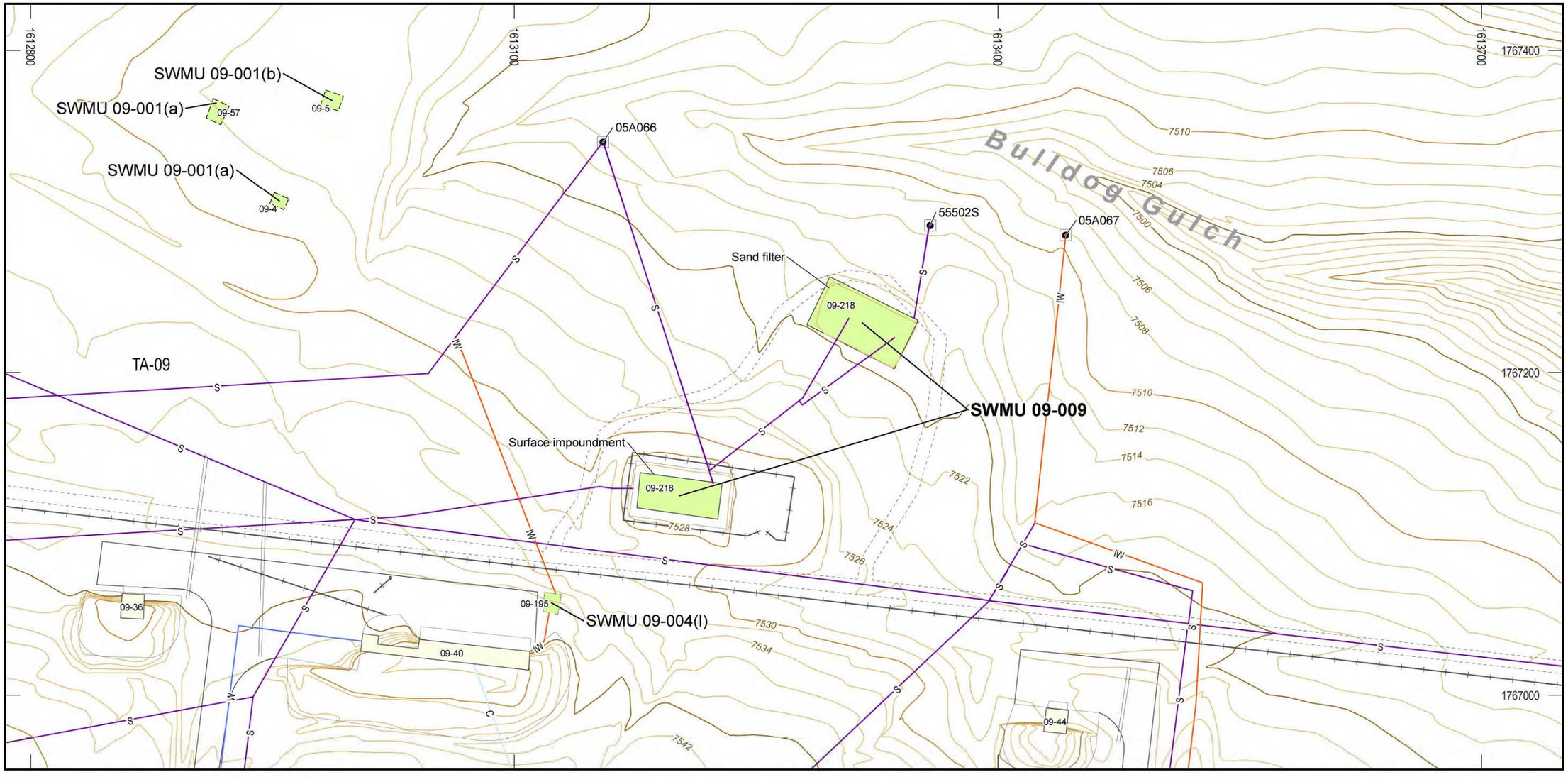


Figure 3.16-1 Site features of SWMU 09-009

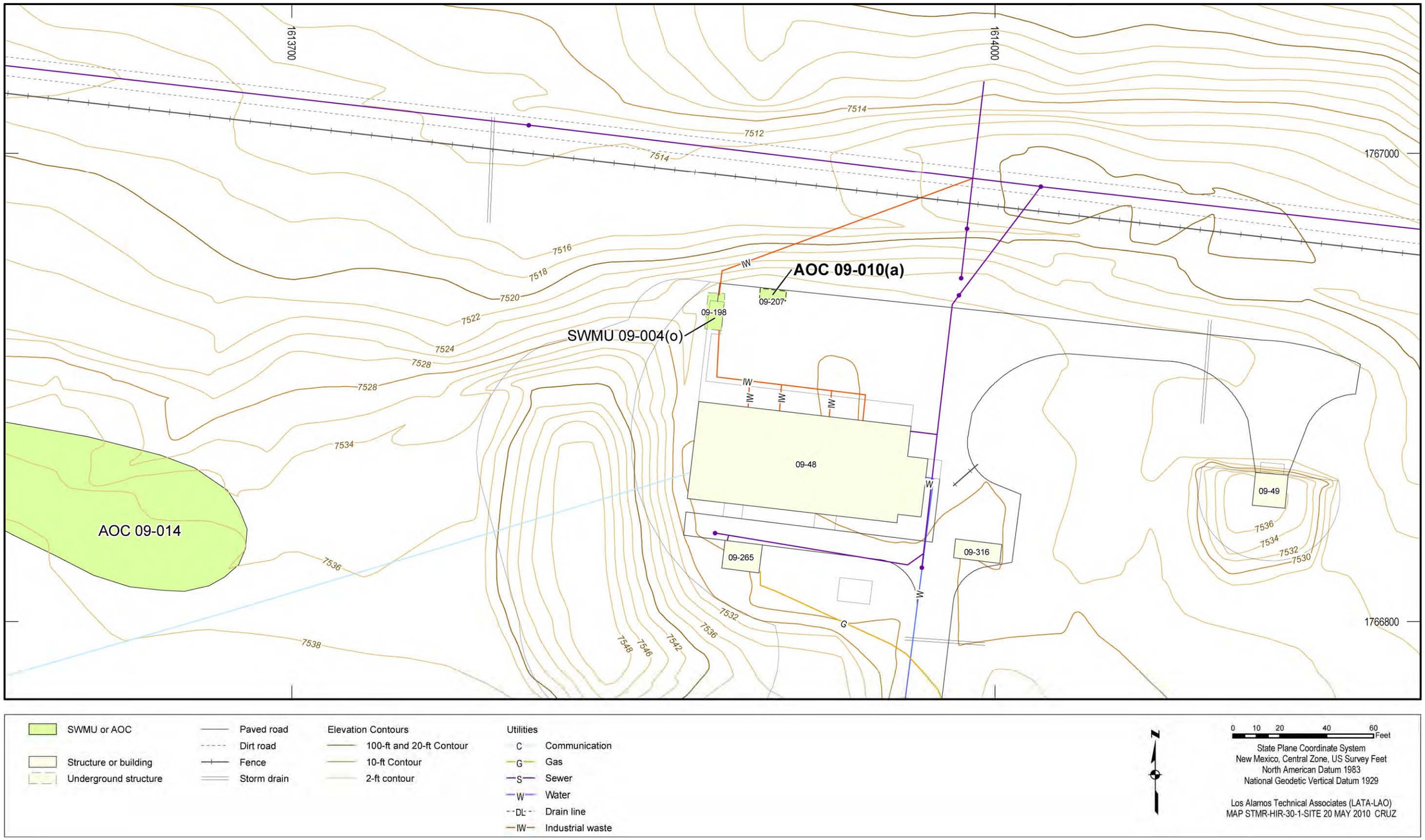


Figure 3.17-1 Site features of AOC 09-010(a)

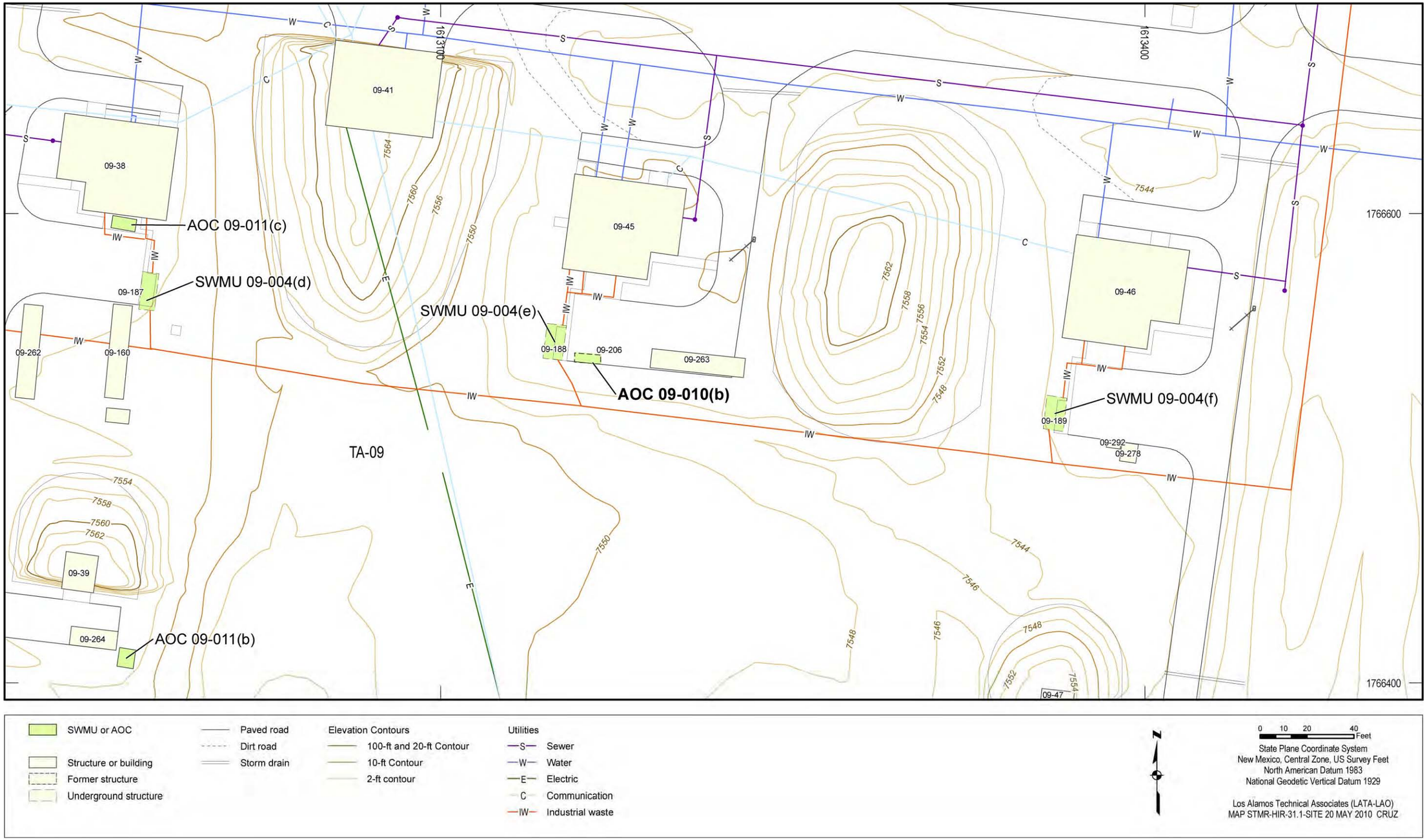


Figure 3.18-1 Site features of AOC 09-010(b)

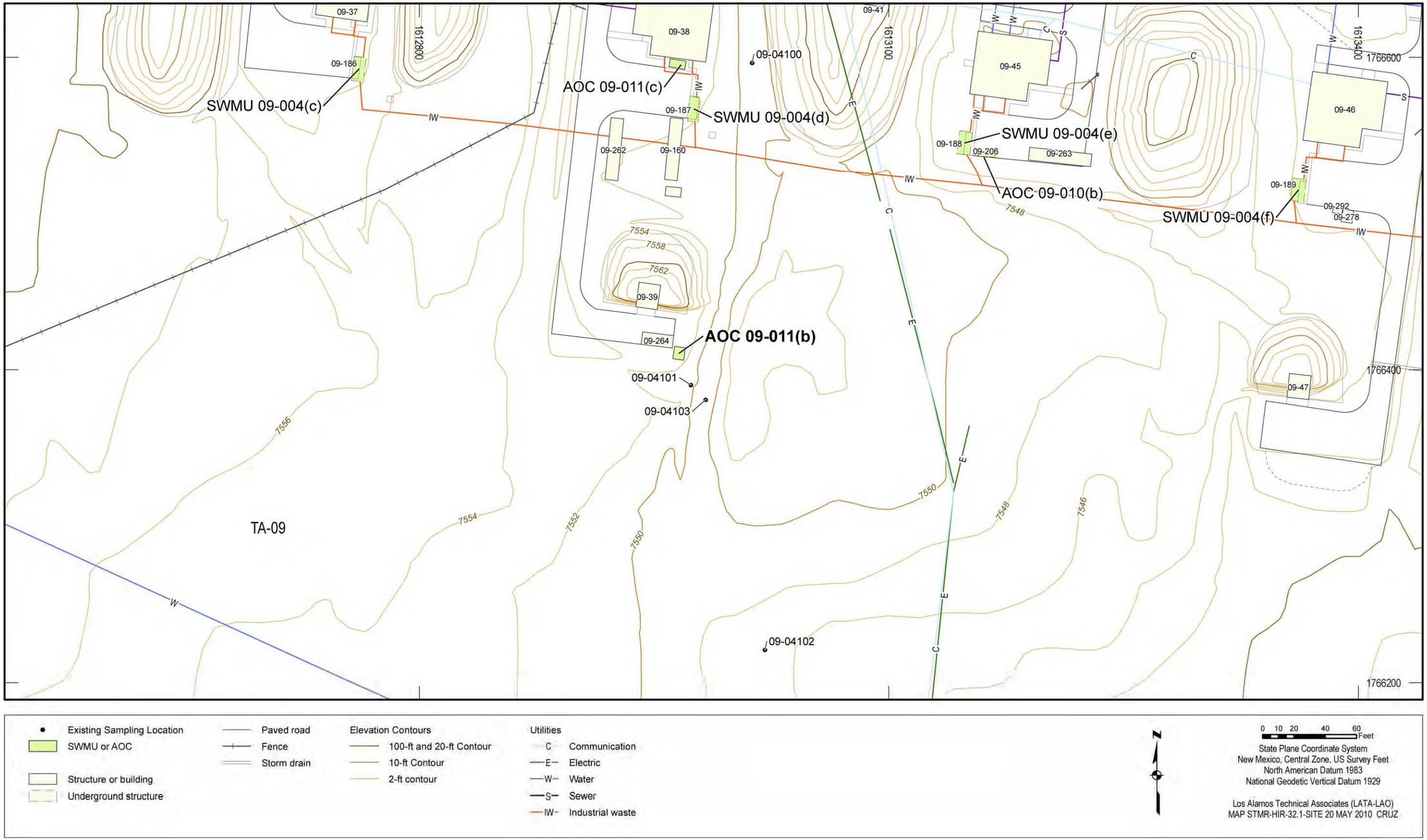


Figure 3.19-1 Site features of AOC 09-011(b)

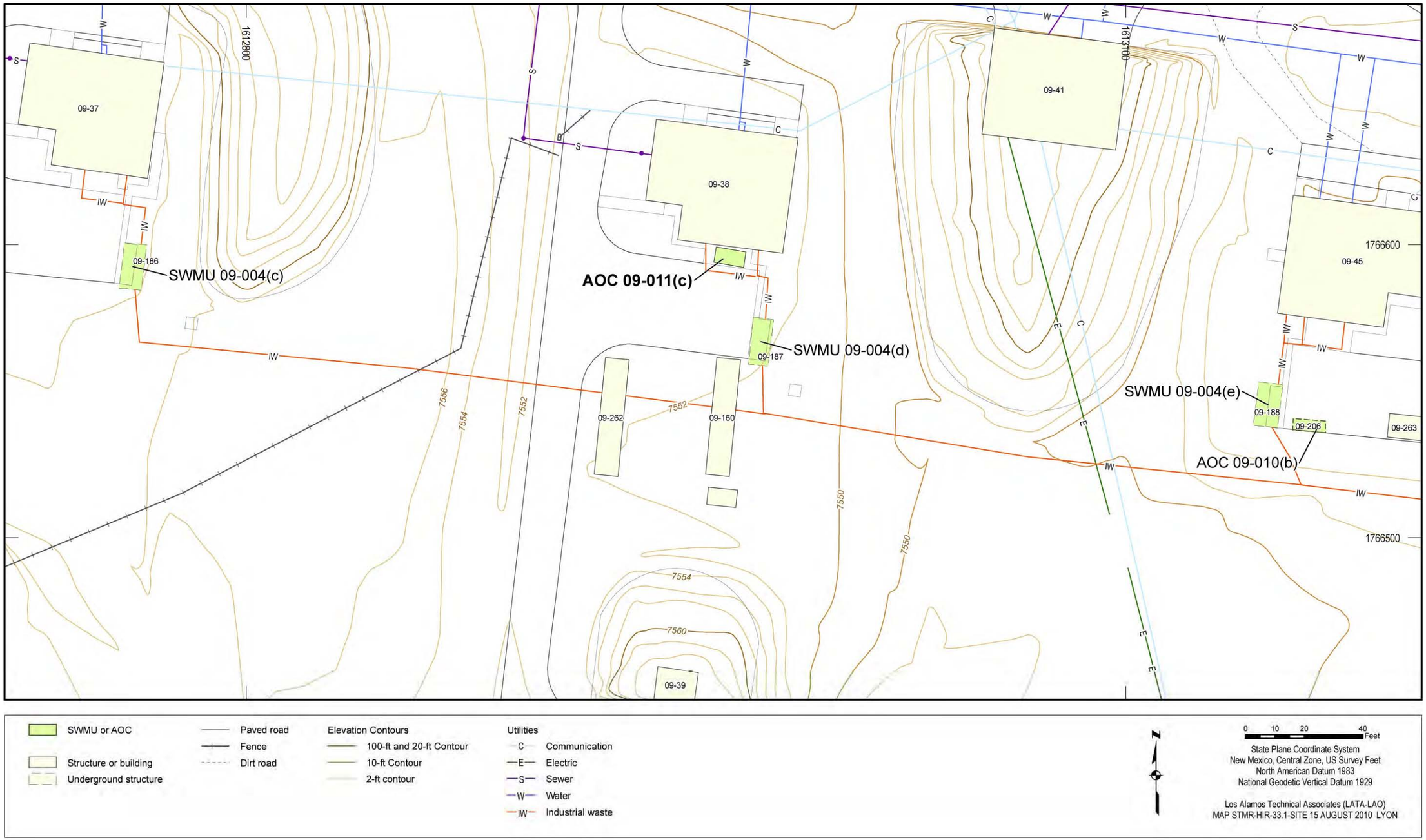


Figure 3.20-1 Site features of AOC 09-011(c)

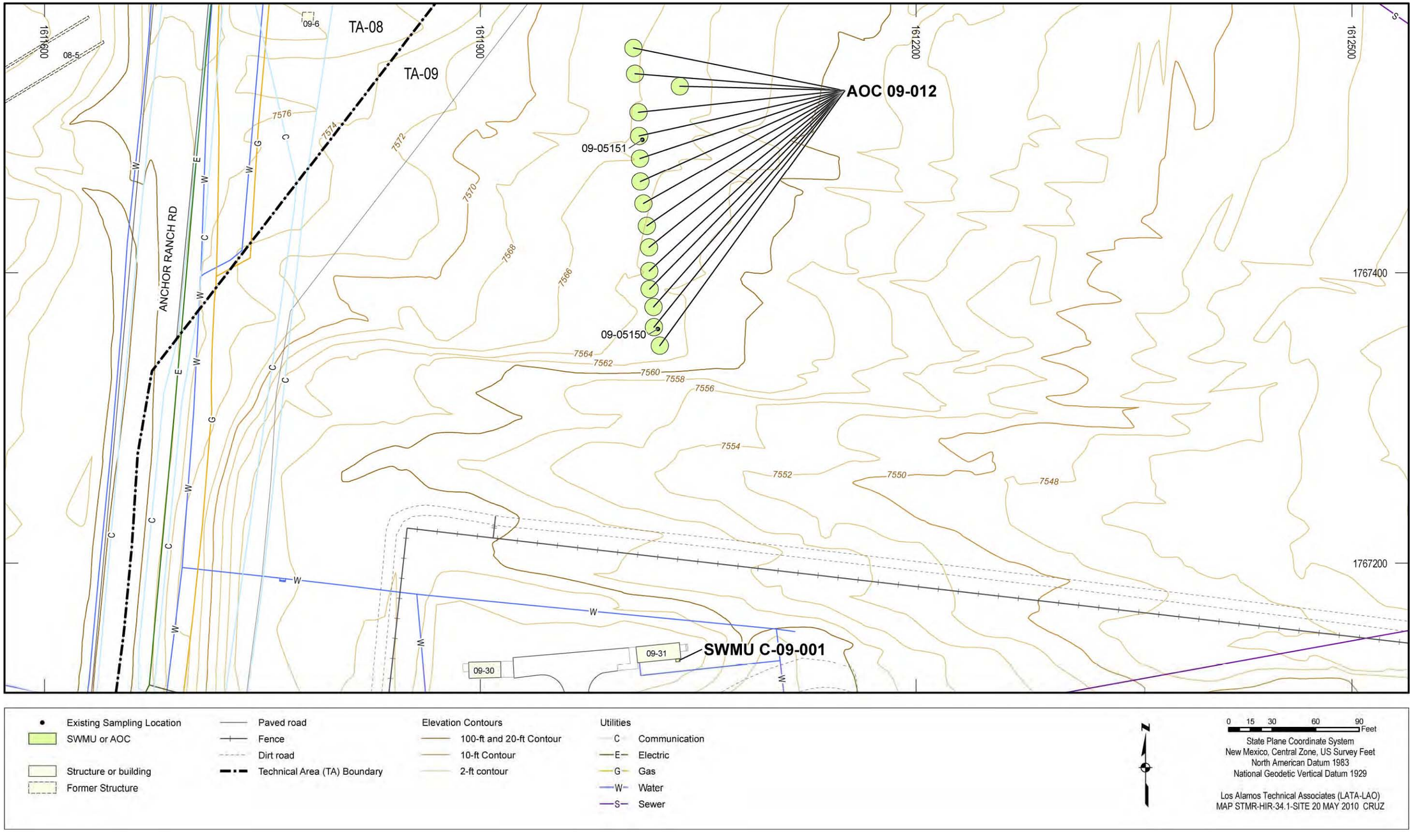


Figure 3.21-1 Site features of AOC 09-012

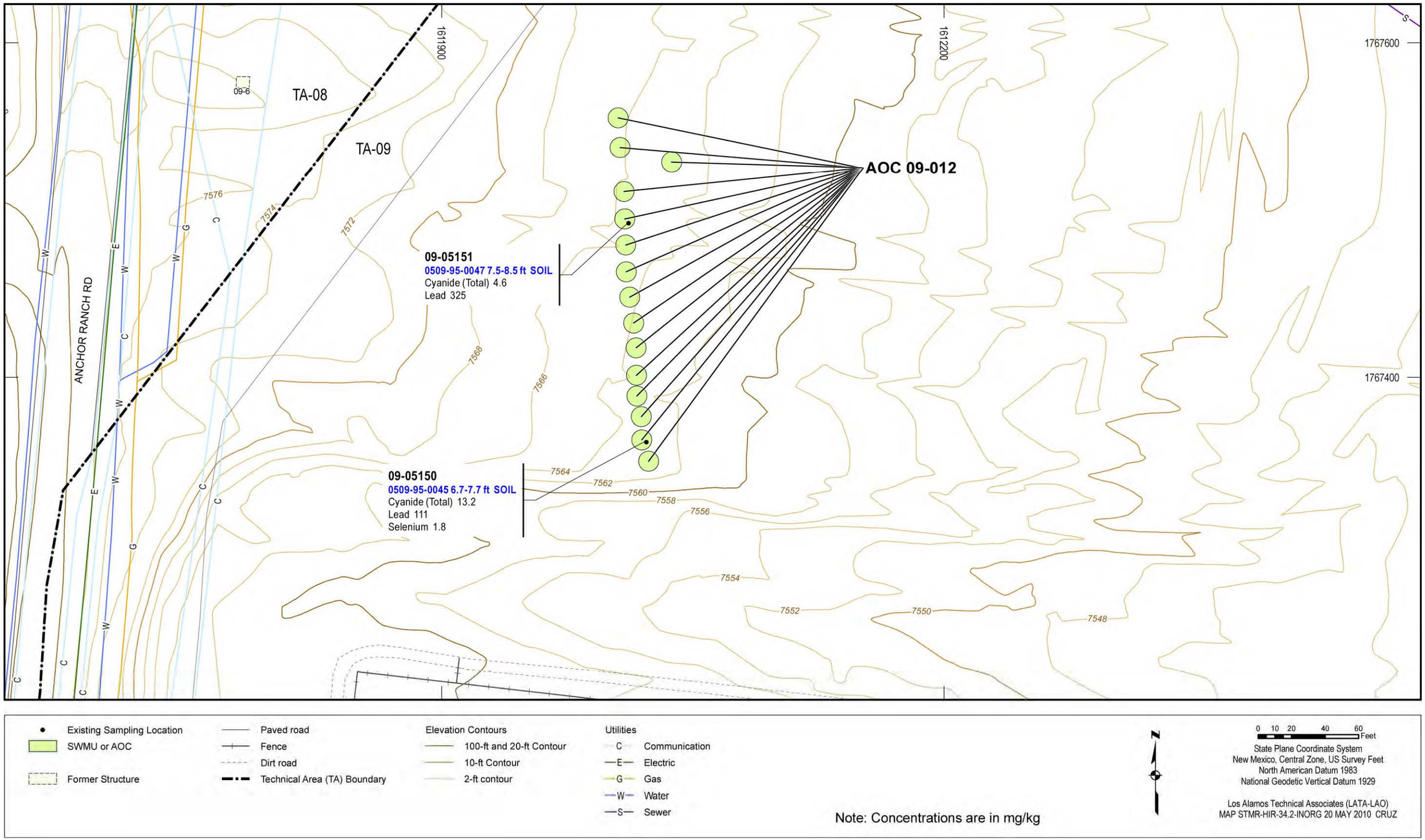


Figure 3.21-2 Inorganic chemicals detected above BVs at AOC 09-012

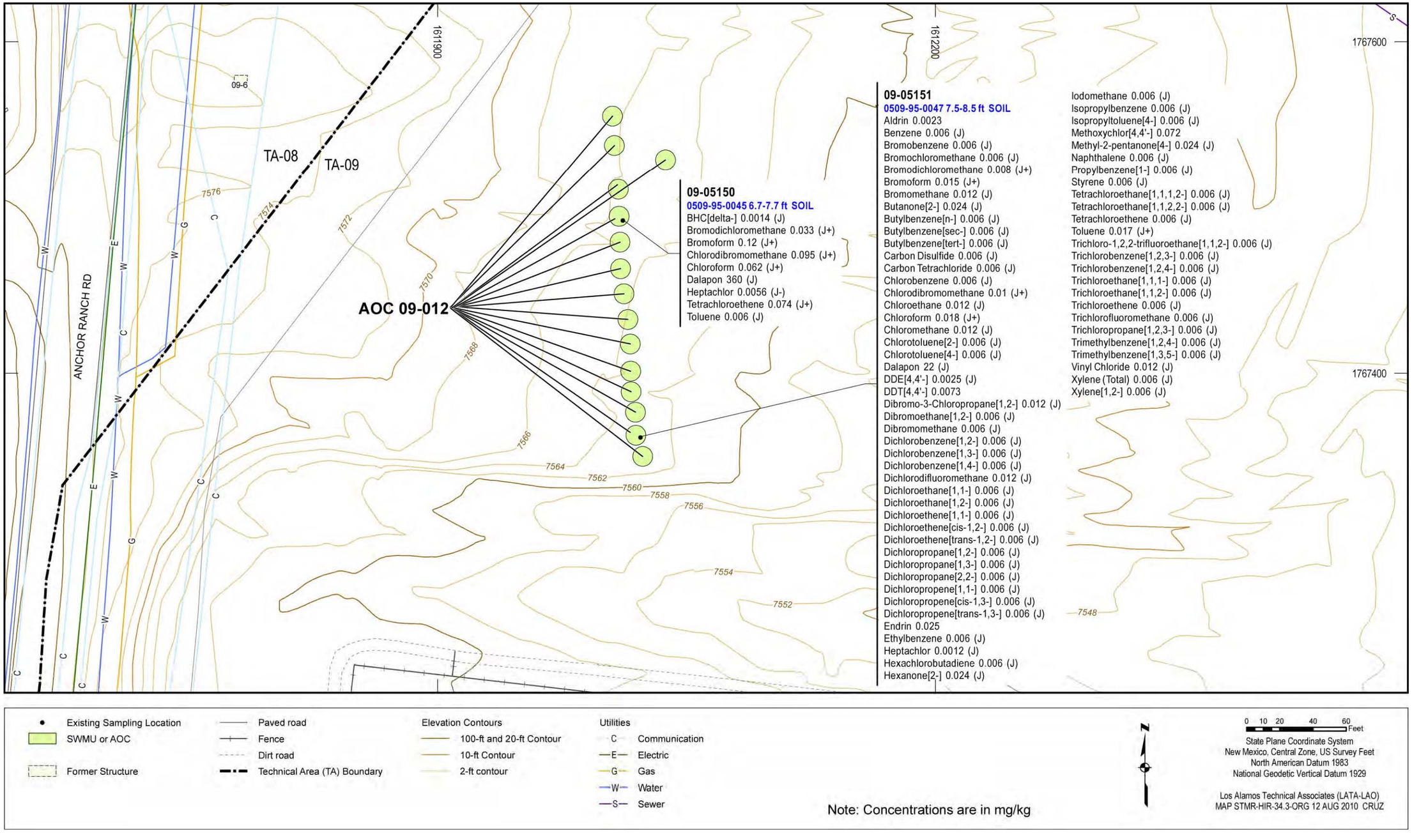


Figure 3.21-3 Organic chemicals detected at AOC 09-012

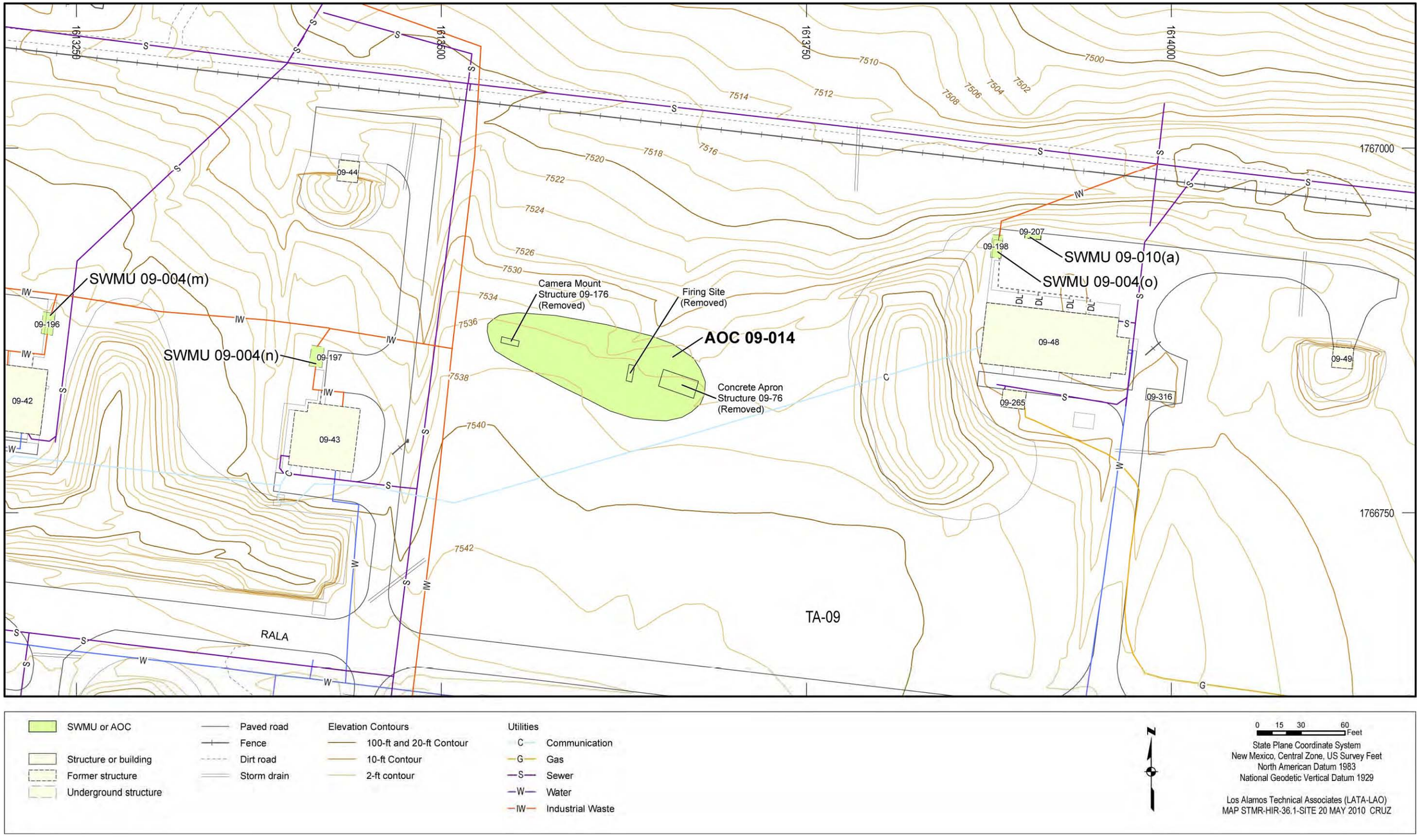


Figure 3.23-1 Site features of AOC 09-014

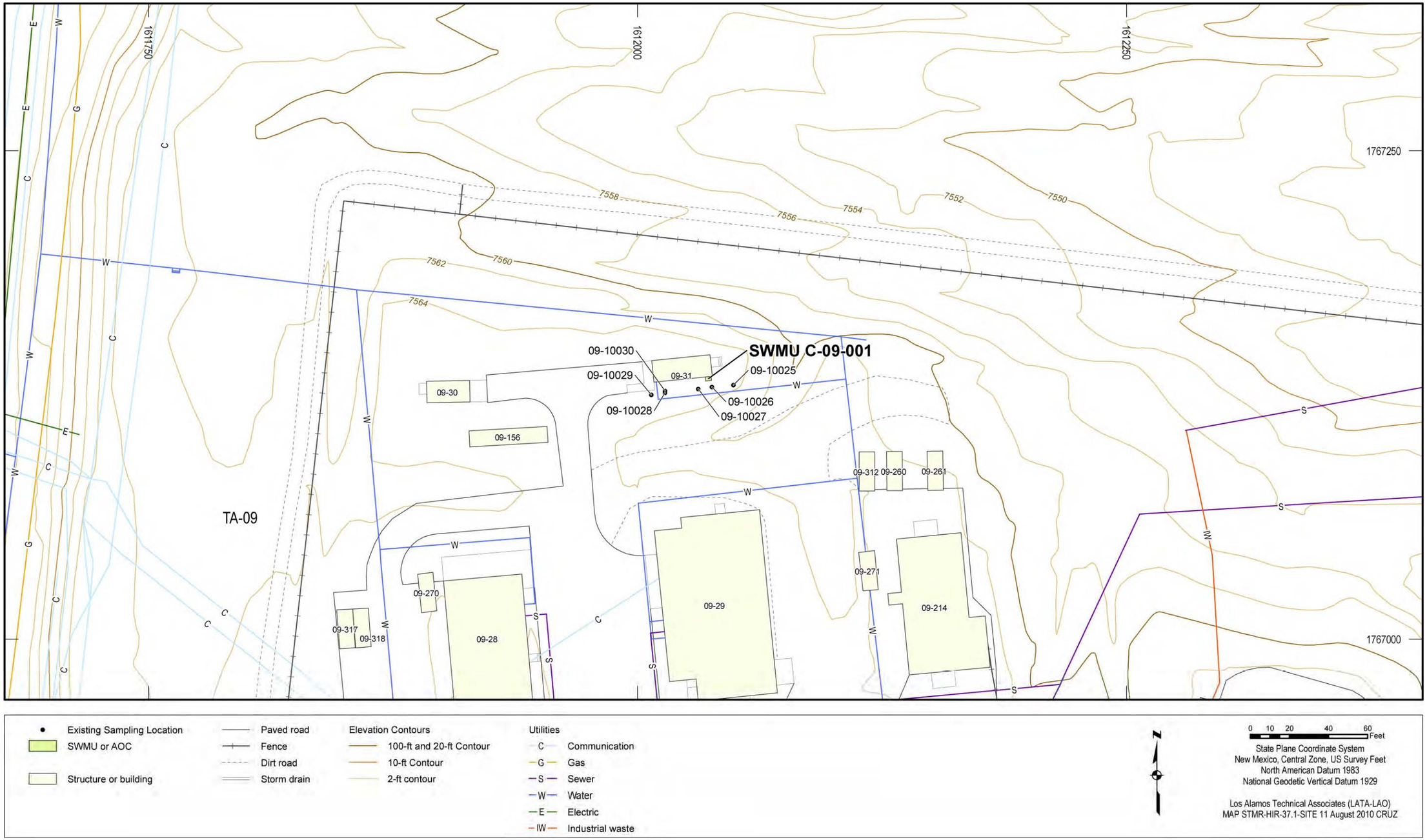


Figure 3.24-1 Site features of SWMU C-09-001

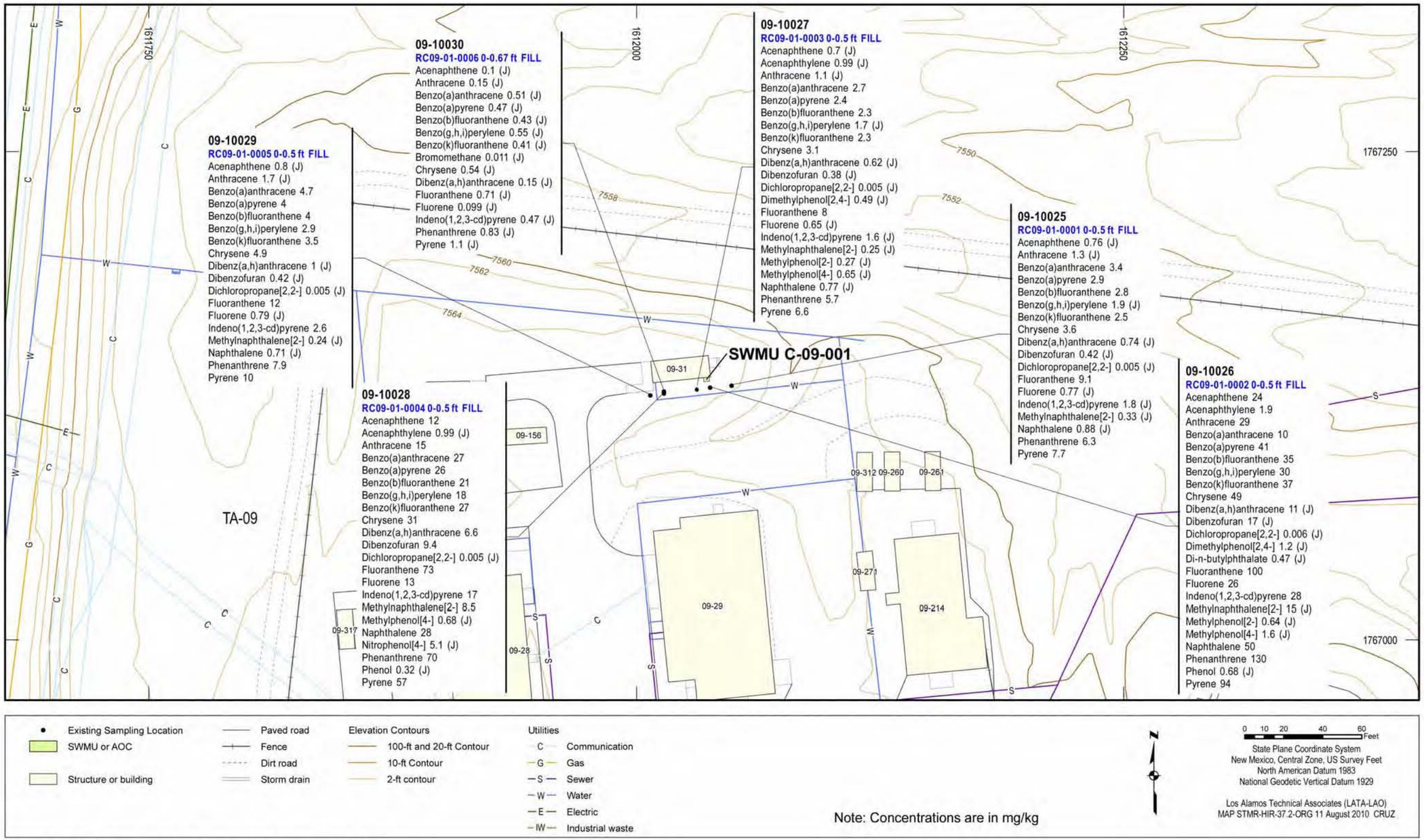


Figure 3.24-2 Organic chemicals detected at SWMU C-09-001

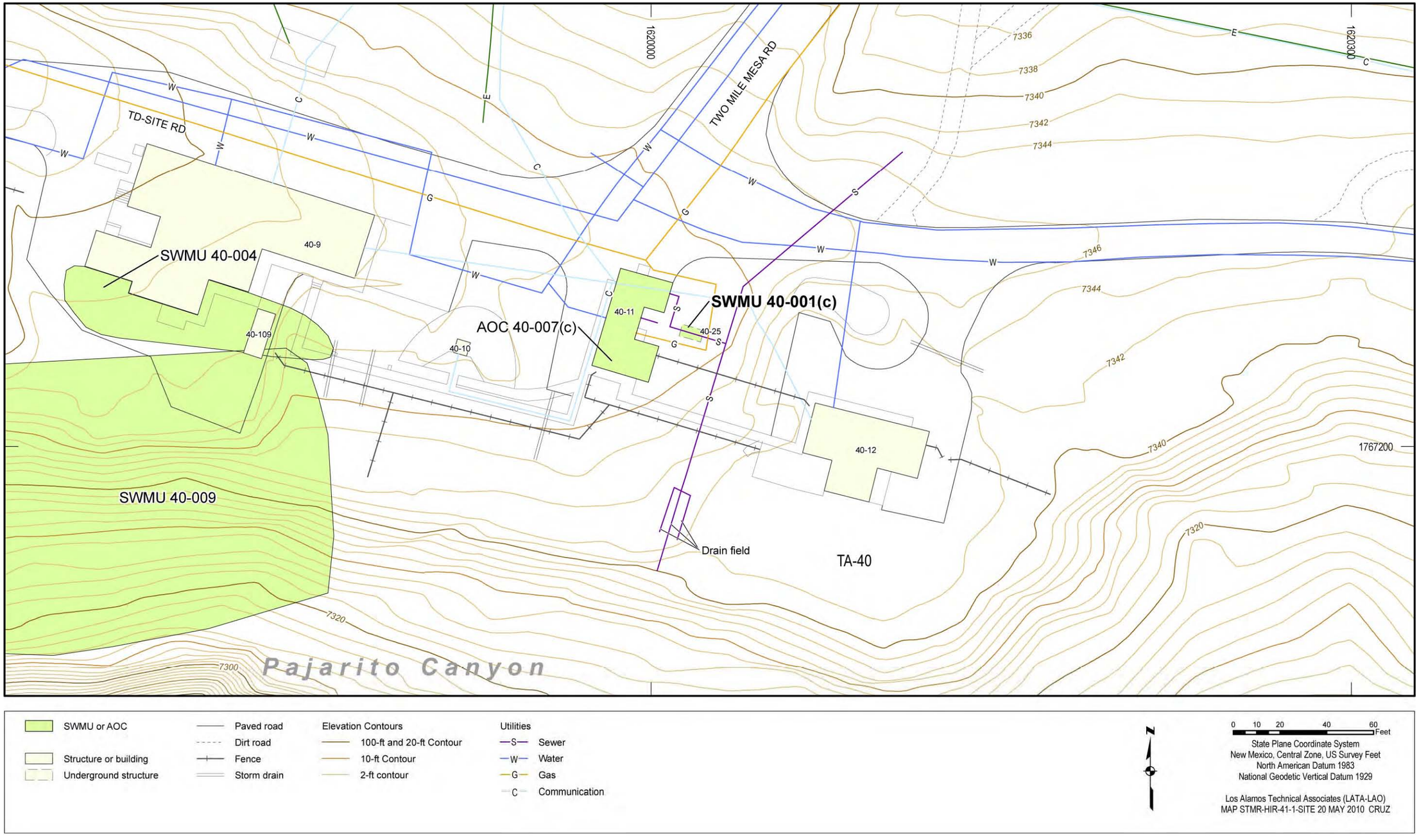


Figure 5.1-1 Site features of SWMU 40-001(c)

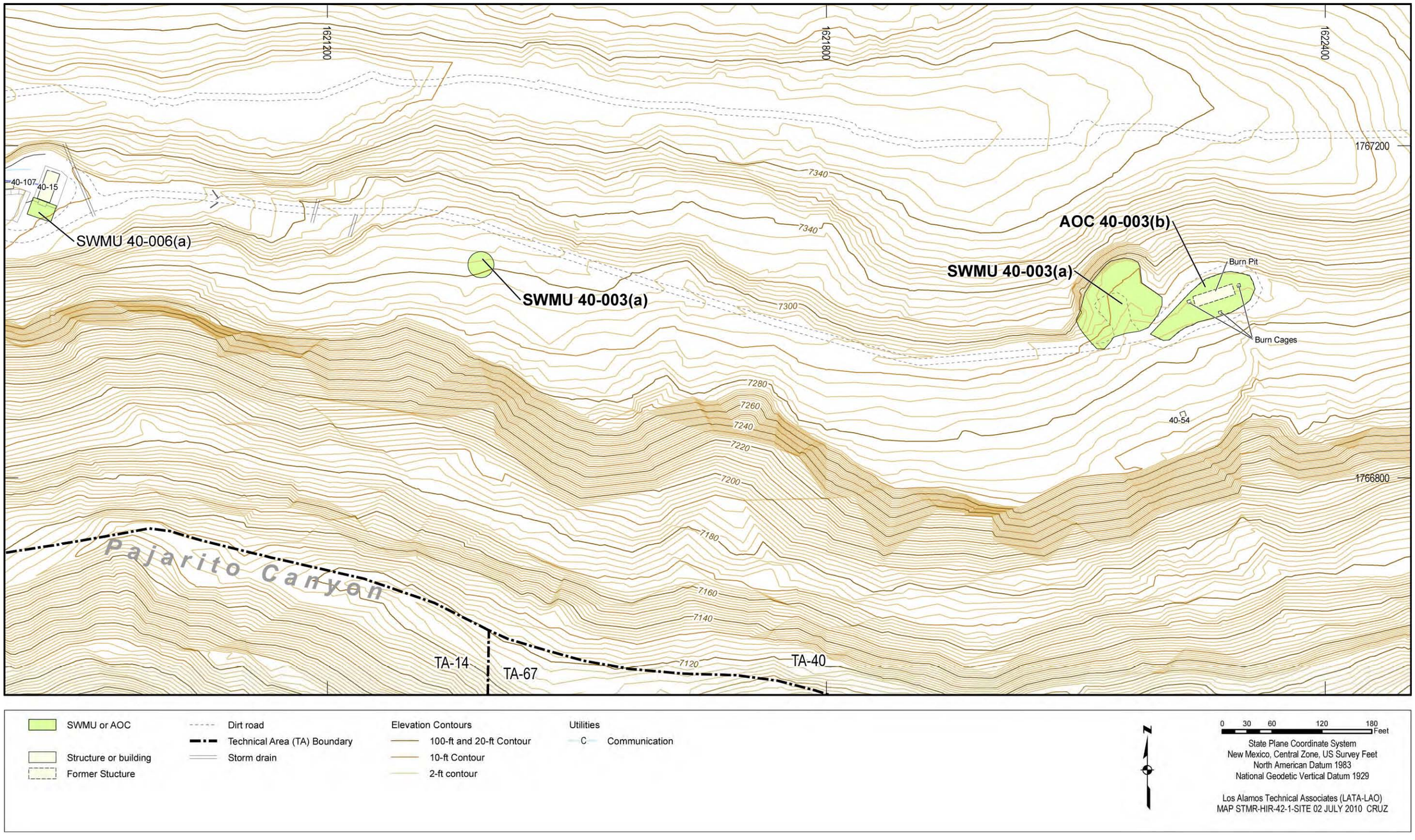


Figure 5.2-1 Site features of SWMU 40-003(a) and AOC 40-003(b)

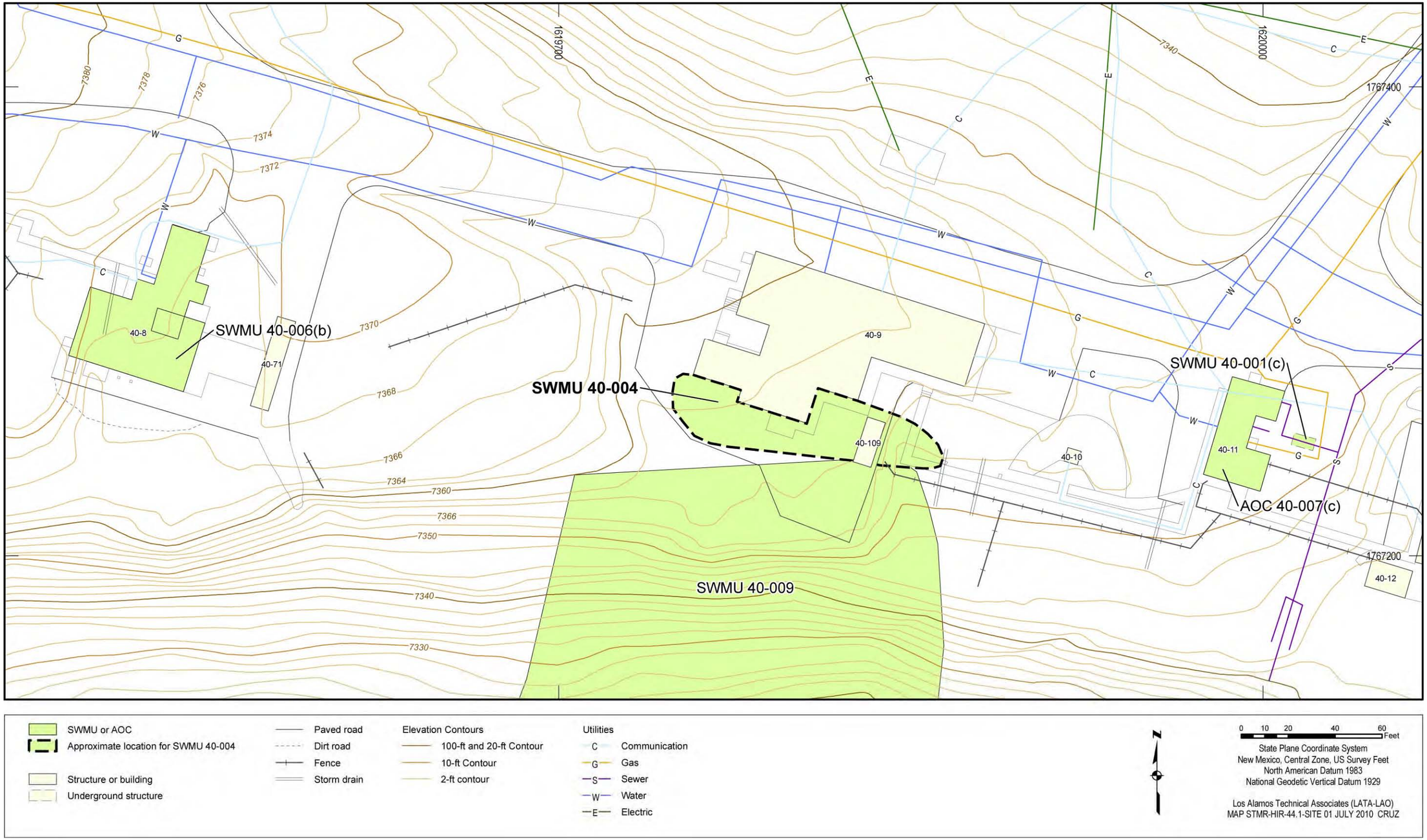


Figure 5.4-1 Site features of SWMU 40-004

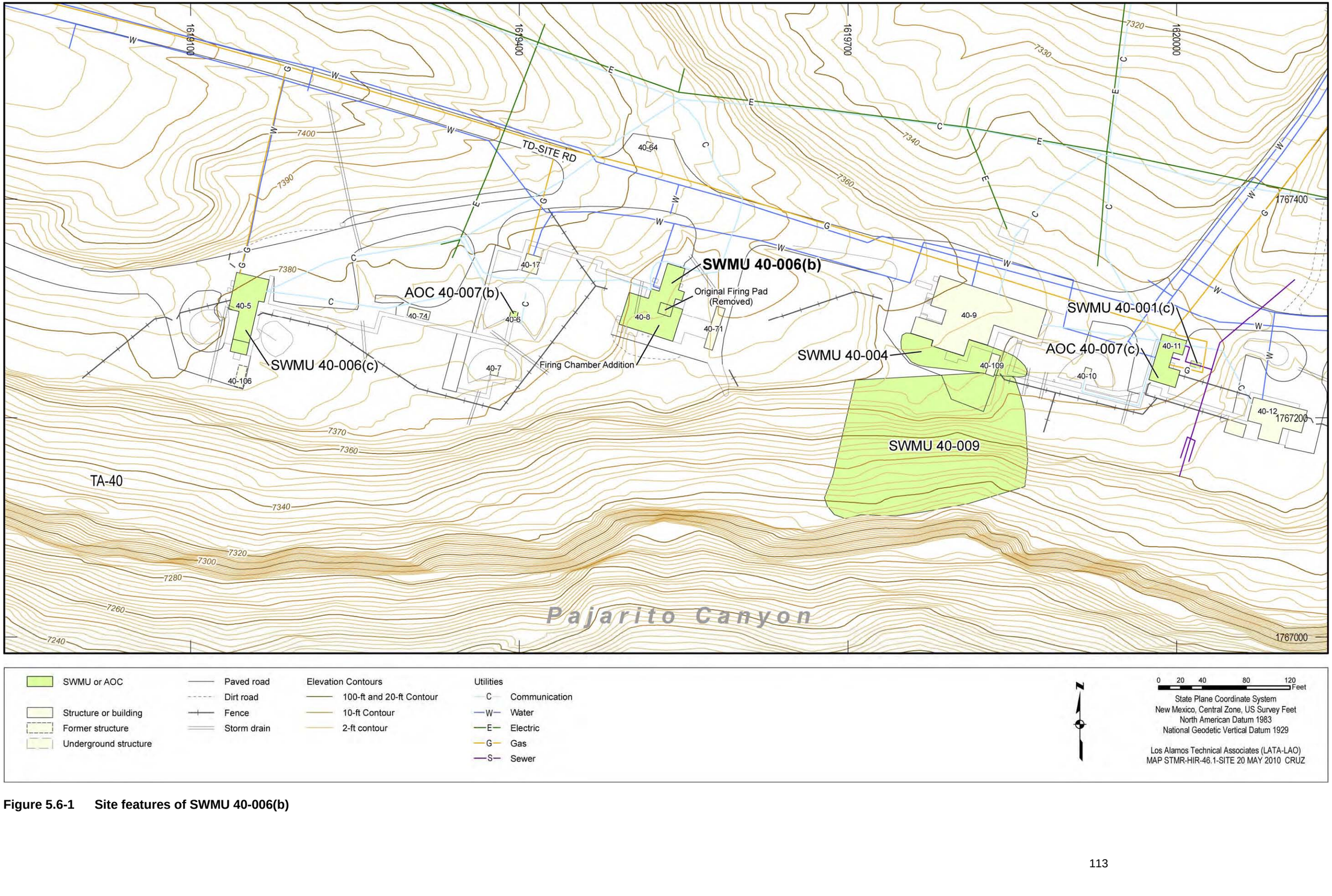


Figure 5.6-1 Site features of SWMU 40-006(b)

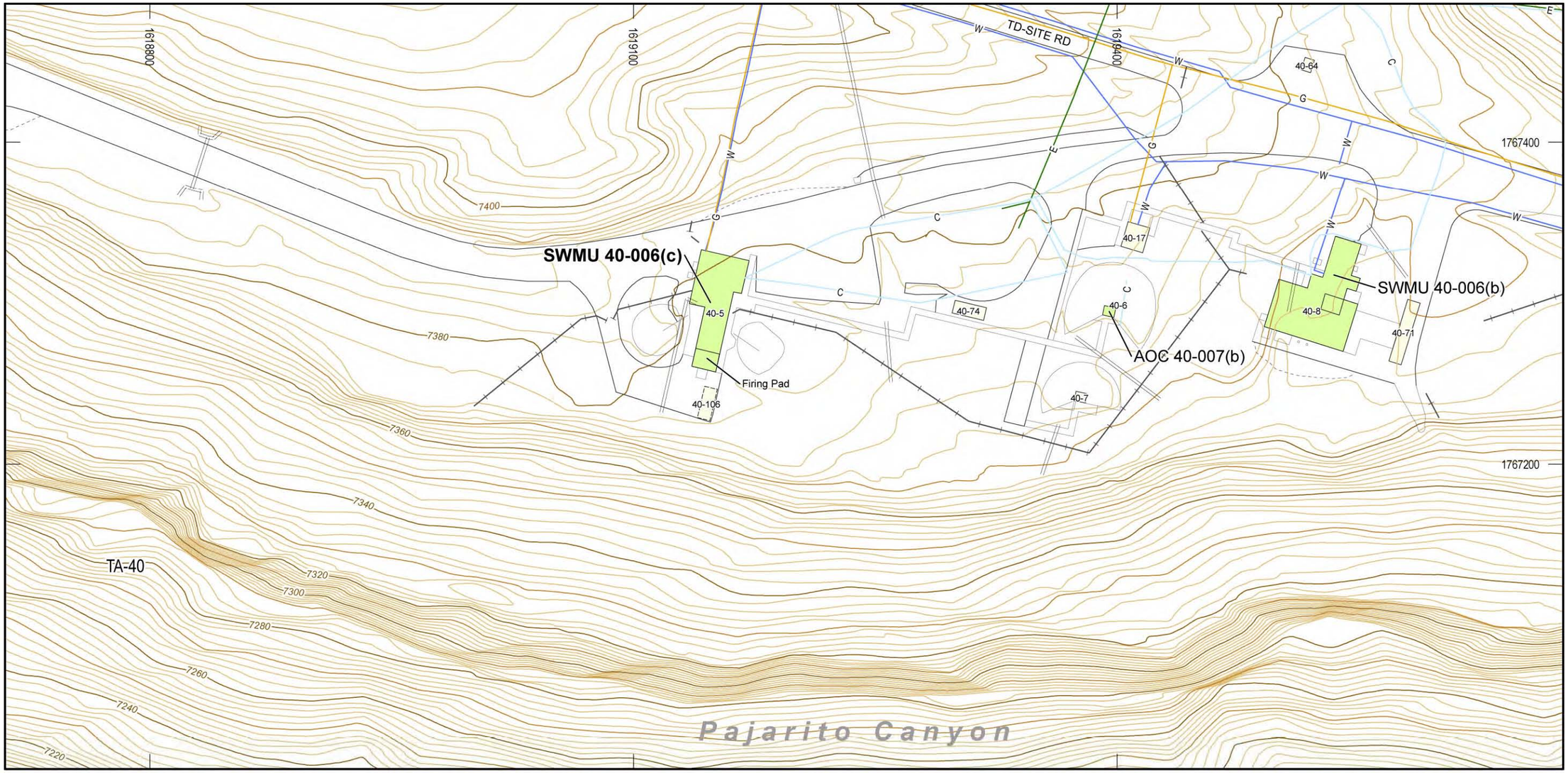


Figure 5.7-1 Site features of SWMU 40-006(c)

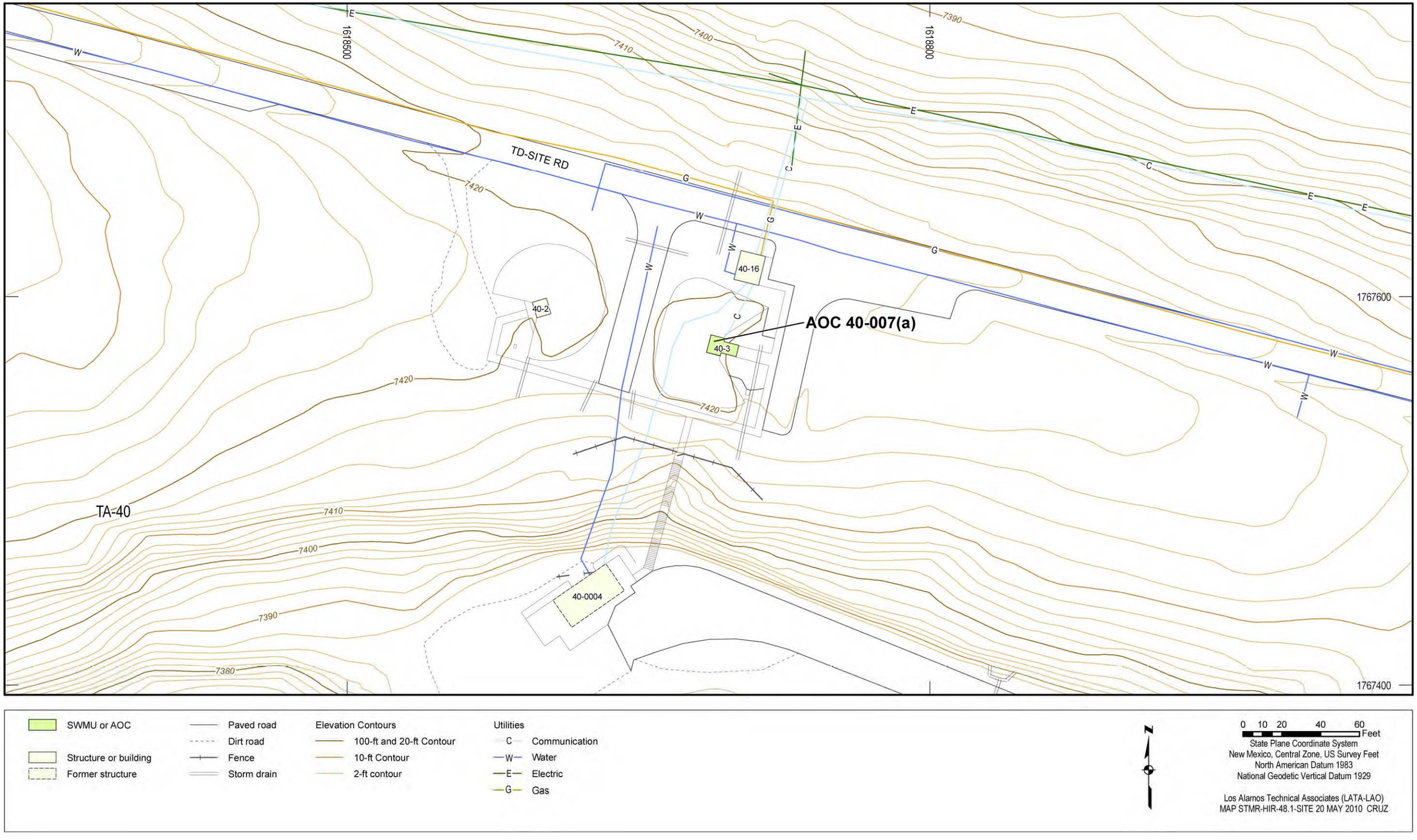


Figure 5.8-1 Site features of AOC 40-007(a)

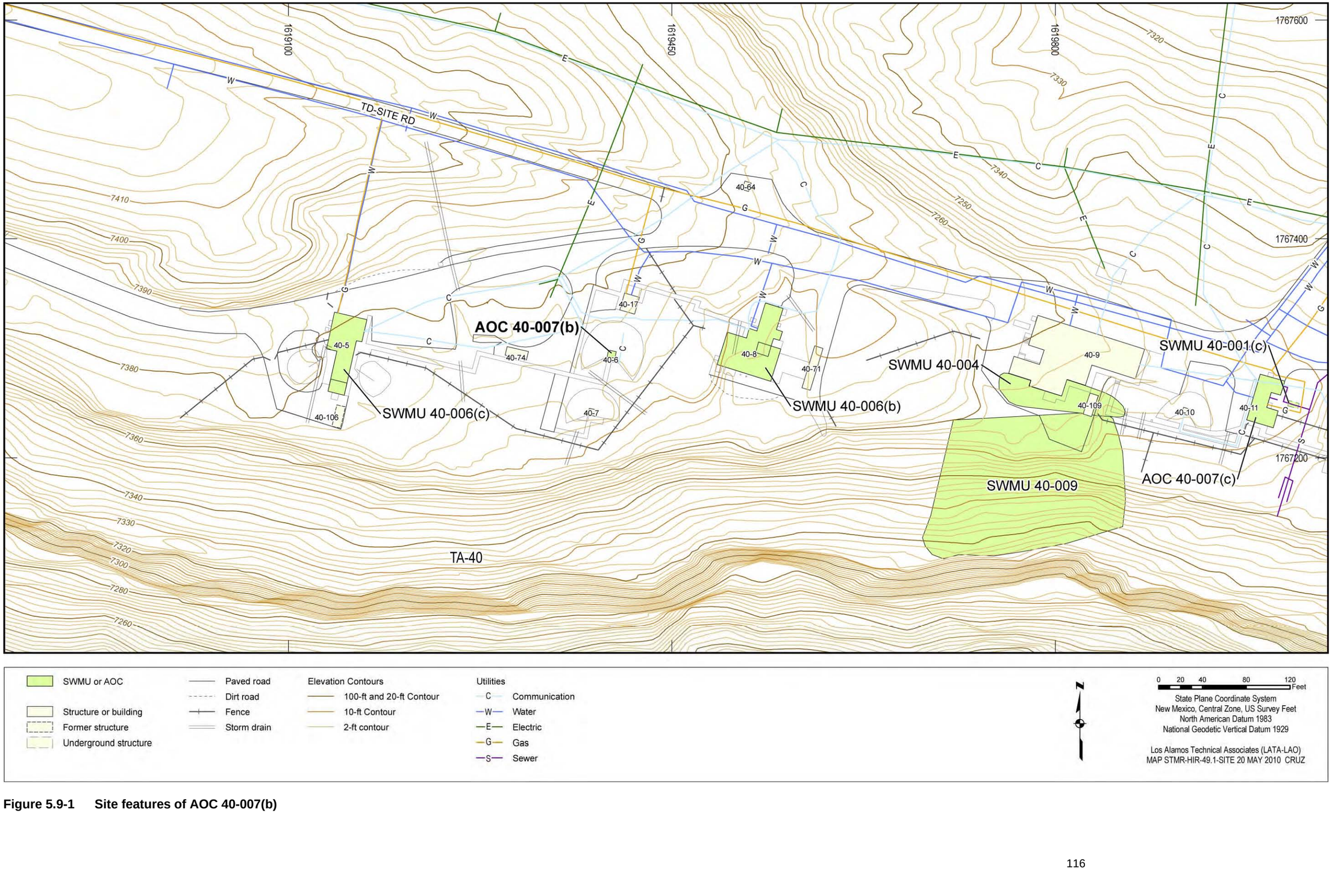


Figure 5.9-1 Site features of AOC 40-007(b)

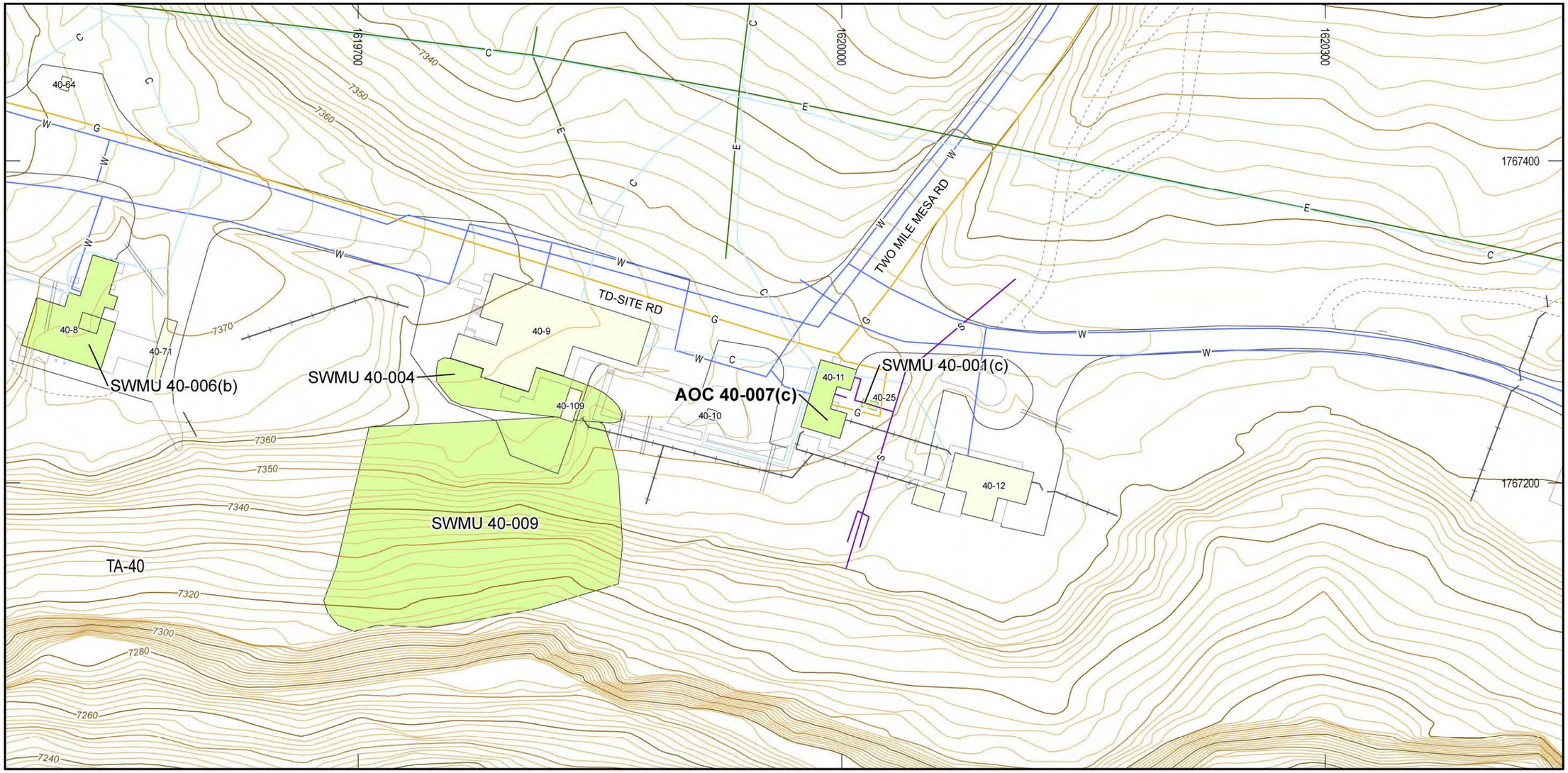


Figure 5.10-1 Site features of AOC 40-007(c)

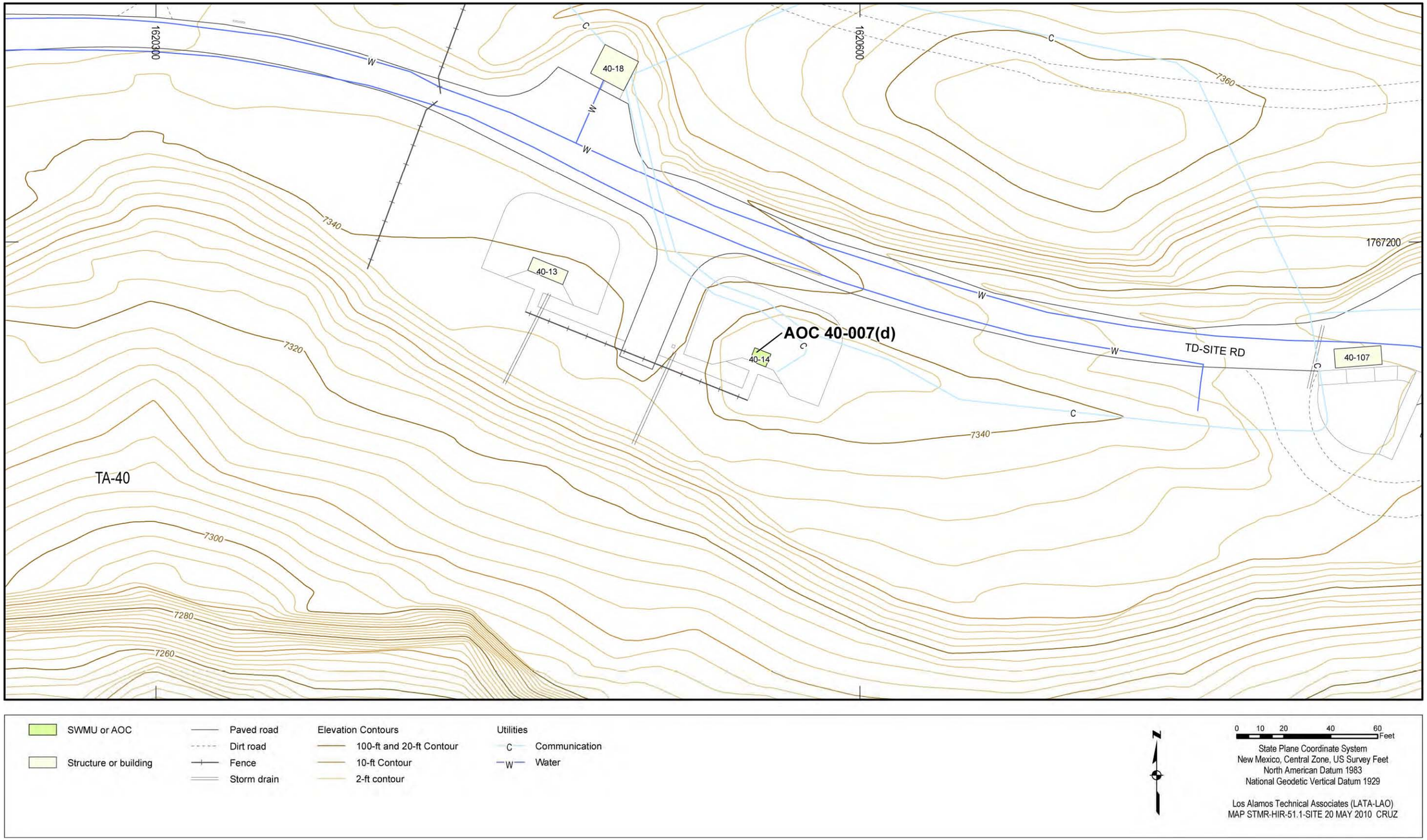


Figure 5.11-1 Site features of AOC 40-007(d)

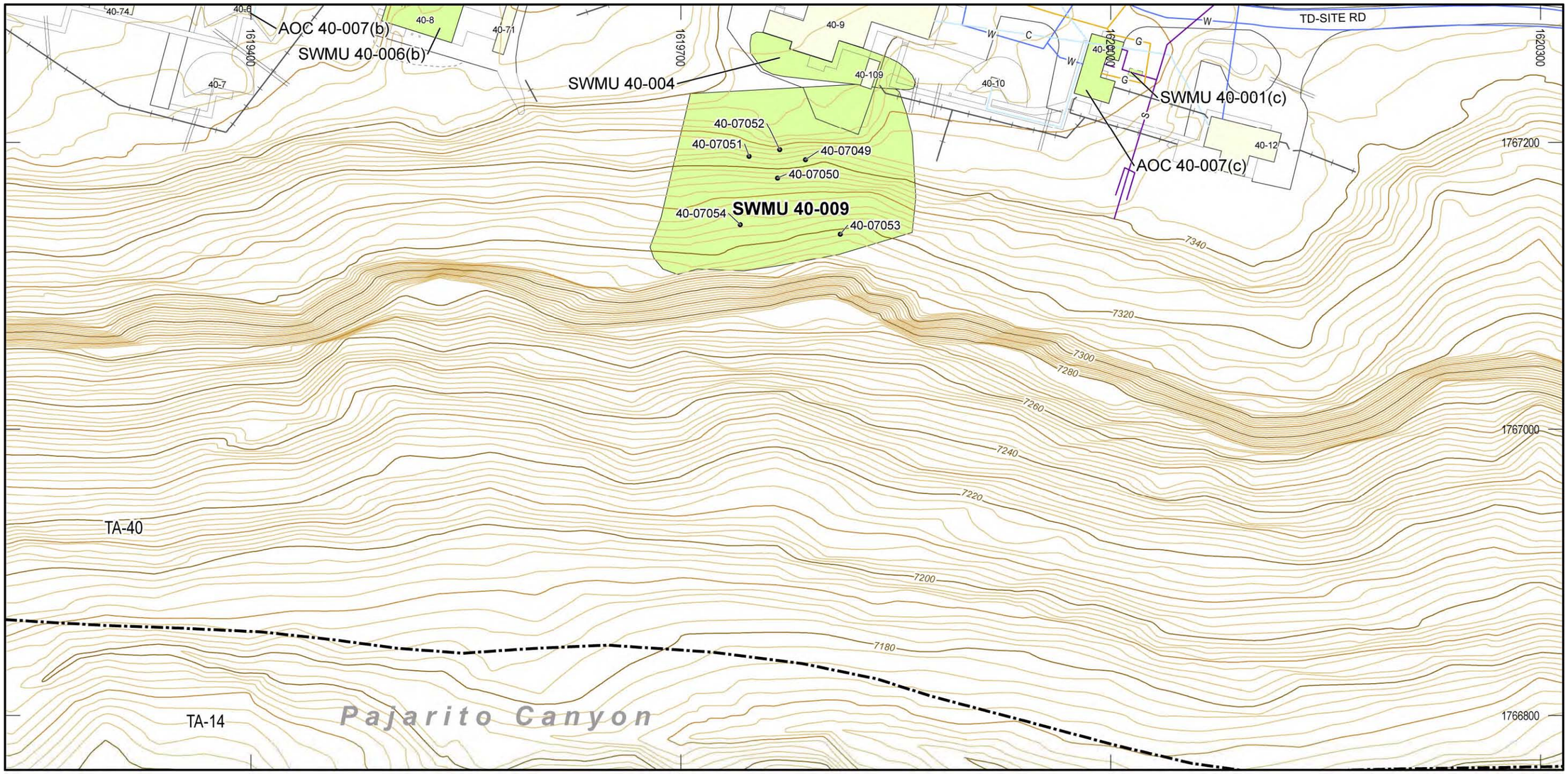


Figure 5.12-1 Site features of SWMU 40-009

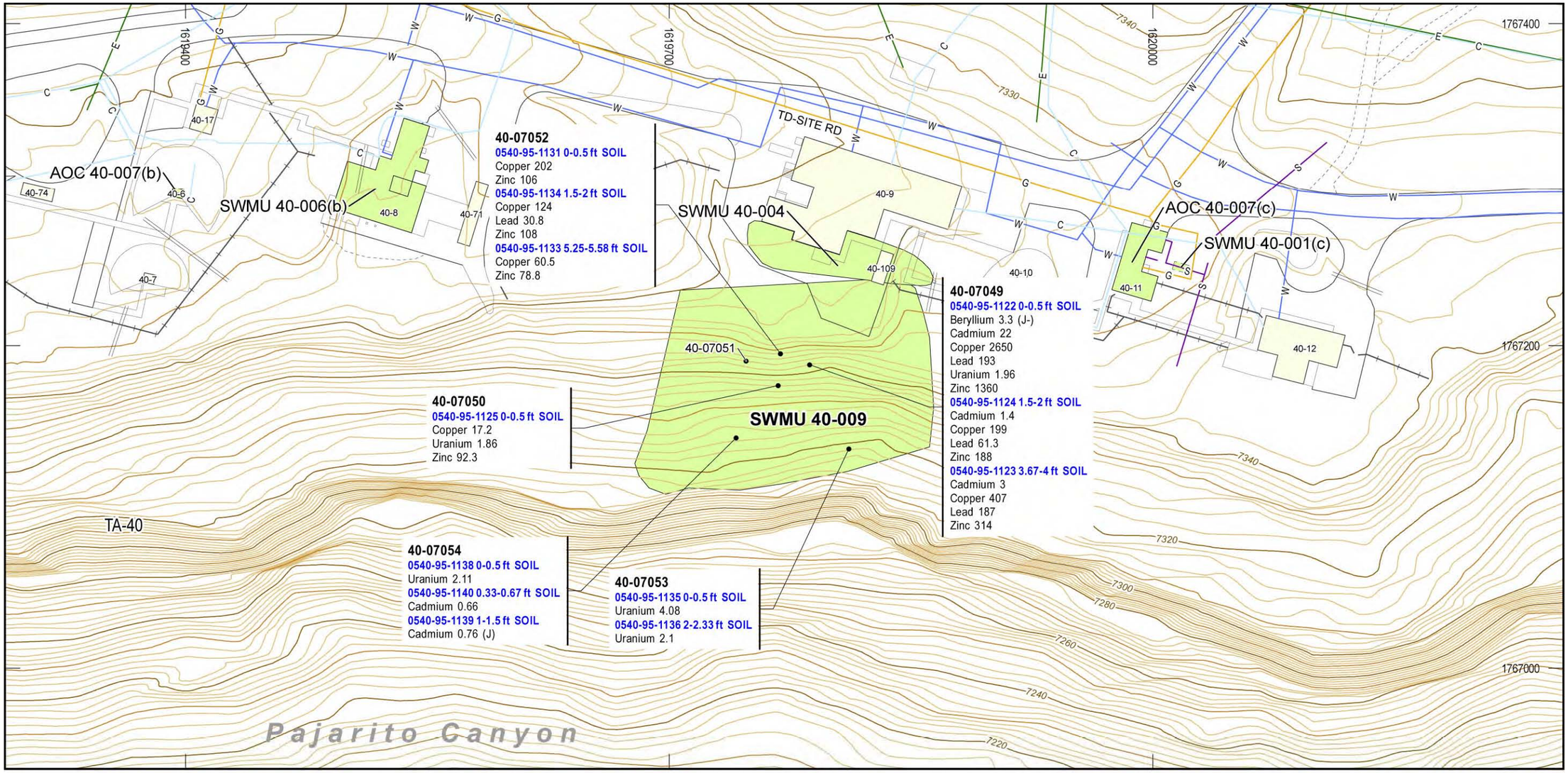


Figure 5.12-2 Inorganic chemicals detected above BVs at SWMU 40-009

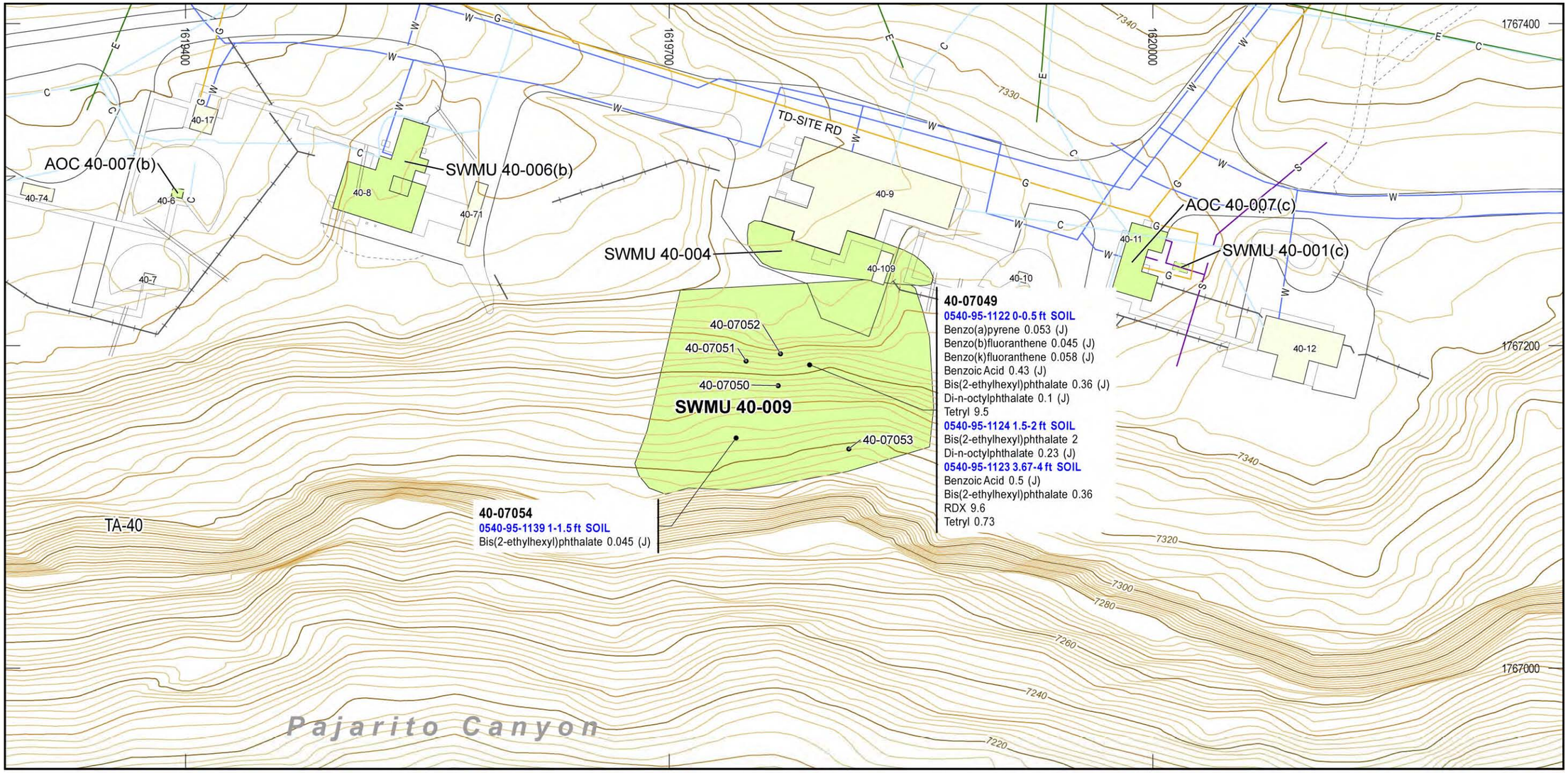


Figure 5.12-3 Organic chemicals detected at SWMU 40-009

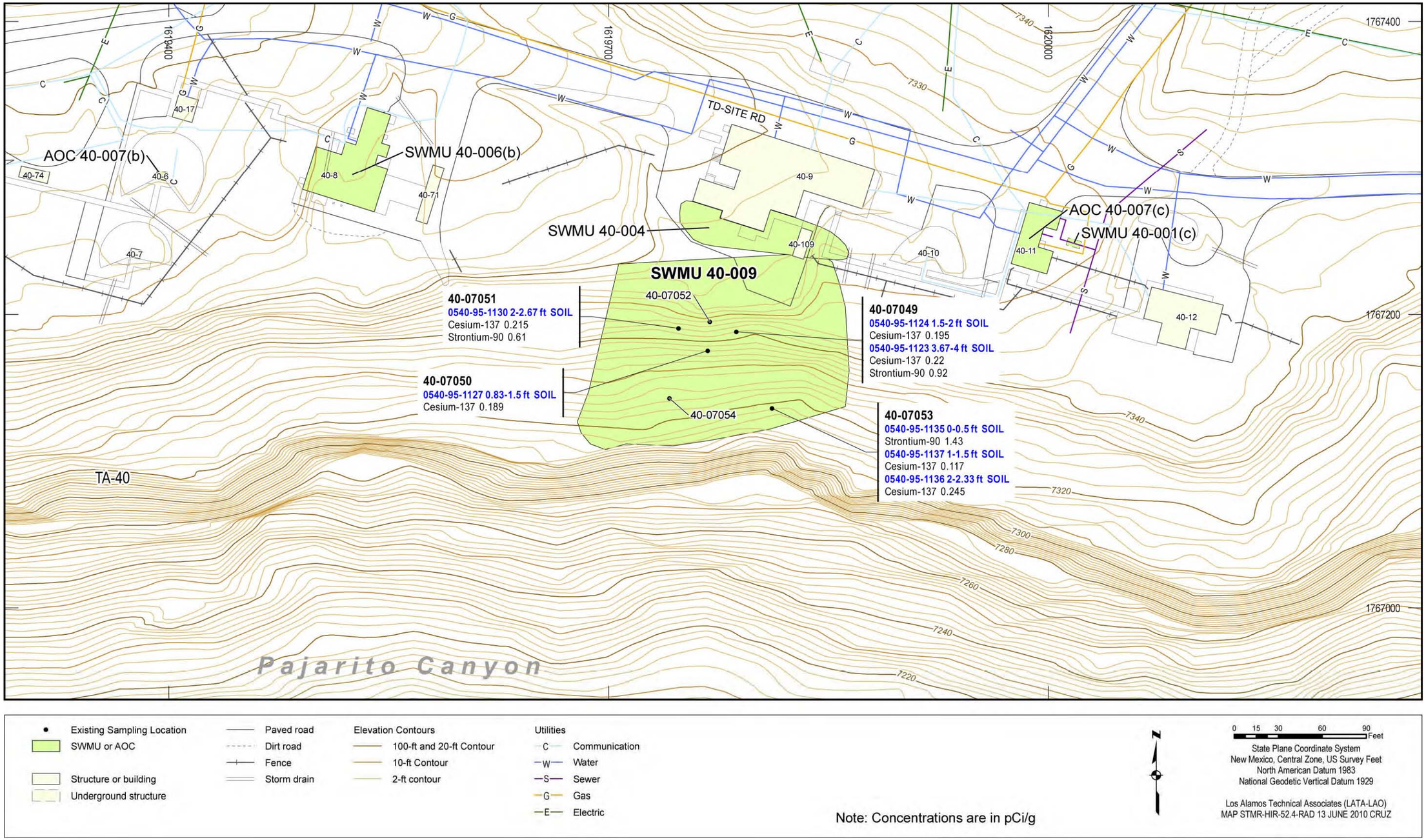


Figure 5.12-4 Radionuclides detected or detected above BVs/FVs at SWMU 40-009

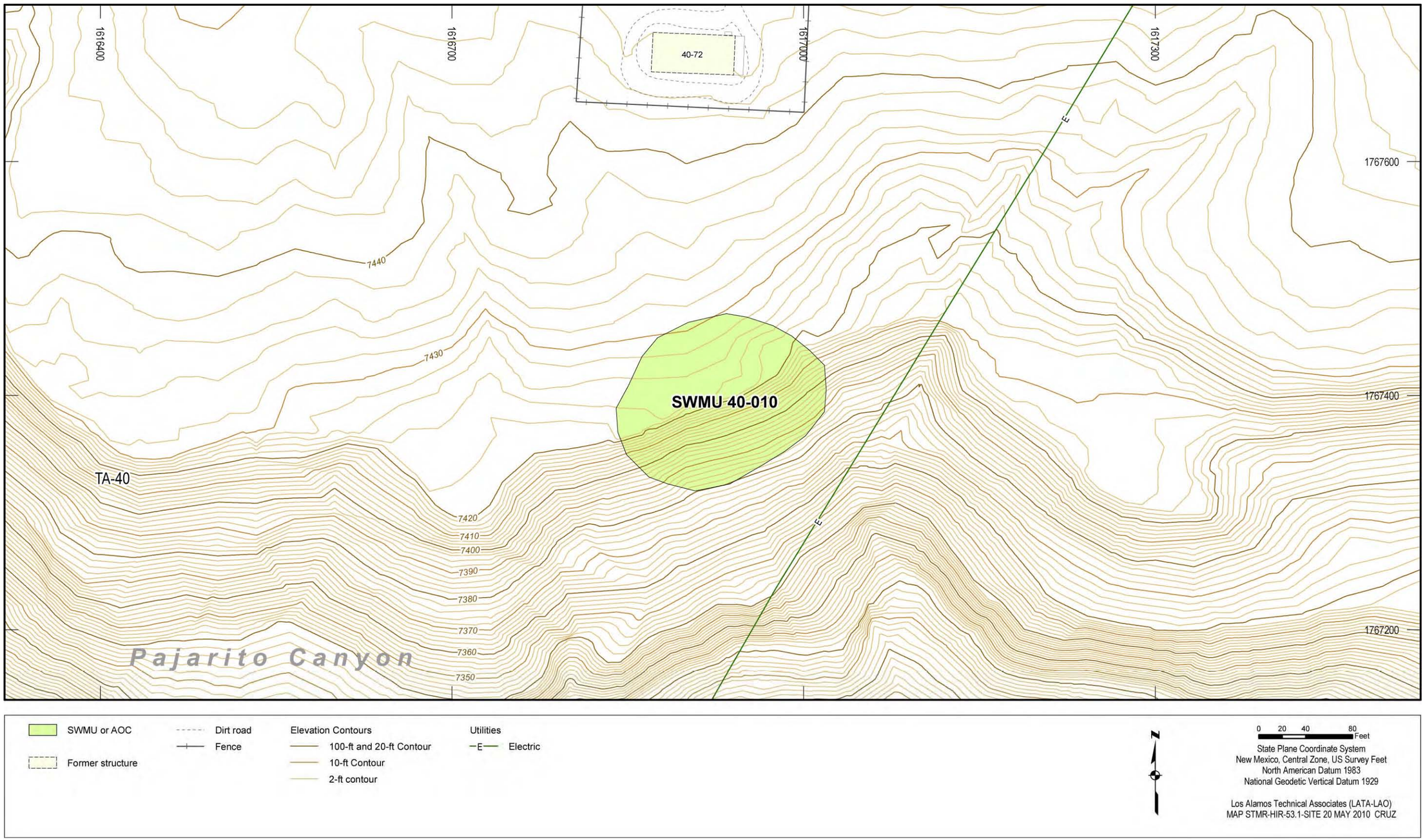


Figure 5.13-1 Site features of SWMU 40-010

Table 1.1-1
SWMUs and AOCs within the Starmer/Upper Pajarito Canyon Aggregate Area

Consolidated Unit	Site ID	Brief Description	Site Status	Reference
TA-08				
	AOC 08-001(a)	Off-Gas System	In progress	HIR section 2.1
	AOC 08-001(b)	Off-Gas System	In progress	HIR section 2.2
	SWMU 08-002	Gun Site	In progress	HIR section 2.3
08-003(a)-00	SWMU 08-003(a)	Decommissioned Septic Tank	In progress	HIR section 2.4.1
	SWMU 08-004(a)	Floor Drains	In progress	HIR section 2.4.2
	SWMU 08-004(b)	Drainline	In progress	HIR section 2.4.3
	SWMU 08-009(a)	Drainline and Outfall	In progress	HIR section 2.4.4
	SWMU 08-003(b)	Septic Tank	Removed from the Laboratory's HWFP*, 12/23/98	NMED 1998, 063042
	SWMU 08-003(c)	Septic System	Removed from the Laboratory's HWFP, 12/23/98	NMED 1998, 063042
	SWMU 08-004(c)	Floor Drain and Sumps	In progress	HIR section 2.5
	SWMU 08-004(d)	Drains	In progress	HIR section 2.6
	SWMU 08-005	Former Crystal Growth Incubator	In progress	HIR section 2.7
	SWMU 08-006(a)	MDA Q	In progress	HIR section 2.8
	SWMU 08-006(b)	Landfill	Removed from the Laboratory's HWFP, 12/23/98	NMED 1998, 063042
	SWMU 08-007	Silver Recovery Unit	Removed from the Laboratory's HWFP, 12/23/98	NMED 1998, 063042
	AOC 08-008(a)	Storage Area	NFA approved	EPA 2005, 088464
	AOC 08-008(b)	Storage Area	NFA approved	EPA 2005, 088464
	AOC 08-008(c)	Storage Area	NFA approved	EPA 2005, 088464
	AOC 08-008(d)	Storage Area	NFA approved	EPA 2005, 088464
	AOC 08-009(b)	Outfall	NFA approved	EPA 2005, 088464
	AOC 08-009(c)	Drainline and Outfall	In progress	HIR section 2.9
	SWMU 08-009(d)	Drains	In progress	HIR section 2.10
	SWMU 08-009(e)	Outfall	In progress	HIR section 2.11
	AOC 08-009(f)	Outfall	In progress	HIR section 2.12
	AOC 08-010(a)	Storage Area	NFA approved	EPA 2005, 088464
	AOC 08-010(b)	Storage Area	NFA approved	EPA 2005, 088464
	AOC 08-010(c)	Storage Area	NFA approved	EPA 2005, 088464
	AOC 08-011(a)	Underground Tank	NFA approved	EPA 2005, 088464

Table 1.1-1 (continued)

Consolidated Unit	Site ID	Brief Description	Site Status	Reference
	AOC 08-011(b)	Underground Tank	NFA approved	EPA 2005, 088464
	AOC C-08-001	Former Building	NFA approved	EPA 2005, 088464
	AOC C-08-002	Former Building	NFA approved	EPA 2005, 088464
	AOC C-08-003	Former Building	NFA approved	EPA 2005, 088464
	AOC C-08-004	Former Building	NFA approved	EPA 2005, 088464
	AOC C-08-005	Former Building	NFA approved	EPA 2005, 088464
	AOC C-08-006	Former Building	NFA approved	EPA 2005, 088464
	AOC C-08-007	Former Building	NFA approved	EPA 2005, 088464
	AOC C-08-008	Former Building	NFA approved	EPA 2005, 088464
	AOC C-08-009	Former Building	NFA approved	EPA 2005, 088464
	SWMU C-08-010	Former Building	Removed from the Laboratory's HWFP, 04/22/07	NMED 2007, 095495
	AOC C-08-011	Former Building	NFA approved	EPA 2005, 088464
	AOC C-08-012	Former Building	NFA approved	EPA 2005, 088464
	AOC C-08-013	Former Building	NFA approved	EPA 2005, 088464
	AOC C-08-014	Building	In progress	HIR section 2.13
	AOC C-08-015	Former Building	NFA approved	EPA 2005, 088464
	AOC C-08-016	Building	NFA approved	EPA 2005, 088464
	AOC C-08-017	Storage Area	NFA approved	EPA 2005, 088464
	AOC C-08-018	Storage Area	NFA approved	EPA 2005, 088464
	AOC C-08-019	Storage Area	NFA approved	EPA 2005, 088464
	AOC C-08-020	Disposal Area	NFA approved	EPA 2005, 088464
TA-09				
09-001(a)-99	SWMU 09-001(a)	Former Firing Site and Control Building	In progress	HIR section 3.1.1
	SWMU 09-001(b)	Former Firing Site Control Building	In progress	HIR section 3.1.2
	AOC C-09-005	Former X-Unit Chamber	NFA approved	EPA 2005, 088464
	SWMU 09-001(c)	Former Recovery Pit	In progress	HIR section 3.2
	SWMU 09-001(d)	Former Firing Chambers	In progress	HIR section 3.3
	SWMU 09-002	Burn Pit	In progress	HIR section 3.4
09-003(a)-99	SWMU 09-003(a)	Former Sump	In progress	HIR section 3.5.1
	SWMU 09-003(b)	Former Sump	In progress	HIR section 3.5.2
	SWMU 09-003(e)	Former Basket Washing Pit	In progress	HIR section 3.5.3
	SWMU 09-003(c)	Manhole	Removed from the Laboratory's HWFP, 12/23/98	NMED 1998, 063042

Table 1.1-1 (continued)

Consolidated Unit	Site ID	Brief Description	Site Status	Reference
	SWMU 09-003(d)	Former Sump	In progress	HIR section 3.6
	SWMU 09-003(f)	Sump	Removed from the Laboratory's HWFP, 12/23/98	NMED 1998, 063042
	SWMU 09-003(g)	Former Sump and Pipes	In progress	HIR section 3.7
	SWMU 09-003(h)	Former Sump and Pipes	In progress	HIR section 3.8
	SWMU 09-003(i)	Former Sump and Pipes	In progress	HIR section 3.9
09-004(a)-99	SWMU 09-004(a)	Sump	In progress	HIR section 3.10.1
	SWMU 09-004(b)	Sump	In progress	HIR section 3.10.2
	SWMU 09-004(c)	Sump	In progress	HIR section 3.10.3
	SWMU 09-004(d)	Sump	In progress	HIR section 3.10.4
	SWMU 09-004(e)	Sump	In progress	HIR section 3.10.5
	SWMU 09-004(f)	Sump	In progress	HIR section 3.10.6
	SWMU 09-004(h)	Sump	In progress	HIR section 3.10.7
	SWMU 09-004(i)	Sump	In progress	HIR section 3.10.8
	SWMU 09-004(j)	Sump	In progress	HIR section 3.10.9
	SWMU 09-004(k)	Sump	In progress	HIR section 3.10.10
	SWMU 09-004(l)	Sump	In progress	HIR section 3.10.11
	SWMU 09-004(m)	Sump	In progress	HIR section 3.10.12
	SWMU 09-004(n)	Sump	In progress	HIR section 3.10.13
	SWMU 09-004(g)	Sump	In progress	HIR section 3.11
	SWMU 09-004(o)	Sump	In progress	HIR section 3.12
	SWMU 09-005(b)	Septic System	Removed from the Laboratory's HWFP, 12/23/98	NMED 1998, 063042
	SWMU 09-005(c)	Septic System	Removed from the Laboratory's HWFP, 12/23/98	NMED 1998, 063042
	SWMU 09-005(e)	Septic System	Removed from the Laboratory's HWFP, 12/23/98	NMED 1998, 063042
	SWMU 09-005(f)	Septic System	Removed from the Laboratory's HWFP, 12/23/98	NMED 1998, 063042
	SWMU 09-005(g)	Septic System	In progress	HIR section 3.13
	SWMU 09-005(h)	Septic System	Removed from the Laboratory's HWFP, 12/23/98	NMED 1998, 063042
	SWMU 09-006	Former Septic Tank	In progress	HIR section 3.14

Table 1.1-1 (continued)

Consolidated Unit	Site ID	Brief Description	Site Status	Reference
	SWMU 09-007	Basket Pit	Removed from the Laboratory's HWFP, 12/23/98	NMED 1998, 063042
	AOC 09-008(a)	Surface Impoundment	NFA approved	EPA 2005, 088464
09-008(b)-99	SWMU 09-005(a)	Former Septic System	In progress	HIR section 3.15.1
	SWMU 09-005(d)	Septic Tank	In progress	HIR section 3.15.2
	SWMU 09-008(b)	Oxidation Pond	In progress	HIR section 3.15.3
	SWMU 09-009	Surface Impoundment	In progress	HIR section 3.16
	AOC 09-010(a)	Storage Area	In progress	HIR section 3.17
	AOC 09-010(b)	Storage Area	In progress	HIR section 3.18
	AOC 09-010(c)	Storage Area	NFA approved	EPA 2005, 088464
	AOC 09-011(a)	Storage Area	NFA approved	EPA 2005, 088464
	AOC 09-011(b)	Storage Area	In progress	HIR section 3.19
	AOC 09-011(c)	Storage Area	In progress	HIR section 3.20
	AOC 09-012	Disposal Pit	In progress	HIR section 3.21
	SWMU 09-013	MDA M	In progress	HIR section 3.22
	AOC 09-014	Firing Site	In progress	HIR section 3.23
	AOC 09-015	Manhole	NFA approved	EPA 2005, 088464
	AOC 09-016	Underground Storage Tank	NFA approved	EPA 2005, 088464
	SWMU C-09-001	Area of Soil Contamination	In progress	HIR section 3.24
	AOC C-09-002	Former Buildings	NFA approved	EPA 2005, 088464
	AOC C-09-003	Former Buildings	NFA approved	EPA 2005, 088464
	AOC C-09-004	Former Building	NFA approved	EPA 2005, 088464
	AOC C-09-006	Former Buildings	NFA approved	EPA 2005, 088464
	AOC C-09-007	Former Building	NFA approved	EPA 2005, 088464
	AOC C-09-008	Underground Storage Tank	NFA approved	EPA 2005, 088464
	AOC C-09-009	Non-intentional Release	NFA approved	EPA 2005, 088464
	AOC C-09-010	Burn Site-doesn't exist	NFA approved	EPA 2005, 088464
	AOC C-09-011	Burn Site	NFA approved	EPA 2005, 088464
TA-22				
	AOC 22-001	Magazine	NFA approved	EPA 2005, 088464
	SWMU 22-011	Disposal Pit	In progress	HIR section 4.1
	AOC 22-014(c)	Unit does not exist	NFA approved	EPA 2005, 088464
	SWMU 22-015(c)	Drainline and Outfall	In progress	HIR section 4.2
22-015(d)-99	SWMU 22-010(b)	Septic System	In progress	HIR section 4.3.1
	SWMU 22-012	Wash Area	In progress	HIR section 4.3.2
	SWMU 22-015(d)	Drain and Seepage Pit	In progress	HIR section 4.3.3

Table 1.1-1 (continued)

Consolidated Unit	Site ID	Brief Description	Site Status	Reference
	SWMU 22-015(e)	Sump	In progress	HIR section 4.3.4
	SWMU 22-016	Septic Tank	In progress	HIR section 4.3.5
TA-40				
	SWMU 40-001(c)	Septic Tank	In progress	HIR section 5.1
	AOC 40-002(b)	SAA	NFA approved	EPA 2005, 088464
	AOC 40-002(c)	SAA	NFA approved	EPA 2005, 088464
	SWMU 40-003(a)	Open Detonation Area	In progress	HIR section 5.2
	AOC 40-003(b)	Burn Site	In progress	HIR section 5.3
	SWMU 40-004	Storage Area	In progress	HIR section 5.4
	SWMU 40-006(a)	Firing Site	Deferred	Table IV-2 of the Consent Order HIR section 5.5
	SWMU 40-006(b)	Firing Site	Deferred	Table IV-2 of the Consent Order HIR section 5.6
	SWMU 40-006(c)	Firing Site	Deferred	Table IV-2 of the Consent Order HIR section 5.7
	AOC 40-007(a)	Storage Area	In progress	HIR section 5.8
	AOC 40-007(b)	Storage Area	In progress	HIR section 5.9
	AOC 40-007(c)	Storage Area	In progress	HIR section 5.10
	AOC 40-007(d)	Storage Area	In progress	HIR section 5.11
	AOC 40-008	HE Storage Area Decommissioned	NFA approved	EPA 2005, 088464
	SWMU 40-009	Landfill	In progress	HIR section 5.12
	SWMU 40-010	Surface Disposal Area	In progress	HIR section 5.13
	AOC C-40-001	Area of Potential Soil Contamination	NFA approved	EPA 2005, 088464

Note: Shading denotes NFA approved.

*HWFP = Hazardous Waste Facility Permit.

Table 2.4-1
Samples Collected and Analyses Requested at SWMU 08-009(a)

Sample ID	Location ID	Depth (ft)	Media	HE	Metals	PCB	SVOC
0508-97-0008	08-03100	0–0.5	SED	3850R	3851R	3848R	3848R
0508-97-0009	08-03100	1–1.5	SED	3850R	3851R	3848R	3848R
0508-97-0010	08-03100	2–2.5	SED	3850R	3851R	3848R	3848R
0508-97-0011	08-03100	3–3.5	SED	3850R	3851R	3848R	3848R
0508-97-0012	08-03100	4–4.5	SED	3850R	3851R	3848R	3848R

Note: Numbers in analyte columns are request numbers.

Table 2.4-2
Inorganic Chemicals above BVs at SWMU 08-009(a)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Cobalt	Copper	Lead	Mercury	Selenium	Silver	Zinc
Sediment Background Value[a]				**0.83**	**0.4**	**4.73**	**11.2**	**19.7**	**0.1**	**0.3**	**1**	**60.2**
Construction Worker SSL[b]				**124**	**309**	**34.6**[c]	**12,400**	**800**	**92.9**	**1550**	**1550**	**92,900**
Industrial SSL[b]				**454**	**1120**	**300**[d]	**45,400**	**800**	**310**[d]	**5680**	**5680**	**341,000**
Residential SSL[b]				**31.3**	**77.9**	**23**[d]	**3130**	**400**	**23**[d]	**391**	**391**	**23,500**
Recreational SSL[b]				**317**	**784**	**238**	**31,700**	**560**	**238**	**3960**	**3960**	**238,000**
0508-97-0008	08-03100	0–0.5	SED	—[e]	—	—	14.3	—	—	—	—	—
0508-97-0009	08-03100	1–1.5	SED	—	—	4.82 (J)	—	31.9	—	0.341 (U)	—	—
0508-97-0010	08-03100	2–2.5	SED	0.834 (J)	0.575	4.81 (J)	28.2	42.5	0.14	0.357 (U)	—	65
0508-97-0011	08-03100	3–3.5	SED	—	—	5.85	—	24.2	0.271	0.323 (U)	—	—
0508-97-0012	08-03100	4–4.5	SED	—	—	—	—	—	0.16	—	2.7	—

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

[a] BVs are from LANL 1998, 059730.

[b] SSLs are from NMED 2009, 108070, unless otherwise noted.

[c] 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).

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

[e] — = Not detected or not above BV.

Table 2.4-3
Organic Chemicals Detected at SWMU 08-009(a)

Sample ID	Location ID	Depth (ft)	Media	Bis(2-ethylhexyl)phthalate	HMX	RDX	Trinitrotoluene[2,4,6-]
Construction Worker SSL[a]				**4760**	**11,900**	**715**	**141**
Industrial SSL[a]				**1370**	**34,200**	**174**	**469**
Residential SSL[a]				**347**	**3060**	**44.2**	**35.9**
Recreational SSL[a]				**1830**	**19,900**	**233**	**301**
0508-97-0008	08-03100	0–0.5	SED	0.05 (J)	—[b]	—	—
0508-97-0010	08-03100	2–2.5	SED	—	0.614	4.15	5.74
0508-97-0011	08-03100	3–3.5	SED	—	—	1.15	1.71
0508-97-0012	08-03100	4–4.5	SED	—	—	—	0.204

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

[a] SSLs are from NMED 2009, 108070.

[b] — = Not detected.

Table 2.9-1
Samples Collected and Analyses Requested at AOC 08-009(c)

Sample ID	Location ID	Depth (ft)	Media	PCB
0508-97-0001	08-01100	0–0.5	SOIL	3848R
0508-97-0002	08-01101	0–0.5	SOIL	3848R
0508-97-0003	08-01102	0–0.5	SOIL	3848R
0508-97-0004	08-01103	0–0.5	SED	3848R
0508-97-0005	08-01104	0–0.5	SED	3848R
0508-97-0006	08-01105	0–0.5	SED	3848R
0508-97-0007	08-01106	0–0.5	SED	3848R

Note: Numbers in analyte columns are request numbers.

Table 2.9-2
Organic Chemicals Detected at AOC 08-009(c)

Sample ID	Location ID	Depth (ft)	Media	Aroclor-1260
Construction Worker SSL*				**7.58**
Industrial SSL*				**8.26**
Residential SSL*				**2.22**
0508-97-0001	08-01100	0–0.5	SOIL	0.12
0508-97-0002	08-01101	0–0.5	SOIL	0.038 (J)

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

***** SSLs are from NMED 2009, 108070.

Table 3.2-1
Samples Collected and Analyses Requested at SWMU 09-001(c)

Sample ID	Location ID	Depth (ft)	Media	HE	Metals	NITRATE-Nitrite as Nitrogen
0509-95-0039	09-06050	8.5–10	QBT2	143	144	144
0509-95-0043	09-06054	8.5–10	QBT2	143	144	144
0509-95-0044	09-06055	8.5–9.5	QBT2	143	144	144

Note: Numbers in analyte columns are request numbers.

Table 3.2-2
Inorganic Chemicals above BVs at SWMU 09-001(c)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Calcium	Chromium	Cobalt	Copper	Lead	Nickel	NITRATE-Nitrite as Nitrogen	Selenium	Vanadium
Qbt 2, 3, 4 Background Value[a]				**7340**	**0.5**	**2.79**	**46**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**6.58**	**na**[b]	**0.3**	**17**
Construction Worker SSL[c]				**40,700**	**124**	**65.4**	**4350**	**na**	**449**[d]	**34.6**[e]	**12,400**	**800**	**6190**	**na**	**1550**	**1550**
Industrial SSL[c]				**1,130,000**	**454**	**17.7**	**224,000**	**na**	**2920**[d]	**300**[f]	**45,400**	**800**	**22,700**	**na**	**5680**	**5680**
Residential SSL[c]				**78,100**	**31.3**	**3.9**	**15,600**	**na**	**219**[d]	**23**[f]	**3130**	**400**	**1560**	**na**	**391**	**391**
0509-95-0039	09-06050	8.5–10	QBT2	9510	0.54 (J-)	3.1	151	3750	7.6	4.8 (J)	11	44.8	10.2	9	0.88 (J)	17.3
0509-95-0043	09-06054	8.5–10	QBT2	10,900	0.53 (J-)	3.2	142	3830	7.4	6.4 (J)	5.9	14.4	—[g]	—	1 (J)	17.9
0509-95-0044	09-06055	8.5–9.5	QBT2	—	0.52 (J-)	—	75.4	8850	—	—	—	—	—	—	0.56 (J)	—

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

[a] BVs are from LANL 1998, 059730.

[b] na = not available.

[c] SSLs are from NMED 2009, 108070, unless otherwise noted.

[d] SSLs are for hexavalent chromium.

[e] 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).

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

[g] — = Not detected or not above BV

Table 3.5-1
Samples Collected and Analyses Requested at SWMU 09-003(a)

Sample ID	Location ID	Depth (ft)	Media	H3	HE	Metals	VOC	Cyanide (Total)
0509-95-0018	09-05250	6.5–7.5	QBT2	—*	119	123	119	123
0509-95-0020	09-05251	8–9	QBT2	—	119	123	119	123
0509-95-0021	09-05252	6–7.25	QBT2	126	119	123	119	123
0509-95-0022	09-05253	6.5–7.5	QBT2	—	119	123	119	123
0509-95-0023	09-05254	7–8	QBT2	—	119	123	119	123
0509-95-0024	09-05255	7–8	QBT2	—	119	123	119	123

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

Table 3.5-2
Inorganic Chemicals above BVs at SWMU 09-003(a)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Calcium	Selenium
Qbt 2, 3, 4 Background Value[a]				**0.5**	**46**	**2200**	**0.3**
Construction Worker SSL[b]				**124**	**4350**	**na**[c]	**1550**
Industrial SSL[b]				**454**	**224,000**	**na**	**5680**
Residential SSL[b]				**31.3**	**15,600**	**na**	**391**
0509-95-0018	09-05250	6.5–7.5	QBT2	0.58 (J-)	—[d]	2220	0.44 (U)
0509-95-0020	09-05251	8–9	QBT2	0.58 (J-)	—	3130	0.44 (U)
0509-95-0021	09-05252	6–7.25	QBT2	0.64 (J-)	57.8	—	0.49 (U)
0509-95-0022	09-05253	6.5–7.5	QBT2	0.58 (J-)	—	—	0.44 (U)
0509-95-0023	09-05254	7–8	QBT2	0.58 (J-)	—	—	0.44 (U)
0509-95-0024	09-05255	7–8	QBT2	0.58 (J-)	—	—	0.44 (U)

Notes: Results are in mg/kg. Data qualifiers are in Appendix A.
[a] BVs are from LANL 1998, 059730.
[b] SSLs are from NMED 2009, 108070.
[c] na = not available.
[d] — = Not detected or not above BV.

Table 3.5-3
Organic Chemicals Detected at SWMU 09-003(a)

Sample ID	Location ID	Depth (ft)	Media	RDX	Toluene
Construction Worker SSL[a]				**715**	**21,100**
Industrial SSL[a]				**174**	**57,900**
Residential SSL[a]				**44.2**	**5570**
0509-95-0018	09-05250	6.5–7.5	QBT2	—[b]	0.0017 (J)
0509-95-0020	09-05251	8–9	QBT2	1 (J+)	0.0014 (J)
0509-95-0021	09-05252	6–7.25	QBT2	1 (J+)	—
0509-95-0022	09-05253	6.5–7.5	QBT2	—	0.0016 (J)
0509-95-0023	09-05254	7–8	QBT2	—	0.0013 (J)

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

[a] SSLs are from NMED 2009, 108070.

[b] — = Not detected.

Table 3.5-4
Samples Collected and Analyses Requested at SWMU 09-003(b)

Sample ID	Location ID	Depth (ft)	Media	HE	Metals	VOC	Cyanide (Total)
0509-95-0025	09-05270	2.25–3.25	QBT2	127	128	127	128
0509-95-0026	09-05271	6.5–7.5	QBT2	127	128	127	128
0509-95-0027	09-05272	7–8	QBT2	127	128	127	128
0509-95-0029	09-05273	6.5–7.5	QBT2	127	128	127	128
0509-95-0030	09-05274	2.25–3.25	QBT2	127	128	127	128
0509-95-0031	09-05275	6.25–7.25	QBT2	127	128	127	128

Note: Numbers in analyte columns are request numbers.

Table 3.5-5
Inorganic Chemicals above BVs at SWMU 09-003(b)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Calcium	Copper	Lead	Mercury	Selenium
Qbt 2, 3, 4 Background Value[a]				**7340**	**0.5**	**2.79**	**46**	**2200**	**4.66**	**11.2**	**0.1**	**0.3**
Construction Worker SSL[b]				**40,700**	**124**	**65.4**	**4350**	**na**[c]	**12,400**	**800**	**92.9**[d]	**1550**
Industrial SSL[b]				**1,130,000**	**454**	**17.7**	**224,000**	**na**	**45,400**	**800**	**310**[e]	**5680**
Residential SSL[b]				**78,100**	**31.3**	**3.9**	**15,600**	**na**	**3130**	**400**	**23**[e]	**391**
0509-95-0025	09-05270	2.25–3.25	QBT2	7410	1.6 (J-)	3.9 (U)	133	3690	12	26.2	0.14	1 (J)
0509-95-0026	09-05271	6.5–7.5	QBT2	—[f]	0.58 (J-)	—	—	—	—	—	—	0.44 (U)
0509-95-0027	09-05272	7–8	QBT2	—	0.6 (J-)	—	—	—	—	—	—	0.45 (U)
0509-95-0029	09-05273	6.5–7.5	QBT2	—	0.59 (J-)	—	—	—	—	—	—	0.45 (U)
0509-95-0030	09-05274	2.25–3.25	QBT2	13,900	0.65 (J-)	4.4	128	3490	11.6	24.4	—	0.51 (J)
0509-95-0031	09-05275	6.25–7.25	QBT2	—	0.58 (J-)	—	—	—	—	—	—	0.44 (U)

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

[a] BVs are from LANL 1998, 059730.

[b] SSLs are from NMED 2009, 108070, unless otherwise noted.

[c] na = not available.

[d] 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).

[e] SSLs are from EPA regional screening tables (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[f] — = Not detected or not above BV.

Table 3.5-6
Organic Chemicals Detected at SWMU 09-003(b)

Sample ID	Location ID	Depth (ft)	Media	Chlorodibromomethane	RDX	Toluene
Construction Worker SSL[a]				**1990**	**715**	**21,100**
Industrial SSL[a]				**61.3**	**174**	**57,900**
Residential SSL[a]				**11.9**	**44.2**	**5570**
0509-95-0025	09-05270	2.25–3.25	QBT2	—[b]	1.3 (J+)	0.002 (J)
0509-95-0026	09-05271	6.5–7.5	QBT2	—	—	0.001 (J)
0509-95-0027	09-05272	7–8	QBT2	—	—	0.001 (J)
0509-95-0029	09-05273	6.5–7.5	QBT2	—	—	0.001 (J)
0509-95-0030	09-05274	2.25–3.25	QBT2	—	—	0.009
0509-95-0031	09-05275	6.25–7.25	QBT2	0.005	—	—

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

[a] SSLs are from NMED 2009, 108070.

[b] — = Not detected.

Table 3.5-7
Samples Collected and Analyses Requested at SWMU 09-003(e)

Sample ID	Location ID	Depth (ft)	Media	HE	Metals	VOC	Cyanide (Total)
0509-95-0032	09-05256	6.5–7.5	QBT2	127	128	127	128
0509-95-0033	09-05257	6–7	QBT2	127	128	127	128
0509-95-0035	09-05259	6.5–7.5	QBT2	127	128	127	128
0509-95-0037	09-05260	6–7	QBT2	127	128	127	128
0509-95-0038	09-05261	6–7	QBT2	127-1	128	127	128

Note: Numbers in analyte columns are request numbers.

Table 3.5-8
Inorganic Chemicals above BVs at SWMU 09-003(e)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Selenium
Qbt 2, 3, 4 Background Value[a]				**0.5**	**0.3**
Construction Worker SSL[b]				**124**	**1550**
Industrial SSL[b]				**454**	**5680**
Residential SSL[b]				**31.3**	**391**
0509-95-0032	09-05256	6.5–7.5	QBT2	0.58 (J-)	0.44 (U)
0509-95-0033	09-05257	6–7	QBT2	0.58 (J-)	0.44 (U)
0509-95-0035	09-05259	6.5–7.5	QBT2	0.57 (U)	0.44 (U)
0509-95-0037	09-05260	6–7	QBT2	0.57 (J-)	0.43 (U)
0509-95-0038	09-05261	6–7	QBT2	0.58 (J-)	0.44 (U)

Notes: Results are in mg/kg. Data qualifiers are in Appendix A.
[a] BVs are from LANL 1998, 059730.
[b] SSLs are from NMED 2009, 108070.

Table 3.5-9
Organic Chemicals Detected at SWMU 09-003(e)

Sample ID	Location ID	Depth (ft)	Media	Styrene	Toluene
Construction Worker SSL[a]				**30,300**	**21,100**
Industrial SSL[a]				**51,200**	**57,900**
Residential SSL[a]				**8970**	**5570**
0509-95-0032	09-05256	6.5–7.5	QBT2	—[b]	0.002 (J)
0509-95-0033	09-05257	6–7	QBT2	—	0.002 (J)
0509-95-0038	09-05261	6–7	QBT2	0.005	—

Notes: Results are in mg/kg. Data qualifiers are in Appendix A.
[a] SSLs are from NMED 2009, 108070.
[b] — = Not detected.

Table 3.6-1
Samples Collected and Analyses Requested at SWMU 09-003(d)

Sample ID	Location ID	Depth (ft)	Media	HE	Metals	VOC	Cyanide (Total)
0509-95-0002	09-05280	6–7.25	QBT2	70	72	70	72
0509-95-0003	09-05281	6.5–7.5	QBT2	119	123	119	123
0509-95-0005	09-05283	3.5–4.5	QBT2	45	66	45	66
0509-95-0007	09-05284	5–6.5	QBT2	45	66	45	66
0509-95-0009	09-05285	7.5–8.5	QBT2	70	72	70	—*

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

Table 3.6-2
Inorganic Chemicals above BVs at SWMU 09-003(d)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Calcium	Cobalt	Copper	Iron	Lead	Magnesium	Nitrate	Selenium	Zinc
Qbt 2, 3, 4 Background Value[a]				**7340**	**0.5**	**2.79**	**46**	**2200**	**3.14**	**4.66**	**14,500**	**11.2**	**1690**	**na**[b]	**0.3**	**63.5**
Construction Worker SSL[c]				**40,700**	**124**	**65.4**	**4350**	**na**	**34.6**[d]	**12,400**	**217,000**	**800**	**na**	**496,000**	**1550**	**92,900**
Industrial SSL[c]				**1,130,000**	**454**	**17.7**	**224,000**	**na**	**300**[e]	**45,400**	**795,000**	**800**	**na**	**1,820,000**	**5680**	**341,000**
Residential SSL[c]				**78,100**	**31.3**	**3.9**	**15,600**	**na**	**23**[e]	**3130**	**54,800**	**400**	**na**	**125,000**	**391**	**23,500**
0509-95-0002	09-05280	6–7.25	QBT2	—[f]	1.3 (J-)	7.7	1440 (J-)	3560	—	5 (J)	—	83.2	—	1	0.5 (U)	72.2
0509-95-0003	09-05281	6.5–7.5	QBT2	—	0.6 (J-)	—	—	—	—	8.7	—	—	—	—	0.45 (U)	—
0509-95-0005	09-05283	3.5–4.5	QBT2	9150	1 (J-)	6	172	2600	—	6.9	—	23.6	—	12	0.49 (U)	—
0509-95-0007	09-05284	5–6.5	QBT2	10400	0.59 (J-)	6.1	89.8	—	4.1 (J)	5.2 (J)	—	25.5	1880	1	0.45 (U)	—
0509-95-0009	09-05285	7.5–8.5	QBT2	—	1.1 (J)	6.5	—	—	—	—	14,800	14.9	—	NA[g]	0.47 (U)	—

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

[a] BVs are from LANL 1998, 059730.

[b] na = Not available.

[c] SSLs are from NMED 2009, 108070, unless otherwise noted.

[d] 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).

[e] SSLs are from EPA regional screening tables (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[f] — = Not detected or not above BV.

[g] NA = Not analyzed.

Table 3.6-3
Organic Chemicals Detected at SWMU 09-003(d)

Sample ID	Location ID	Depth (ft)	Media	Butanone[2-]	HMX	Methylene Chloride	RDX	Tetrachloroethene	Toluene	Trinitrobenzene[1,3,5-]	Trinitrotoluene[2,4,6-]
Construction Worker SSL[a]				**148,000**	**11,900**	**10,600**	**715**	**338**	**21,100**	**8760**[b]	**141**
Industrial SSL[a]				**369,000**	**34,200**	**1090**	**174**	**36.4**	**57,900**	**27,000**[c]	**469**
Residential SSL[a]				**39,600**	**3060**	**199**	**44.2**	**6.99**	**5570**	**2200**[c]	**35.9**
0509-95-0002	09-05280	6–7.25	QBT2	—[d]	—	0.003 (J)	1.2 (J-)	—	—	1.1 (J-)	—
0509-95-0003	09-05281	6.5–7.5	QBT2	—	—	—	2.1	—	—	—	—
0509-95-0005	09-05283	3.5–4.5	QBT2	—	—	0.0026 (J)	—	—	0.0015 (J)	—	—
0509-95-0007	09-05284	5–6.5	QBT2	—	11	0.0027 (J)	190	0.001 (J)	0.0014 (J)	—	0.99
0509-95-0009	09-05285	7.5–8.5	QBT2	0.005 (J)	—	0.002 (J)	5.3 (J-)	—	—	5.1 (J-)	—

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

[a] SSLs are from NMED 2009, 108070, unless otherwise noted.

[b] 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).

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

[d] — = Not detected.

Table 3.10-1
Samples Collected and Analyses Requested at SWMU 09-004(a)

Sample ID	Location ID	Depth (ft)	Media	HE	VOC
RE09-99-0001	09-04104	7–7.5	SOIL	5463R	5462R
RE09-99-0002	09-04105	9–9.5	SOIL	5463R	5462R

Note: Numbers in analyte columns are request numbers.

Table 3.12-1
Samples Collected and Analyses Requested at SWMU 09-004(o)

Sample ID	Location ID	Depth (ft)	Media	HE
RE09-99-0018	09-00005	0–0.5	SOIL	6127R
RE09-99-0019	09-00005	0.83–1.25	SOIL	6127R

Note: Numbers in analyte columns are request numbers.

Table 3.12-2
Organic Chemicals Detected at SWMU 09-004(o)

Sample ID	Location ID	Depth (ft)	Media	HMX
Construction Worker SSL*				**11,900**
Industrial SSL*				**34,200**
Residential SSL*				**3060**
RE09-99-0018	09-00005	0–0.5	SOIL	680
RE09-99-0019	09-00005	0.83–1.25	SOIL	25

Notes: Results are in mg/kg.

* SSLs are from NMED 2009, 108070.

Table 3.14-1
Samples Collected and Analyses Requested at SWMU 09-006

Sample ID	Location ID	Depth (ft)	Media	H3	HE	Metals	VOC	Cyanide (Total)
0509-95-0016	09-05060	7.5–8.5	QBT2	126	119	123	119	123
0509-95-0017	09-05061	6.5–7.5	QBT2	—*	119	123	119	123

Note: Numbers in analyte columns are request numbers.

* — = Analysis not requested.

Table 3.14-2
Inorganic Chemicals above BVs at SWMU 09-006

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Nitrate	Selenium	Silver	Zinc
Qbt 2, 3, 4 Background Value[a]				**7340**	**0.5**	**2.79**	**46**	**2200**	**7.14**	**3.14**	**4.66**	**14,500**	**11.2**	**1690**	**482**	**6.58**	**na**[b]	**0.3**	**1**	**63.5**
Construction Worker SSL[c]				**40,700**	**124**	**65.4**	**4350**	**na**	**449**[d]	**34.6**[e]	**12,400**	**217,000**	**800**	**na**	**463**	**6190**	**496,000**	**1550**	**1550**	**92,900**
Industrial SSL[c]				**1,130,000**	**454**	**17.7**	**224,000**	**na**	**2920**[d]	**300**[f]	**45,400**	**795,000**	**800**	**na**	**145,000**	**22,700**	**1,820,000**	**5680**	**5680**	**341,000**
Residential SSL[c]				**78,100**	**31.3**	**3.9**	**15,600**	**na**	**219**[d]	**23**[f]	**3130**	**54,800**	**400**	**na**	**10,700**	**1560**	**125,000**	**391**	**391**	**23,500**
0509-95-0016	09-05060	7.58.5	QBT2	9260	0.61 (J-)	3.5	183	2810	9.8	5 (J)	11.9	14,900	101	2730	—[g]	9.3 (J)	7	0.99 (J)	1.1 (J)	137
0509-95-0017	09-05061	6.5-7.5	QBT2	—	0.6 (J-)	3.7	118	—	—	7.6 (J)	6.3	—	44.6	—	486	—	1	0.71 (J)	6.5	68.4

Notes: Results are in mg/kg. Data qualifiers are in Appendix A.
[a] BVs are from LANL 1998, 059730.
[b] na = not available.
[c] SSLs are from NMED 2009, 108070, unless otherwise noted.
[d] Construction work 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).
[e] SSLs are for hexavalent chromium.
[f] SSLs are from EPA regional screening tables (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).
[g] — = Not detected or not above BV.

Table 3.14-3
Organic Chemicals Detected at SWMU 09-006

Sample ID	Location ID	Depth (ft)	Media	Carbon Tetrachloride	Chloroform	Hexachlorobutadiene	Tetrachloroethene
Construction Worker SSL[a]				**199**	**671**	**238**	**338**
Industrial SSL[a]				**24.3**	**31.9**	**246**	**36.4**
Residential SSL[a]				**4.38**	**5.72**	**61.1**	**6.99**
0509-95-0016	09-05060	7.5–8.5	QBT2	0.007	0.035	—[b]	0.005
0509-95-0017	09-05061	6.5–7.5	QBT2	—	—	0.002 (J)	0.0014 (J)

Notes: Results are in mg/kg. Data qualifiers are in Appendix A.
[a] SSLs are from NMED 2009, 108070.
[b] — = Not detected.

Table 3.15-1
Samples Collected and Analyses Requested at SWMU 09-005(a)

Sample ID	Location ID	Depth (ft)	Media	H3	HE	Metals	Strontium-90	VOC	Cyanide (Total)
0509-95-0010	09-05050	2–6.2	FILL	—	—	—	74	—	—
0509-95-0012	09-05051	2–4.2	SOIL	—	—	—	74	—	—
0509-95-0013	09-05052	3–4	QBT2	145	143	144	—	143	144
0509-95-0014	09-05053	4–5	QBT2	—	143	144	—	143	144

Note: Numbers in analyte columns are request numbers.

Table 3.15-2
Inorganic Chemicals above BVs at SWMU 09-005(a)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Barium	Chromium	Cobalt	Copper	Lead	Mercury	Selenium	Silver	Vanadium
Qbt 2, 3, 4 Background Value[a]				**0.5**	**2.79**	**46**	**7.14**	**3.14**	**4.66**	**11.2**	**0.1**	**0.3**	**1**	**17**
Construction Worker SSL[b]				**124**	**65.4**	**4350**	**449**[c]	**34.6**[d]	**12,400**	**800**	**92.9**[d]	**1550**	**1550**	**1550**
Industrial SSL[b]				**454**	**17.7**	**224,000**	**2920**[c]	**300**[e]	**45,400**	**800**	**310**[e]	**5680**	**5680**	**5680**
Residential SSL[b]				**31.3**	**3.9**	**15,600**	**219**[c]	**23**[e]	**3130**	**400**	**23**[e]	**391**	**391**	**391**
0509-95-0013	09-05052	3–4	QBT2	0.61 (J-)	3.6	77.7	—[f]	3.6 (J)	6.5	—	—	1.4	18.4	—
0509-95-0014	09-05053	4–5	QBT2	0.59 (J-)	4.1	135	7.9	5.8 (J)	6	16	0.11 (J)	1.1 (J)	20.9	21.2

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

[a] BVs are from LANL 1998, 059730.

[b] SSLs are from NMED 2009, 108070, unless otherwise noted.

[c] SSLs are for hexavalent chromium.

[d] 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).

[e] SSLs are from EPA regional screening tables (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[f] — = Not detected or not above BV.

Table 3.15-3
Organic Chemicals Detected at SWMU 09-005(a)

Sample ID	Location ID	Depth (ft)	Media	Isopropyltoluene[4-]	Toluene
Construction Worker SSL[a]				**10,300**[b]	**21,100**
Industrial SSL[a]				**14,900**[b]	**57,900**
Residential SSL[a]				**3210**[b]	**5570**
0509-95-0013	09-05052	3–4	QBT2	—[c]	0.011
0509-95-0014	09-05053	4–5	QBT2	0.008	0.012

Notes: Results are in mg/kg.

[a] SSLs are from NMED 2009, 108070.

[b] Isopropylbenzene used as a surrogate.

[c] — = Not detected.

Table 3.15-4
Radionuclides Detected or Detected above BVs/FVs at SWMU 09-005(a)

Sample ID	Location ID	Depth (ft)	Media	Strontium-90
Qbt 2, 3, 4 Background Value[a]				**na**[b]
Soil Background Value[a]				**1.31**[c]
Construction Worker SAL[d]				**800**
Industrial SAL[d]				**1900**
Residential SAL[d]				**5.7**
0509-95-0012	09-05051	2–4.2	SOIL	0.715
0509-95-0013	09-05052	3–4	QBT2	NA[e]
0509-95-0014	09-05053	4–5	QBT2	NA

Notes: Results are in pCi/g.

[a] BVs/FVs are from LANL 1998, 059730.

[b] na = not available.

[c] FV applies only to samples collected from 0–1 ft.

[d] SALs from LANL 2009, 107655.

[e] NA = Not analyzed.

Table 3.19-1
Samples Collected and Analyses Requested at AOC 09-011(b)

Sample ID	Location ID	Depth (ft)	Media	HE
0509-97-0001	09-04100	0–0.5	SED	3849R
0509-97-0002	09-04101	0–0.5	SOIL	3849R
0509-97-0003	09-04102	0–0.5	SED	3849R
0509-97-0004	09-04103	0–0.5	SED	3849R

Note: Numbers in analyte columns are request numbers.

Table 3.21-1
Samples Collected and Analyses Requested at AOC 09-012

Sample ID	Location ID	Depth (ft)	Media	Gamma Spectroscopy	Herbicides	HE	Metals	Pesticides, PCB	SVOC	VOC	Cyanide (Total)
0509-95-0045	09-05150	6.7–7.7	SOIL	145	143	143	144	143	143	143	144
0509-95-0047	09-05151	7.5–8.5	SOIL	145	143	143	144	143	143	143	144

Note: Numbers in analyte columns are request numbers.

Table 3.21-2
Inorganic Chemicals above BVs at AOC 09-012

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Lead	Selenium
Soil Background Value[a]				**0.5**	**22.3**	**1.52**
Construction Worker SSL[b]				**6190**	**800**	**1550**
Industrial SSL[b]				**22,700**	**800**	**5680**
Residential SSL[b]				**1560**	**400**	**391**
0509-95-0045	09-05150	6.7–7.7	SOIL	13.2	111	1.8
0509-95-0047	09-05151	7.5–8.5	SOIL	4.6	325	—[c]

Notes: Results are in mg/kg.

[a] BVs are from LANL 1998, 059730.

[b] SSLs are from NMED 2009, 108070.

[c] — = Not detected or not above BV.

Table 3.21-3
Organic Chemicals Detected at AOC 09-012

Sample ID	Location ID	Depth (ft)	Media	Aldrin	Benzene	Benzend Hexachloride (BHC)	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Butanone[2-]	Butylbenzene[n-]	Butylbenzene[sec-]	Butylbenzene[tert-]	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane
Construction Worker SSL[a]				**7.15**	**471**	**83**[b]	**1750**	**na**[c]	**3500**	**4760**	**67.1**	**148,000**	**20100**[d]	**18000**	**19,400**[d]	**5890**	**199**	**1580**	**1990**	**123,000**	**671**	**1130**
Industrial SSL[a]				**1.12**	**85.4**	**22.9**[b]	**410**	**na**	**29.2**	**2420**	**83.6**	**369,000**	**560**[e]	**420**[e]	**500**[e]	**7540**	**24.3**	**2140**	**61.3**	**137,000**	**31.9**	**198**
Residential SSL[a]				**0.284**	**15.5**	**5.17**[b]	**94**	**na**	**5.25**	**616**	**22.3**	**39,600**	**140**[e]	**110**[e]	**130**[e]	**1940**	**4.38**	**508**	**11.9**	**43,600**	**5.72**	**35.6**
0509-95-0045	09-05150	6.7–7.7	SOIL	—[f]	—	0.0014 (J)	—	—	0.033 (J+)	0.12 (J+)	—	—	—	—	—	—	—	—	0.095 (J+)	—	0.062 (J+)	—
0509-95-0047	09-05151	7.5–8.5	SOIL	0.0023	0.006 (J)	—	0.006 (J)	0.006 (J)	0.008 (J+)	0.015 (J+)	0.012 (J)	0.024 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.01 (J+)	0.012 (J)	0.018 (J+)	0.012 (J)

Table 3.21-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chlorotoluene[2-]	Chlorotoluene[4-]	Dalapon	Dichlorophenyl tri-chloroethylene (DDE) [4,4'-]	Dichlorodiphenyl tri-chloroethane (DDT) [4,4'-]	Dibromo-3-Chloropropane[1,2-]	Dibromoethane[1,2-]	Dibromomethane	Dichlorobenzene[1,2-]	Dichlorobenzene[1,3-]	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,1-]	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Dichloroethene[cis-1,2-]	Dichloroethene[trans-1,2-]	Dichloropropane[1,2-]
Construction Worker SSL[a]				**6190**	**na**	**na**	**490**	**142**	**23**	**48.6**	**3100**	**9710**	**5780**[d]	**3780**	**1370**	**6880**	**751**	**1830**	**3100**	**814**	**117**
Industrial SSL[a]				**22,700**	**72000**[g]	**18,000**[g]	**56.3**	**78.1**	**1.09**	**3.14**	**11,400**	**14,300**	**140**[e]	**180**	**1550**	**350**	**42.8**	**2220**	**11,400**	**995**	**81.7**
Residential SSL[a]				**1560**	**5500**[g]	**1800**[g]	**14.3**	**17.2**	**0.194**	**0.574**	**782**	**3010**	**69**[e]	**32.2**	**481**	**62.9**	**7.74**	**618**	**782**	**273**	**14.7**
0509-95-0045	09-05150	6.7–7.7	SOIL	—	—	360 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0509-95-0047	09-05151	7.5–8.5	SOIL	0.006 (J)	0.006 (J)	22 (J)	0.0025 (J)	0.0073	0.012 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.012 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)

Table 3.21-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dichloropropane[1,3-]	Dichloropropane[2,2-]	Dichloropropene[1,1-]	Dichloropropene[cis-1,3-]	Dichloropropene[trans-1,3-]	Endrin	Ethylbenzene	Heptachlor	Hexachlorobutadiene	Hexanone[2-]	Iodomethane	Isopropylbenzene	Isopropyltoluene[4-]	Methoxychlor[4,4'-]	Methyl-2-pentanone[4-]	Naphthalene	Propylbenzene[1-]	Styrene
Construction Worker SSL[a]				**na**	**na**	**na**	**na**	**na**	**71.5**	**6630**	**36.8**	**238**	**na**	**na**	**10,300**	**10,300**[h]	**1190**	**23,100**	**702**	**20,100**[d]	**30,300**
Industrial SSL[a]				**20,000**[g]	**na**	**na**	**na**	**na**	**205**	**385**	**4.26**	**246**	**1400**[g]	**na**	**14,900**	**14,900**[h]	**3100**	**73,300**	**252**	**21,000**[g]	**51,200**
Residential SSL[a]				**1600**[g]	**na**	**na**	**na**	**na**	**18.3**	**69.7**	**1.08**	**61.1**	**210**[g]	**na**	**3210**	**3210**[h]	**310**	**5950**	**45**	**3400**[g]	**8970**
0509-95-0045	09-05150	6.7–7.7	SOIL	—	—	—	—	—	—	—	0.0056 (J-)	—	—	—	—	—	—	—	—	—	—
0509-95-0047	09-05151	7.5–8.5	SOIL	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.025	0.006 (J)	0.0012 (J)	0.006 (J)	0.024 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.072	0.024 (J)	0.006 (J)	0.006 (J)	0.006 (J)

Table 3.21-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Tetrachloroethane[1,1,1,2-]	Tetrachloroethane[1,1,2,2-]	Tetrachloroethene	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichlorobenzene[1,2,3-]	Trichlorobenzene[1,2,4-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene	Trichlorofluoromethane	Trichloropropane[1,2,3-]	Trimethylbenzene[1,2,4-]	Trimethylbenzene[1,3,5-]	Vinyl Chloride	Xylene (Total)	Xylene[1,2-]
Construction Worker SSL[a]				**2780**	**599**	**338**	**21,100**	**298,000**	**na**	**427**	**64,300**	**1240**	**4600**	**5820**	**31**	**688**[d]	**3100**[d]	**248**	**3130**	**27,500**
Industrial SSL[a]				**161**	**43.3**	**36.4**	**57,900**	**339,000**	**490**[g]	**525**	**77,100**	**94.3**	**253**	**6760**	**4.54**	**260**[g]	**10,000**[g]	**25.9**	**3610**	**31,500**
Residential SSL[a]				**29.2**	**7.98**	**6.99**	**5570**	**104,000**	**49**[g]	**143**	**21,800**	**17.2**	**45.7**	**2010**	**0.915**	**62**[g]	**780**[g]	**0.865**	**1090**	**9550**
0509-95-0045	09-05150	6.7–7.7	SOIL	—	—	0.074 (J+)	0.006 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
0509-95-0047	09-05151	7.5–8.5	SOIL	0.006 (J)	0.006 (J)	0.006 (J)	0.017 (J+)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.012 (J)	0.006 (J)	0.006 (J)

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

[a] SSLs are from EPA 2007, 099314.

[b] b-hydroxybutyric acid (BHB) [gamma-] used as a surrogate based on structural similarity.

[c] na = Not available.

[d] 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).

[e] SSLs are from NMED 2009, 108070, unless otherwise noted.

[f] — = Not detected.

[g] SSLs are from EPA regional screening tables (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

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

Table 3.24-1
Samples Collected and Analyses Requested at SWMU C-09-001

Sample ID	Location ID	Depth (ft)	Media	HE	SVOC	VOC
RC09-01-0001	09-10025	0–0.5	FILL	9458R	9457R	9457R
RC09-01-0002	09-10026	0–0.5	FILL	9458R	9457R	9457R
RC09-01-0003	09-10027	0–0.5	FILL	9458R	9457R	9457R
RC09-01-0004	09-10028	0–0.5	FILL	9458R	9457R	9457R
RC09-01-0005	09-10029	0–0.5	FILL	9458R	9457R	9457R
RC09-01-0006	09-10030	0–0.67	FILL	9458R	9457R	9457R

Note: Numbers in analyte columns are request numbers.

Table 3.24-2
Organic Chemicals Detected at SWMU C-09-001

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bromomethane	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Dichloropropane[2,2-]
Construction Worker SSL[a]				**18,600**	**6680[b]**	**66,800**	**213**	**21.3**	**213**	**6680[b]**	**2060**	**67.1**	**20,600**	**21.3**	**552[c]**	**na[d]**
Industrial SSL[a]				**36,700**	**18,300[b]**	**183,000**	**23.4**	**2.34**	**23.4**	**18,300[b]**	**234**	**83.6**	**2340**	**2.34**	**1000[e]**	**na**
Residential SSL[a]				**3440**	**1720[b]**	**17,200**	**6.21**	**0.621**	**6.21**	**1720[b]**	**62.1**	**22.3**	**621**	**0.621**	**78[e]**	**na**
RC09-01-0001	09-10025	0-0.5	FILL	0.76 (J)	—[f]	1.3 (J)	3.4	2.9	2.8	1.9 (J)	2.5	—	3.6	0.74 (J)	0.42 (J)	0.005 (J)
RC09-01-0002	09-10026	0-0.5	FILL	24	1.9	29	10	41	35	30	37	—	49	11 (J)	17 (J)	0.006 (J)
RC09-01-0003	09-10027	0-0.5	FILL	0.7 (J)	0.99 (J)	1.1 (J)	2.7	2.4	2.3	1.7 (J)	2.3	—	3.1	0.62 (J)	0.38 (J)	0.005 (J)
RC09-01-0004	09-10028	0-0.5	FILL	12	0.99 (J)	15	27	26	21	18	27	—	31	6.6	9.4	0.005 (J)
RC09-01-0005	09-10029	0-0.5	FILL	0.8 (J)	—	1.7 (J)	4.7	4	4	2.9	3.5	—	4.9	1 (J)	0.42 (J)	0.005 (J)
RC09-01-0006	09-10030	0-0.67	FILL	0.1 (J)	—	0.15 (J)	0.51 (J)	0.47 (J)	0.43 (J)	0.55 (J)	0.41 (J)	0.011 (J)	0.54 (J)	0.15 (J)	—	—

Table 3.24-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dimethylphenol[2,4-]	Di-n-butylphthalate	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Methylnaphthalene[2-]	Methylphenol[2-]	Methylphenol[4-]	Naphthalene	Nitrophenol[4-]	Phenanthrene	Phenol	Pyrene
Construction Worker SSL[a]				**4760**	**23800**	**8910**	**8910**	**213**	**1240[c]**	**na**	**na**	**702**	**na**	**7150**	**68800**	**6680**
Industrial SSL[a]				**13700**	**68400**	**24400**	**24400**	**23.4**	**4100[e]**	**34000[g]**	**3400[g]**	**252**	**na**	**20500**	**205000**	**18300**
Residential SSL[a]				**1220**	**6110**	**2290**	**2290**	**6.21**	**310[e]**	**3100[g]**	**310[g]**	**45**	**na**	**1830**	**18300**	**1720**
RC09-01-0001	09-10025	0-0.5	FILL	—	—	9.1	0.77 (J)	1.8 (J)	0.33 (J)	—	—	0.88 (J)	—	6.3	—	7.7
RC09-01-0002	09-10026	0-0.5	FILL	1.2 (J)	0.47 (J)	100	26	28	15 (J)	0.64 (J)	1.6 (J)	50	—	130	0.68 (J)	94
RC09-01-0003	09-10027	0-0.5	FILL	0.49 (J)	—	8	0.65 (J)	1.6 (J)	0.25 (J)	0.27 (J)	0.65 (J)	0.77 (J)	—	5.7	—	6.6
RC09-01-0004	09-10028	0-0.5	FILL	—	—	73	13	17	8.5	—	0.68 (J)	28	5.1 (J)	70	0.32 (J)	57
RC09-01-0005	09-10029	0-0.5	FILL	—	—	12	0.79 (J)	2.6	0.24 (J)	—	—	0.71 (J)	—	7.9	—	10
RC09-01-0006	09-10030	0-0.67	FILL	—	—	0.71 (J)	0.099 (J)	0.47 (J)	—	—	—	—	—	0.83 (J)	—	1.1 (J)

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

[a] SSLs are from NMED 2009, 108070, unless otherwise noted.

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

[c] 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).

[d] na = Not available.

[e] SSLs are from EPA regional screening tables (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[f] — = Not detected.

[g] SSLs are from EPA 2007, 099314.

Table 4.2-1
Samples Collected and Analyses Requested at SWMU 22-015(c)

Sample ID	Location ID	Depth (ft)	Media	Hexavalent chromium	Metals	VOC
0522-95-2000	22-02002	0–0.5	SOIL	—*	—	902
0522-95-2001	22-02002	0–0.67	SOIL	—	—	902
0522-95-2002	22-02006	0–0.5	SOIL	—	—	902
0522-95-2003	22-02006	0–2.5	QBT2	—	—	902
0522-95-2005	22-02008	0.17–0.5	SOIL	—	—	902
0522-95-2006	22-02008	0.67–2.5	QBT2	—	—	902
0522-95-2008	22-02008	1.83–2.5	QBT2	1020	1020	—
0522-95-2009	22-02069	0–0.5	SOIL	1020	1020	—
0522-95-2010	22-02070	0–0.5	SOIL	1020	1020	—
0522-95-2011	22-02071	0–0.5	SOIL	1020	1020	—
0522-95-2012	22-02072	0–0.5	SOIL	1020	1020	—
0522-95-2014	22-02073	0–0.5	SOIL	1020	1020	—
0522-95-2015	22-02074	2–2.5	SOIL	—	1153	—
0522-95-2016	22-02075	2–2.5	SOIL	—	1153	—
0522-95-2017	22-02076	2–2.5	SOIL	—	1153	—
0522-95-2018	22-02077	2–2	SOIL	—	1153	—
0522-95-2019	22-02077	2.5–3	SOIL	—	1153	—

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

Table 4.2-2
Inorganic Chemicals above BVs at SWMU 22-015(c)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Cadmium	Chromium	Chromium Hexavalent Ion	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Qbt2, 3, 4 Background Value[a]				**0.5**	**2.79**	**1.63**	**7.14**	**na**[b]	**3.14**	**4.66**	**14,500**	**11.2**	**0.1**	**6.58**	**0.3**	**1**	**1.1**	**17**	**63.5**
Soil Background Value[a]				**0.83**	**8.17**	**0.4**	**19.3**	**na**	**8.64**	**14.7**	**21,500**	**22.3**	**0.1**	**15.4**	**1.52**	**1**	**0.73**	**39.6**	**48.8**
Construction Worker SSL[c]				**124**	**65.4**	**309**	**449**[d]	**449**	**34.6**[e]	**12,400**	**217,000**	**800**	**92.9**[e]	**6190**	**1550**	**1550**	**20.4**	**1550**	**92,900**
Industrial SSL[c]				**454**	**17.7**	**1120**	**2920**[d]	**2920**	**300**[f]	**45,400**	**795,000**	**800**	**310**[f]	**22,700**	**5680**	**5680**	**74.9**	**5680**	**341,000**
Residential SSL[c]				**31.3**	**3.9**	**77.9**	**219**[d]	**219**	**23**[f]	**3130**	**54,800**	**400**	**23**[f]	**1560**	**391**	**391**	**5.16**	**391**	**23,500**
0522-95-2008	22-02008	1.83–2.5	QBT2	9.9 (U)	—[g]	8.6	34.7	—	—	179 (J+)	—	—	—	110	0.73 (U)	1.4 (U)	—	—	—
0522-95-2009	22-02069	0–0.5	SOIL	10.8 (J)	—	139	394	—	8.7 (J)	1280 (J+)	—	103	0.36	1060	—	43.3	0.86 (U)	—	168
0522-95-2010	22-02070	0–0.5	SOIL	10 (U)	10.6	5.7	149	—	—	4330 (J+)	23,800	68.6	0.14	533	—	7.3	0.84 (U)	43.7	120
0522-95-2011	22-02071	0–0.5	SOIL	11.3 (U)	—	3.2 (U)	45.4	—	—	92.7 (J+)	—	25.4	—	143	—	4.6	0.95 (U)	—	58.8
0522-95-2012	22-02072	0–0.5	SOIL	12.2 (U)	21.3	42.8	442	0.17	—	11,500 (J+)	52,100	174	0.29	1160	—	13.2	1.9 (J)	87.7	214
0522-95-2014	22-02073	0–0.5	SOIL	11 (U)	—	22.8	588	—	—	3730 (J+)	—	288	0.56	1450	—	34.3	0.93 (U)	—	201
0522-95-2015	22-02074	2–2.5	SOIL	13 (J-)	—	2.4	120	NA[h]	—	410	—	28	0.13 (U)	72	—	5.1	—	—	—
0522-95-2016	22-02075	2–2.5	SOIL	14 (J-)	—	11	67	NA	—	190	—	—	0.14 (U)	100	—	8.3	—	—	—
0522-95-2017	22-02076	2–2.5	SOIL	14 (J-)	—	8.2	160	NA	—	1500	—	30	0.27	150	—	15	—	—	—
0522-95-2018	22-02077	2–2	SOIL	13 (J-)	—	1.9	—	NA	—	160	—	—	0.13 (U)	38	—	3.9	—	—	—
0522-95-2019	22-02077	2.5–3	SOIL	13 (J-)	—	1.8	—	NA	—	160	—	—	0.13 (U)	41	—	3.9	—	—	—

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

[a] BVs are from LANL 1998, 059730.

[b] na = Not available.

[c] SSLs are from NMED 2009, 108070, unless otherwise noted.

[d] SSLs are for hexavalent chromium.

[e] 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).

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

[g] — = Not detected or not above BV.

[h] NA = Not analyzed.

Table 4.2-3
Organic Chemicals Detected at SWMU 22-015(c)

Sample ID	Location ID	Depth (ft)	Media	Acetone	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Butanone[2-]	Butylbenzene[n-]	Butylbenzene[sec-]	Butylbenzene[tert-]	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	Chlorotoluene[2-]	Chlorotoluene[4-]	Dibromo-3-Chloropropane[1,2-]
Construction Worker SSL[a]				**263,000**	**471**	**1750**	**na**[b]	**3500**	**4760**	**67.1**	**148,000**	**20,100**[c]	**18,000**[c]	**19400**[c]	**5890**	**199**	**1580**	**1990**	**123,000**	**671**	**1130**	**6190**	**na**	**23**
Industrial SSL[a]				**851,000**	**85.4**	**410**	**na**	**29.2**	**2420**	**83.6**	**369,000**	**560**[d]	**420**[d]	**500**[d]	**7540**	**24.3**	**2140**	**61.3**	**137,000**	**31.9**	**198**	**22,700**	**72,000**[e]	**1.09**
Residential SSL[a]				**67,500**	**15.5**	**94**	**na**	**5.25**	**616**	**22.3**	**39,600**	**140**[d]	**110**[d]	**130**[d]	**1940**	**4.38**	**508**	**11.9**	**43,600**	**5.72**	**35.6**	**1560**	**5500**[e]	**0.194**
0522-95-2000	22-02002	0–0.5	SOIL	—[f]	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.015 (J)	0.03 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.015 (J)	0.008 (J)	0.015 (J)	0.008 (J)	0.008 (J)	0.015 (J)
0522-95-2001	22-02002	0–0.67	SOIL	—	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.013 (J)	0.026 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.013 (J)	0.006 (J)	0.013 (J)	0.006 (J)	0.006 (J)	0.013 (J)
0522-95-2002	22-02006	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0522-95-2003	22-02006	0–2.5	QBT2	0.026 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.013 (J)	0.026 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.013 (J)	0.006 (J)	0.013 (J)	0.006 (J)	0.006 (J)	0.013 (J)
0522-95-2005	22-02008	0.17–0.5	SOIL	—	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.014 (J)	0.028 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.014 (J)	0.007 (J)	0.014 (J)	0.007 (J)	0.007 (J)	0.014 (J)
0522-95-2006	22-02008	0.67–2.5	QBT2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4.2-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dibromoethane[1,2-]	Dibromomethane	Dichlorobenzene[1,2-]	Dichlorobenzene[1,3-]	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,1-]	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Dichloroethene[cis-1,2-]	Dichloroethene[trans-1,2-]	Dichloropropane[1,2-]	Dichloropropane[1,3-]	Dichloropropane[2,2-]	Dichloropropene[1,1-]	Dichloropropene[cis-1,3-]	Dichloropropene[trans-1,3-]	Ethylbenzene	Hexanone[2-]	Iodomethane	Isopropylbenzene
Construction Worker SSL[a]				**48.6**	**3100**	**9710**	**5780**[c]	**3780**	**1370**	**6880**	**751**	**1830**	**3100**	**814**	**117**	**na**	**na**	**na**	**na**	**na**	**6630**	**na**	**na**	**10,300**
Industrial SSL[a]				**3.14**	**11,400**	**14,300**	**140**[c]	**180**	**1550**	**350**	**42.8**	**2220**	**11,400**	**995**	**81.7**	**20,000**[e]	**na**	**na**	**na**	**na**	**385**	**1400**[e]	**na**	**14,900**
Residential SSL[a]				**0.574**	**782**	**3010**	**69d**	**32.2**	**481**	**62.9**	**7.74**	**618**	**782**	**273**	**14.7**	**1600**[e]	**na**	**na**	**na**	**na**	**69.7**	**210**[e]	**na**	**3210**
0522-95-2000	22-02002	0–0.5	SOIL	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.015 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.03 (J)	0.008 (J)	0.008 (J)
0522-95-2001	22-02002	0–0.67	SOIL	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.013 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.026 (J)	0.006 (J)	0.006 (J)
0522-95-2002	22-02006	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0522-95-2003	22-02006	0–2.5	QBT2	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.013 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.026 (J)	0.006 (J)	0.006 (J)
0522-95-2005	22-02008	0.17–0.5	SOIL	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.014 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.028 (J)	0.007 (J)	0.007 (J)
0522-95-2006	22-02008	0.67–2.5	QBT2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4.2-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Isopropyltoluene[4-]	Methyl-2-pentanone[4-]	Propylbenzene[1-]	Styrene	Tetrachloroethane[1,1,1,2-]	Tetrachloroethane[1,1,2,2-]	Tetrachloroethene	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene	Trichlorofluoromethane	Trichloropropane[1,2,3-]	Trimethylbenzene[1,2,4-]	Trimethylbenzene[1,3,5-]	Vinyl Chloride	Xylene (Total)	Xylene[1,2-]	Xylene[1,3-]+Xylene[1,4-]
Construction Worker SSL[a]				**10,300**[g]	**23,100**	**20,100**[c]	**30,300**	**2780**	**599**	**338**	**21,100**	**298,000**	**64300**	**1240**	**4600**	**5820**	**31**	**688**	**3100**[c]	**248**	**3130**	**27,500**	**3130**
Industrial SSL[a]				**14,900**[g]	**73,300**	**21,000**[e]	**51,200**	**161**	**43.3**	**36.4**	**57,900**	**339,000**	**77100**	**94.3**	**253**	**6760**	**4.54**	**260**[e]	**10,000**[e]	**25.9**	**3610**	**31,500**	**3610**
Residential SSL[a]				**3210**[g]	**5950**	**3400**[e]	**8970**	**29.2**	**7.98**	**6.99**	**5570**	**104,000**	**21800**	**17.2**	**45.7**	**2010**	**0.915**	**62**[e]	**780**[e]	**0.865**	**1090**	**9550**	**1090**
0522-95-2000	22-02002	0–0.5	SOIL	0.008 (J)	0.03 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.008 (J)	0.015 (J)	0.008 (J)	0.008 (J)	0.008 (J)
0522-95-2001	22-02002	0–0.67	SOIL	0.006 (J)	0.026 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.013 (J)	0.006 (J)	0.006 (J)	0.006 (J)
0522-95-2002	22-02006	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	0.002 (J)	—	—	—	—	—	—	—	0.006 (J)
0522-95-2003	22-02006	0–2.5	QBT2	0.006 (J)	0.026 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.013 (J)	0.006 (J)	0.006 (J)	0.006 (J)
0522-95-2005	22-02008	0.17–0.5	SOIL	0.007 (J)	0.028 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.002 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.007 (J)	0.014 (J)	0.007 (J)	0.007 (J)	0.007 (J)
0522-95-2006	22-02008	0.67–2.5	QBT2	—	—	—	—	—	—	—	—	—	—	—	0.005 (J)	—	—	—	—	—	—	—	NA[h]

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

[a] SSLs are from NMED 2009, 108070, unless otherwise noted.

[b] na = Not available.

[c] 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).

[d] SSLs are from EPA 2007, 099314.

[e] SSLs are EPA regional screening tables (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[f] — = Not detected.

[g] Isopropylbenzene used as a surrogate.

[h] NA = Not analyzed.

Table 4.3-1
Samples Collected and Analyses Requested at SWMU 22-015(d)

Sample ID	Location ID	Depth (ft)	Media	HE	VOC
0522-97-0031	22-06069	9–10	FILL	3078R	3077R
0522-97-0032	22-06069	10.5–11.5	QBT4	3078R	3077R
0522-97-0033	22-06069	15–16	QBT4	3078R	3077R
0522-97-0034	22-06069	19–20	QBT4	3078R	3077R
0522-97-0035	22-06070	0–0.5	SOIL	3078R	3077R

Note: Numbers in analyte columns are request numbers.

Table 4.3-2
Organic Chemicals Detected at SWMU 22-015(d)

Sample ID	Location ID	Depth (ft)	Media	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Butanone[2-]	Butylbenzene[n-]	Butylbenzene[sec-]	Butylbenzene[tert-]	Carbon Tetrachloride	Chlorobenzene	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	Chlorotoluene[2-]	Chlorotoluene[4-]	Dibromo-3-Chloropropane[1,2-]	Dibromoethane[1,2-]
Construction Worker SSL[a]				**1750**	**na**[b]	**3500**	**4760**	**67.1**	**148,000**	**20,100**[c]	**18,000**[c]	**19,400**[c]	**199**	**1580**	**1990**	**123,000**	**671**	**1130**	**6190**	**na**	**23**	**48.6**
Industrial SSL[a]				**410**	**na**	**29.2**	**2420**	**83.6**	**369,000**	**560**[d]	**420**[d]	**500**[d]	**24.3**	**2140**	**61.3**	**137,000**	**31.9**	**198**	**22,700**	**na**	**1.09**	**3.14**
Residential SSL[a]				**94**	**na**	**5.25**	**616**	**22.3**	**39,600**	**140**[d]	**110**[d]	**130**[d]	**4.38**	**508**	**11.9**	**43,600**	**5.72**	**35.6**	**1560**	**na**	**0.194**	**0.574**
0522-97-0032	22-06069	10.5–11.5	QBT4	—[e]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0522-97-0035	22-06070	0–0.5	SOIL	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.012 (J)	0.023 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.012 (J)	0.006 (J)	0.012 (J)	0.006 (J)	0.006 (J)	0.012 (J)	0.006 (J)

Table 4.3-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dibromomethane	Dichlorobenzene[1,2-]	Dichlorobenzene[1,3-]	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,1-]	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Dichloroethene[cis/trans-1,2-]	Dichloropropane[1,2-]	Dichloropropane[1,3-]	Dichloropropane[2,2-]	Dichloropropene[1,1-]	Dichloropropene[cis-1,3-]	Dichloropropene[trans-1,3-]	Ethylbenzene	Hexanone[2-]	Iodomethane	Isopropylbenzene
Construction Worker SSL[a]				**3100**	**9710**	**5780**[c]	**3780**	**1370**	**6880**	**751**	**1830**	**na**	**117**	**na**	**na**	**na**	**na**	**na**	**6630**	**na**	**na**	**10,300**
Industrial SSL[a]				**11,400**	**14,300**	**140**[d]	**180**	**1550**	**350**	**42.8**	**2220**	**na**	**81.7**	**20,000**[f]	**na**	**na**	**na**	**na**	**385**	**1400**[f]	**na**	**14,900**
Residential SSL[a]				**782**	**3010**	**69**[d]	**32.2**	**481**	**62.9**	**7.74**	**618**	**na**	**14.7**	**1600**[f]	**na**	**na**	**na**	**na**	**69.7**	**210**[f]	**na**	**3210**
0522-97-0032	22-06069	10.5–11.5	QBT4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0522-97-0035	22-06070	0–0.5	SOIL	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.012 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.023 (J)	0.006 (J)	0.006 (J)

Table 4.3-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Isopropyltoluene[4-]	Methyl-2-pentanone[4-]	PETN	Propylbenzene[1-]	Styrene	Tetrachloroethane[1,1,1,2-]	Tetrachloroethane[1,1,2,2-]	Tetrachloroethene	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene	Trichlorofluoromethane	Trichloropropane[1,2,3-]	Trimethylbenzene[1,2,4-]	Trimethylbenzene[1,3,5-]	Vinyl Chloride	Xylene (Total)
Construction Worker SSL[a]				**10,300**[g]	**23,100**	**na**	**20100**[c]	**30,300**	**2780**	**599**	**338**	**21,100**	**298,000**	**64,300**	**1240**	**4600**	**5820**	**31**	**688**	**3100**[c]	**248**	**3130**
Industrial SSL[a]				**14,900**[g]	**73,300**	**na**	**21000**[f]	**51,200**	**161**	**43.3**	**36.4**	**57,900**	**339,000**	**77,100**	**94.3**	**253**	**6760**	**4.54**	**260**[f]	**10,000**[f]	**25.9**	**3610**
Residential SSL[a]				**3210**[g]	**5950**	**na**	**3400**[f]	**8970**	**29.2**	**7.98**	**6.99**	**5570**	**104,000**	**21,800**	**17.2**	**45.7**	**2010**	**0.915**	**62**[f]	**780**[f]	**0.865**	**1090**
0522-97-0032	22-06069	10.5–11.5	QBT4	—	—	311	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0522-97-0035	22-06070	0–0.5	SOIL	0.006 (J)	0.023 (J)	—	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.003 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.006 (J)	0.012 (J)	0.006 (J)

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

[a] SSLs are from NMED 2009, 108070, unless otherwise noted.

[b] na = Not available.

[c] 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).

[d] SSLs are from EPA 2007, 099314.

[e] — = Not detected.

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

[g] SSLs are EPA regional screening tables (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

Table 5.5-1
Samples Collected and Analyses Requested at SWMU 40-006(a)

Sample ID	Location ID	Depth (ft)	Media	Gamma Spectroscopy	H3	HE	Metals	Stronium-90	SVOC	Uranium	Cyanide (Total)
0540-95-1000	40-07001	0–0.5	SOIL	323	323	320	322, 323	323	321	—*	—
0540-95-1002	40-07001	6.75–7.75	QBT3	323	—	320	322, 323	323	321	—	—
0540-95-1001	40-07001	13.5–14.5	QBT3	323	—	320	322, 323	323	321	—	—
0540-95-1003	40-07002	0–0.5	SOIL	323	—	320	322, 323	323	321	—	—
0540-95-1005	40-07002	2–3	SOIL	323	—	320	322, 323	323	321	—	—
0540-95-1004	40-07002	4–5	QBT3	323	—	320	322, 323	323	321	—	—
0540-95-1006	40-07003	0–0.5	SOIL	323	—	320	322	323	321	—	—
0540-95-1007	40-07003	0.5–1.5	QBT3	323	—	320	322, 323	323	321	—	—
0540-95-1008	40-07003	2.5–3.5	QBT3	323	—	320	322, 323	323	321	—	—
0540-95-1009	40-07004	0–0.5	SOIL	323	—	320	322, 323	323	321	—	—
0540-95-1012	40-07004	1.75–2.75	QBT3	323	—	320	322, 323	323	321	—	—
0540-95-1011	40-07004	3.5–4.5	QBT3	323	—	320	322, 323	323	321	—	—
0540-95-1013	40-07005	0–0.5	SOIL	327	—	326	325	327	324	327	—
0540-95-1015	40-07005	2–3	QBT3	327	—	326	325	327	324	327	—
0540-95-1014	40-07005	4–5	QBT3	327	—	326	325	327	324	327	—
0540-95-1016	40-07006	0–0.5	SOIL	327	—	326	325	327	324	327	—
0540-95-1018	40-07006	1.5–2.5	QBT3	327	—	326	325	327	324	327	—
0540-95-1017	40-07006	3–4	QBT3	327	—	326	325	327	324	327	—
0540-95-1019	40-07007	0–0.5	SOIL	327	—	326	325	327	324	327	—
0540-95-1021	40-07007	1.65–2.65	QBT3	327	—	326	325	327	324	327	—
0540-95-1020	40-07007	3.3–4.3	QBT3	327	—	326	325	327	324	327	—
0540-95-1022	40-07008	0–0.5	SOIL	327	—	326	325	327	324	327	—
0540-95-1025	40-07008	1.95–2.95	QBT3	327	—	326	325	327	324	327	—
0540-95-1024	40-07008	3.9–4.9	QBT3	327	—	326	325	327	324	327	—
0540-95-1026	40-07009	0–0.5	SOIL	351	—	348	350	351	349	351	—
0540-95-1028	40-07009	1.25–2.25	QBT3	351	—	348	350	351	349	351	—
0540-95-1027	40-07009	2.5–3.5	QBT3	351	—	348	350	351	349	351	—
0540-95-1029	40-07010	0–0.5	SOIL	351	—	348	350	351	349	351	—
0540-95-1031	40-07010	1.65–2.65	QBT3	351	—	348	350	351	349	351	—
0540-95-1030	40-07010	3.3–4.3	QBT3	351	—	348	350	351	349	351	—
0540-95-1032	40-07011	0–0.5	SOIL	351	—	348	350	351	349	351	—
0540-95-1034	40-07011	1.65–2.65	QBT3	351	—	348	350	351	349	351	—
0540-95-1033	40-07011	3.3–4.3	QBT3	351	—	348	350	351	349	351	—
0540-95-1035	40-07012	0–0.5	SOIL	351	—	348	350	351	349	351	—

Table 5.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Gamma Spectroscopy	H3	HEXP	Metals	Stronium-90	SVOC	Uranium	Cyanide (Total)
0540-95-1038	40-07012	1.65–2.65	QBT3	351	—	348	350	351	349	351	—
0540-95-1037	40-07012	3.3–4.3	QBT3	351	—	348	350	351	349	351	—
0540-95-1039	40-07013	0–0.5	SOIL	366	—	364	365	366	363	366	—
0540-95-1041	40-07013	1.55–2.55	QBT3	366	—	364	365	366	363	366	—
0540-95-1040	40-07013	3.1–4.1	QBT3	366	—	364	365	366	363	366	—
0540-95-1042	40-07014	0–0.5	SOIL	366	—	364	365	366	363	366	—
0540-95-1044	40-07014	2.15–3.15	QBT3	366	—	364	365	366	363	366	—
0540-95-1043	40-07014	4.3–5.3	QBT3	366	—	364	365	366	363	366	—
0540-95-1045	40-07015	0–0.5	SOIL	366	—	364	365	366	363	366	—
0540-95-1047	40-07015	1.4–2.8	QBT3	366	—	364	365	366	363	366	—
0540-95-1046	40-07015	2.8–3.8	QBT3	366	—	364	365	366	363	366	—
0540-95-1048	40-07016	0–0.5	SOIL	366	—	364	365	366	363	366	—
0540-95-1051	40-07016	1.45–2.9	QBT3	366	—	364	365	366	363	366	—
0540-95-1050	40-07016	2.9–3.9	QBT3	366	—	364	365	366	363	366	—
0540-95-1052	40-07017	0–0.5	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1054	40-07017	0.08–0.29	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1053	40-07017	0.42–0.58	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1055	40-07018	0–0.5	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1057	40-07018	1–1.5	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1056	40-07018	1.5–2	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1058	40-07019	0–0.5	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1060	40-07019	0.92–1.58	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1059	40-07019	3–3.25	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1064	40-07020	0–0.41	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1061	40-07020	0–0.5	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1063	40-07020	0.42–0.83	QBT3	655	—	652	654, 655	655	653	—	—
0540-95-1065	40-07021	0–0.5	SED	655	—	652	654, 655	655	653	—	—
0540-95-1067	40-07021	0.83–1.5	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1066	40-07021	3–3.67	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1068	40-07022	0–0.5	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1070	40-07022	0.83–1.5	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1069	40-07022	3–3.67	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1071	40-07023	0–0.5	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1073	40-07023	0.25–1	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1143	40-07023	0.25–1	SOIL	—	—	—	—	—	688	—	—
0540-95-1072	40-07023	1–1.67	SOIL	655	—	652	654, 655	655	653	—	—

Table 5.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Gamma Spectroscopy	H3	HEXP	Metals	Stronium-90	SVOC	Uranium	Cyanide (Total)
0540-95-1077	40-07024	0–0.41	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1074	40-07024	0–0.5	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1076	40-07024	0.42–0.83	SOIL	655	—	652	654, 655	655	653	—	—
0540-95-1078	40-07025	0–0.5	SED	617	—	615	616, 617	617	615	—	—
0540-95-1080	40-07025	1–1.5	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1079	40-07025	1.5–1.92	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1081	40-07026	0–0.5	SED	617	—	615	616, 617	617	615	—	—
0540-95-1083	40-07026	0.58–1.17	SED	617	—	615	616, 617	617	615	—	—
0540-95-1082	40-07026	1.17–1.67	SED	617	—	615	616, 617	617	615	—	—
0540-95-1084	40-07027	0–0.5	SED	617	—	615	616, 617	617	615	—	—
0540-95-1086	40-07027	0.25–0.67	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1085	40-07027	0.67–1.08	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1087	40-07028	0–0.5	SED	617	—	615	616, 617	617	615	—	—
0540-95-1090	40-07028	0.33–0.83	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1089	40-07028	0.83–1.67	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1091	40-07029	0–0.5	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1093	40-07029	0.25–0.58	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1092	40-07029	0.58–1.17	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1094	40-07030	0–0.5	SED	617	—	615	616, 617	617	615	—	—
0540-95-1096	40-07030	0.25–0.75	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1095	40-07030	0.75–1.33	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1097	40-07031	0–0.5	SED	617	—	615	616, 617	617	615	—	—
0540-95-1099	40-07031	1.13–1.75	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1098	40-07031	1.75–2.25	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1100	40-07032	0–0.5	SED	617	—	615	616, 617	617	615	—	—
0540-95-1103	40-07032	0.25–0.67	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1102	40-07032	0.67–1.17	SOIL	617	—	615	616, 617	617	615	—	—
0540-95-1104	40-07033	1.83–2.5	SOIL	568	—	567	568, 570	568	569	—	570
0540-95-1105	40-07034	0.17–1	SED	568	—	567	568, 570	568	569	—	570
0540-95-1106	40-07035	0.17–0.83	SED	568	—	567	568, 570	568	569	—	570
0540-95-1107	40-07036	0.33–0.83	SED	568	—	567	568, 570	568	569	—	570
0540-95-1109	40-07037	0.17–1	SED	568	—	567	568, 570	568	569	—	570
0540-95-1110	40-07038	1.33–2	SED	568	—	567	568, 570	568	569	—	570
0540-95-1111	40-07039	0.17–0.83	SED	568	—	567	568, 570	568	569	—	570
0540-95-1112	40-07040	1–2	SED	568	—	567	568, 570	568	569	—	570
0540-95-1113	40-07041	0–0.5	SOIL	594	—	589	592	594	589	594	—

Table 5.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Gamma Spectroscopy	H3	HEXP	Metals	Stronium-90	SVOC	Uranium	Cyanide (Total)
0540-95-1115	40-07042	0–0.5	SOIL	594	—	589	592	594	589	594	—
0540-95-1116	40-07043	0–0.5	SOIL	594	—	589	592	594	589	594	—
0540-95-1117	40-07044	0–0.5	SOIL	594	—	589	592	594	589	594	—
0540-95-1118	40-07045	0–0.5	SOIL	594	—	589	592	594	589	594	—
0540-95-1119	40-07046	0–0.5	SOIL	594	—	589	592	594	589	594	—
0540-95-1120	40-07047	0–0.5	SOIL	594	—	589	592	594	589	594	—
0540-95-1121	40-07048	0–0.5	SOIL	594	—	589	592	594	589	594	—

Note: Numbers in analyte columns are request numbers.

* — = Analysis not requested.

Table 5.5-2
Inorganic Chemicals above BVs at SWMU 40-006(a)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Lead	Magnesium	Manganese	Mercury	Nickel	Selenium	Silver	Sodium	Thallium	Uranium	Zinc
Qbt 2, 3, 4 Background Value[a]				**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**na**[b]	**11.2**	**1690**	**482**	**0.1**	**6.58**	**0.3**	**1**	**2770**	**1.1**	**2.4**	**63.5**
Sediment Background Value[a]				**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**0.3**	**1**	**1470**	**0.73**	**2.22**	**60.2**
Soil Background Value[a]				**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**1.52**	**1**	**915**	**0.73**	**1.82**	**48.8**
Construction Worker SSL[c]				**124**	**65.4**	**4350**	**144**	**309**	**na**	**449**[d]	**34.6**[e]	**12,400**	**6190**	**800**	**na**	**463**	**92.9**[e]	**6190**	**1550**	**1550**	**na**	**20.4**	**929**	**92,900**
Industrial SSL[c]				**454**	**17.7**	**224,000**	**2260**	**1120**	**na**	**2920**[d]	**300**[f]	**45,400**	**22,700**	**800**	**na**	**145,000**	**310**[f]	**22,700**	**5680**	**5680**	**na**	**74.9**	**3410**	**341,000**
Residential SSL[c]				**31.3**	**3.9**	**15,600**	**156**	**77.9**	**na**	**219**[d]	**23**[f]	**3130**	**1560**	**400**	**na**	**10,700**	**23**[f]	**1560**	**391**	**391**	**na**	**5.16**	**235**	**23,500**
0540-95-1000	40-07001	0–0.5	SOIL	—[g]	—	—	—	1 (U)	—	—	10 (U)	41 (J+)	NA[h]	—	—	—	—	—	—	2.1 (U)	1000 (U)	2.1 (UJ)	2.3	160
0540-95-1002	40-07001	6.75–7.75	QBT3	—	—	48 (U)	—	—	—	—	12 (U)	6 (U)	NA	—	—	—	0.12 (U)	9.6 (U)	1.2 (U)	2.4 (U)	—	2.4 (UJ)	5.3	—
0540-95-1001	40-07001	13.5–14.5	QBT3	—	—	—	—	—	—	—	11 (U)	5.4 (U)	NA	—	—	—	0.11 (U)	8.7 (U)	1.1 (U)	2.2 (U)	—	2.2 (UJ)	3.2	—
0540-95-1003	40-07002	0–0.5	SOIL	—	—	—	—	1 (U)	—	—	10 (U)	42 (J+)	NA	—	—	—	—	—	—	2 (U)	1000 (U)	2 (UJ)	2	—
0540-95-1005	40-07002	2–3	SOIL	—	—	—	—	1 (U)	—	—	10 (U)	—	NA	—	—	—	—	—	—	2.1 (U)	1000 (U)	2.1 (UJ)	4	—
0540-95-1004	40-07002	4–5	QBT3	—	—	51 (U)	1.3 (U)	—	—	—	13 (U)	6.4 (U)	NA	—	—	—	0.13 (U)	10 (U)	1.3 (U)	2.6 (U)	—	2.6 (UJ)	3.6	—
0540-95-1006	40-07003	0–0.5	SOIL	—	—	—	—	1.3 (U)	—	—	13 (U)	100 (J+)	NA	—	—	—	0.13 (U)	—	—	2.5 (U)	1300 (U)	2.5 (UJ)	NA	81
0540-95-1007	40-07003	0.5–1.5	QBT3	—	—	330	1.3 (U)	—	19000	—	13 (U)	13 (J+)	NA	—	2200	—	0.13 (U)	10 (U)	1.3 (U)	2.5 (U)	—	2.5 (UJ)	3.2	—
0540-95-1008	40-07003	2.5–3.5	QBT3	—	—	52 (U)	1.3 (U)	—	2300	—	13 (U)	6.5 (U)	NA	—	—	—	0.13 (U)	10 (U)	1.3 (U)	2.6 (U)	—	2.6 (UJ)	3.3	—
0540-95-1009	40-07004	0–0.5	SOIL	—	—	—	—	1 (U)	—	—	10 (U)	72 (J+)	NA	—	—	—	—	—	—	2 (U)	1000 (U)	2 (UJ)	1.9	—
0540-95-1012	40-07004	1.75–2.75	QBT3	—	—	140	—	—	—	—	12 (U)	6 (U)	NA	—	—	—	0.12 (U)	9.6 (U)	1.2 (U)	2.4 (U)	—	2.4 (UJ)	5.4	—
0540-95-1011	40-07004	3.5–4.5	QBT3	—	3.3	50 (U)	1.3 (U)	—	—	—	13 (U)	6.3 (U)	NA	—	—	—	0.13 (U)	10 (U)	1.3	2.5 (U)	—	2.5 (UJ)	4	—
0540-95-1013	40-07005	0–0.5	SOIL	4.5 (U)	—	—	—	0.68 (U)	—	—	—	72.2 (J-)	NA	—	—	—	—	—	—	1.5 (U)	—	1.2 (U)	—	—
0540-95-1015	40-07005	2–3	QBT3	4.7 (U)	—	201	—	—	4290	—	—	41.8 (J-)	NA	—	—	—	—	—	0.94 (U)	1.6 (U)	—	1.3 (U)	—	—
0540-95-1014	40-07005	4–5	QBT3	4.6 (U)	—	198	—	—	—	—	—	5.8 (J-)	NA	—	—	—	—	—	0.93 (U)	1.5 (U)	—	1.3 (U)	—	—
0540-95-1016	40-07006	0–0.5	SOIL	4.4 (U)	—	—	—	0.66 (U)	—	—	—	106 (J-)	NA	—	—	—	—	—	—	1.5 (U)	—	1.2 (U)	—	—
0540-95-1018	40-07006	1.5–2.5	QBT3	4.5 (U)	—	218	—	—	4100	—	—	295 (J-)	NA	—	—	—	—	—	0.91 (U)	1.5 (U)	—	1.2 (U)	—	—
0540-95-1017	40-07006	3–4	QBT3	4.4 (U)	—	137	—	—	—	—	—	12.2 (J-)	NA	—	—	—	—	—	0.88 (U)	1.5 (U)	—	1.2 (U)	—	—
0540-95-1019	40-07007	0–0.5	SOIL	4.6 (U)	—	—	—	0.69 (U)	—	—	—	69.8 (J-)	NA	—	—	—	—	—	—	1.5 (U)	—	1.3 (U)	—	—
0540-95-1021	40-07007	1.65–2.65	QBT3	4.3 (U)	—	204	—	—	3510	—	—	34.7 (J-)	NA	—	—	—	—	—	0.87 (U)	1.4 (U)	—	1.2 (U)	—	—
0540-95-1020	40-07007	3.3–4.3	QBT3	4.5 (U)	—	—	—	—	—	—	—	—	NA	—	—	—	—	—	0.9 (U)	1.5 (U)	—	1.2 (U)	—	—
0540-95-1022	40-07008	0–0.5	SOIL	4.5 (U)	—	—	—	0.67 (U)	6790	—	—	100 (J-)	NA	—	—	—	—	—	—	1.5 (U)	—	1.2 (U)	—	—
0540-95-1025	40-07008	1.95–2.95	QBT3	4.6 (U)	—	241	—	—	3670	—	—	59.7 (J-)	NA	13.6	—	—	—	—	0.92 (U)	1.5 (U)	—	1.3 (U)	—	—
0540-95-1024	40-07008	3.9–4.9	QBT3	4.7 (U)	—	—	—	—	—	—	—	—	NA	—	—	—	—	—	0.94 (U)	1.6 (U)	—	1.3 (U)	—	—
0540-95-1026	40-07009	0–0.5	SOIL	6.4 (U)	—	—	—	0.85 (U)	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	—	—
0540-95-1028	40-07009	1.25–2.25	QBT3	5.9 (U)	—	751	—	—	2480	—	—	30.1	NA	20.9	—	—	—	—	—	—	—	—	—	—
0540-95-1027	40-07009	2.5–3.5	QBT3	6.7 (U)	—	—	—	—	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	—	—
0540-95-1029	40-07010	0–0.5	SOIL	5.6 (U)	—	—	—	0.74 (U)	—	—	—	28.3	NA	32.7	—	—	—	—	—	—	—	—	2.32	50.8
0540-95-1031	40-07010	1.65–2.65	QBT3	6.3 (U)	—	269	—	—	2780	—	—	26.6	NA	23.7	—	—	—	—	—	—	—	—	—	—
0540-95-1030	40-07010	3.3–4.3	QBT3	6.6 (U)	—	—	—	—	—	—	—	—	NA	30.8	—	—	—	—	—	—	—	—	—	—

Table 5.5-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Lead	Magnesium	Manganese	Mercury	Nickel	Selenium	Silver	Sodium	Thallium	Uranium	Zinc
Qbt 2, 3, 4 Background Value[a]				**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**na**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**0.3**	**1**	**2770**	**1.1**	**2.4**	**63.5**
Sediment Background Value[a]				**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**0.3**	**1**	**1470**	**0.73**	**2.22**	**60.2**
Soil Background Value[a]				**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**1.52**	**1**	**915**	**0.73**	**1.82**	**48.8**
Construction Worker SSL[c]				**124**	**65.4**	**4350**	**144**	**309**	**na**	**449**[d]	**34.6**[e]	**12,400**	**6190**	**800**	**na**	**463**	**92.9**[e]	**6190**	**1550**	**1550**	**na**	**20.4**	**929**	**92,900**
Industrial SSL[c]				**454**	**17.7**	**22,4000**	**2260**	**1120**	**na**	**2920**	**300**[f]	**45,400**	**22,700**	**800**	**na**	**145,000**	**310**[f]	**22,700**	**5680**	**5680**	**na**	**74.9**	**3410**	**341,000**
Residential SSL[c]				**31.3**	**3.9**	**15,600**	**156**	**77.9**	**na**	**219**	**23**[f]	**3130**	**1560**	**400**	**na**	**10,700**	**23**[f]	**1560**	**391**	**391**	**na**	**5.16**	**235**	**23,500**
0540-95-1032	40-07011	0–0.5	SOIL	5.5 (U)	—	—	—	0.73 (U)	—	—	—	50	NA	—	—	—	—	—	—	—	—	—	2.24	—
0540-95-1034	40-07011	1.65–2.65	QBT3	5.5 (U)	—	192	—	—	2410	—	—	15.4	NA	—	—	—	—	—	—	—	—	—	—	—
0540-95-1033	40-07011	3.3–4.3	QBT3	6.8 (U)	—	—	—	—	—	—	—	—	NA	38	—	—	—	—	0.31 (U)	—	—	—	—	—
0540-95-1035	40-07012	0–0.5	SOIL	6.2 (U)	—	—	—	0.82 (U)	—	—	—	15400	NA	44.9	—	—	—	—	—	2 (J)	—	—	5.86	1480
0540-95-1038	40-07012	1.65–2.65	QBT3	6.8 (U)	—	270	—	—	—	—	—	40.9	NA	33	—	—	—	—	0.31 (U)	—	—	—	4.39	—
0540-95-1037	40-07012	3.3–4.3	QBT3	6.5 (U)	—	—	—	—	—	—	—	7.4	NA	—	—	—	—	—	—	—	—	—	—	—
0540-95-1039	40-07013	0–0.5	SOIL	0.88 (J)	—	—	—	0.41 (J)	—	—	—	186	NA	—	—	—	—	—	—	—	—	—	2.1	103
0540-95-1041	40-07013	1.55–2.55	QBT3	0.52 (U)	—	260	—	—	3210	—	—	22.3	NA	—	—	—	—	—	0.51 (J)	—	—	—	—	—
0540-95-1040	40-07013	3.1–4.1	QBT3	0.62 (U)	2.9	—	—	—	—	—	—	—	NA	—	—	—	—	—	1.5	—	—	—	—	—
0540-95-1042	40-07014	0–0.5	SOIL	—	—	—	—	—	—	—	—	255	NA	96.1	—	—	—	—	—	—	—	—	1.92	101
0540-95-1044	40-07014	2.15–3.15	QBT3	0.52 (U)	3.1	342	—	—	3450	—	3.2 (J)	106	NA	28	—	—	—	—	0.4 (U)	—	—	—	—	83.7
0540-95-1043	40-07014	4.3–5.3	QBT3	0.63 (U)	—	—	—	—	—	—	—	9.1	NA	—	—	—	—	—	0.84 (J)	—	—	—	—	—
0540-95-1045	40-07015	0–0.5	SOIL	—	—	—	—	—	—	—	—	58.4	NA	—	—	—	—	—	—	—	—	—	1.91	—
0540-95-1047	40-07015	1.4–2.8	QBT3	0.53 (U)	—	259	—	—	3310	—	—	180	NA	—	—	—	—	—	0.59 (J)	—	—	—	—	—
0540-95-1046	40-07015	2.8–3.8	QBT3	0.6 (U)	—	—	—	—	—	—	—	—	NA	—	—	—	—	—	0.59 (J)	—	—	—	—	—
0540-95-1048	40-07016	0–0.5	SOIL	—	—	321	—	—	—	—	—	30.7	NA	—	—	—	—	—	—	—	—	—	6.06	—
0540-95-1051	40-07016	1.45–2.9	QBT3	0.52 (U)	—	329	—	—	2790	—	—	160	NA	—	—	—	—	—	0.42 (J)	—	—	—	18.1	—
0540-95-1050	40-07016	2.9–3.9	QBT3	0.57 (U)	—	141	—	—	—	—	—	33.6	NA	18.9	—	—	—	—	0.43 (U)	—	—	—	5.64	—
0540-95-1052	40-07017	0–0.5	SOIL	—	—	336	—	—	—	—	—	18.1 (J+)	NA	—	—	—	—	—	—	—	—	—	3.2	—
0540-95-1054	40-07017	0.08–0.29	SOIL	—	—	601	—	0.68	—	—	—	28.6 (J+)	NA	—	—	—	—	—	—	—	—	—	5.5	85.2 (J+)
0540-95-1053	40-07017	0.42–0.58	SOIL	—	—	—	—	0.5 (J)	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	3.8	—
0540-95-1055	40-07018	0–0.5	SOIL	—	—	351	—	—	—	—	—	70 (J+)	NA	—	—	—	—	—	—	—	—	—	3.4	55.5 (J+)
0540-95-1057	40-07018	1–1.5	SOIL	—	—	386	—	—	—	—	—	211 (J+)	NA	22.4	—	—	—	—	—	—	—	—	3	119 (J+)
0540-95-1056	40-07018	1.5–2	SOIL	—	—	—	—	0.64	—	—	—	19.8 (J+)	NA	—	—	—	—	—	—	—	—	—	3.9	50.7 (J+)
0540-95-1058	40-07019	0–0.5	SOIL	—	—	—	—	0.67	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	5	—
0540-95-1060	40-07019	0.92–1.58	SOIL	—	—	—	—	0.49 (J)	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	4.7	—
0540-95-1059	40-07019	3–3.25	SOIL	—	—	—	—	0.47 (J)	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	3.8	—
0540-95-1064	40-07020	0–0.41	SOIL	—	—	—	—	0.54	—	—	—	66.4 (J+)	NA	—	—	—	—	—	—	—	—	—	7.4	67.2 (J+)
0540-95-1061	40-07020	0–0.5	SOIL	—	—	—	—	0.8	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	8.4	52.2 (J+)
0540-95-1063	40-07020	0.42–0.83	QBT3	—	—	92.4	—	—	—	—	—	10.6 (J+)	NA	—	—	—	—	—	—	—	—	—	5.8	—
0540-95-1065	40-07021	0–0.5	SED	—	—	315	—	0.73	—	—	—	26.2 (J+)	NA	26.7	—	—	—	—	—	—	—	—	9.3	—

Table 5.5-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Lead	Magnesium	Manganese	Mercury	Nickel	Selenium	Silver	Sodium	Thallium	Uranium	Zinc
Qbt 2, 3, 4 Background Value[a]				**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**na**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**0.3**	**1**	**2770**	**1.1**	**2.4**	**63.5**
Sediment Background Value[a]				**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**0.3**	**1**	**1470**	**0.73**	**2.22**	**60.2**
Soil Background Value[a]				**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**1.52**	**1**	**915**	**0.73**	**1.82**	**48.8**
Construction Worker SSL[c]				**124**	**65.4**	**4350**	**144**	**309**	**na**	**449**[d]	**34.6**[e]	**12,400**	**6190**	**800**	**na**	**463**	**92.9**[e]	**6190**	**1550**	**1550**	**na**	**20.4**	**929**	**92,900**
Industrial SSL[c]				**454**	**17.7**	**22,4000**	**2260**	**1120**	**na**	**2920**	**300**[f]	**45,400**	**22,700**	**800**	**na**	**145,000**	**310**[f]	**22,700**	**5680**	**5680**	**na**	**74.9**	**3410**	**341,000**
Residential SSL[c]				**31.3**	**3.9**	**15,600**	**156**	**77.9**	**na**	**219**	**23**[f]	**3130**	**1560**	**400**	**na**	**10,700**	**23**[f]	**1560**	**391**	**391**	**na**	**5.16**	**235**	**23,500**
0540-95-1067	40-07021	0.83–1.5	SOIL	—	—	—	—	0.55	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	5.5	—
0540-95-1066	40-07021	3–3.67	SOIL	—	—	—	—	0.52	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	5	—
0540-95-1068	40-07022	0–0.5	SOIL	—	—	—	—	0.63	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	5.7	—
0540-95-1070	40-07022	0.83–1.5	SOIL	—	—	—	—	0.59	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	3.8	—
0540-95-1069	40-07022	3–3.67	SOIL	—	—	—	—	0.53	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	4.7	—
0540-95-1071	40-07023	0–0.5	SOIL	—	—	—	—	0.53 (J)	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	4.8	49.2 (J+)
0540-95-1073	40-07023	0.25–1	SOIL	—	—	—	—	0.78	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	4.7	—
0540-95-1072	40-07023	1–1.67	SOIL	—	—	—	—	0.82	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	4.5	—
0540-95-1077	40-07024	0–0.41	SOIL	—	—	—	—	0.63	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	5.7	—
0540-95-1074	40-07024	0–0.5	SOIL	—	—	—	—	0.66	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	6.7	—
0540-95-1076	40-07024	0.42–0.83	SOIL	—	—	—	—	—	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	5.2	—
0540-95-1078	40-07025	0–0.5	SED	5.94 (U)	—	—	—	0.594 (U)	—	—	—	—	NA	—	—	—	—	—	0.302 (U)	—	—	—	3.42	—
0540-95-1080	40-07025	1–1.5	SOIL	5.09 (U)	—	—	—	0.509 (U)	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	2.37	—
0540-95-1079	40-07025	1.5–1.92	SOIL	5.09 (U)	—	—	—	0.509 (U)	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	2.11	—
0540-95-1081	40-07026	0–0.5	SED	6.93 (U)	—	—	—	0.693 (U)	—	—	—	15.3 (J-)	NA	—	—	—	—	13	0.345 (U)	1.66	—	—	—	—
0540-95-1083	40-07026	0.58–1.17	SED	6.72 (U)	—	—	—	0.672 (U)	—	—	—	—	NA	—	—	—	—	11.6	0.343 (U)	1.8	—	—	2.51	—
0540-95-1082	40-07026	1.17–1.67	SED	6.9 (U)	—	—	—	0.69 (U)	—	—	—	—	NA	—	—	—	—	9.83	0.346 (U)	—	—	—	2.39	—
0540-95-1084	40-07027	0–0.5	SED	6.86 (U)	—	—	—	1.86	—	—	—	27.2 (J-)	NA	—	—	—	0.11 (J)	33	0.335 (U)	5.37	—	—	3.73	—
0540-95-1086	40-07027	0.25–0.67	SOIL	5.23 (U)	—	—	—	0.921	—	—	—	—	NA	—	—	—	—	21.4	—	1.45	—	—	2.15	—
0540-95-1085	40-07027	0.67–1.08	SOIL	5.04 (U)	—	—	—	0.504 (U)	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	2.34	—
0540-95-1087	40-07028	0–0.5	SED	6.12 (U)	—	—	—	0.612 (U)	—	—	—	—	NA	—	—	—	—	10.2	0.306 (U)	1.24	—	—	2.56	—
0540-95-1090	40-07028	0.33–0.83	SOIL	5.88 (U)	—	—	—	1.02	—	—	—	15.7 (J-)	NA	—	—	—	—	18.6	—	2.38	—	—	2.49	—
0540-95-1089	40-07028	0.83–1.67	SOIL	6.25 (U)	—	—	—	0.638	—	—	—	17.5 (J-)	NA	—	—	—	—	18.6	—	1.16	—	—	2.83	—
0540-95-1091	40-07029	0–0.5	SOIL	6.13 (U)	—	—	—	1.67	—	20.4	10.1	16.9 (J-)	NA	—	—	726	—	35.8	—	2.33	—	—	2.68	—
0540-95-1093	40-07029	0.25–0.58	SOIL	6.72 (U)	—	—	—	2.55	—	—	—	17.6 (J-)	NA	—	—	—	—	46	—	4.84	—	—	2.82	—
0540-95-1092	40-07029	0.58–1.17	SOIL	6.06 (U)	—	—	—	0.93	—	—	—	—	NA	—	—	—	—	22.2	—	1.84	—	—	3.65	—
0540-95-1094	40-07030	0–0.5	SED	6.07 (U)	—	—	—	0.719	—	—	—	19.5 (J-)	NA	—	—	—	—	17.6	0.309 (U)	1.99	—	—	2.66	—
0540-95-1096	40-07030	0.25–0.75	SOIL	6.4 (U)	—	—	—	0.804	—	—	—	35.7 (J-)	NA	—	—	—	—	19.2	—	2.48	—	—	2.68	63.2
0540-95-1095	40-07030	0.75–1.33	SOIL	7.66 (U)	—	—	—	1.63	—	—	—	52 (J-)	NA	—	—	—	0.116 (J)	31.1	—	3.3	—	—	1.98	60.6
0540-95-1097	40-07031	0–0.5	SED	5.74 (U)	—	—	—	0.589	—	—	—	46.9 (J-)	NA	—	—	—	—	11.2	—	1.39	—	—	2.58	—
0540-95-1099	40-07031	1.13–1.75	SOIL	6.71 (U)	—	—	—	1	—	—	—	35.2 (J-)	NA	—	—	—	—	18.1	—	2.38	—	—	2.98	—

Table 5.5-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Lead	Magnesium	Manganese	Mercury	Nickel	Selenium	Silver	Sodium	Thallium	Uranium	Zinc
Qbt 2, 3, 4 Background Value[a]				**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**na**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**0.3**	**1**	**2770**	**1.1**	**2.4**	**63.5**
Sediment Background Value[a]				**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**0.3**	**1**	**1470**	**0.73**	**2.22**	**60.2**
Soil Background Value[a]				**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**1.52**	**1**	**915**	**0.73**	**1.82**	**48.8**
Construction Worker SSL[c]				**124**	**65.4**	**4350**	**144**	**309**	**na**	**449**[d]	**34.6**[e]	**12,400**	**6190**	**800**	**na**	**463**	**92.9**[e]	**6190**	**1550**	**1550**	**na**	**20.4**	**929**	**92,900**
Industrial SSL[c]				**454**	**17.7**	**22,4000**	**2260**	**1120**	**na**	**2920**	**300**[f]	**45,400**	**22,700**	**800**	**na**	**145,000**	**310**[f]	**22,700**	**5680**	**5680**	**na**	**74.9**	**3410**	**341,000**
Residential SSL[c]				**31.3**	**3.9**	**15,600**	**156**	**77.9**	**na**	**219**	**23**[f]	**3130**	**1560**	**400**	**na**	**10,700**	**23**[f]	**1560**	**391**	**391**	**na**	**5.16**	**235**	**23,500**
0540-95-1098	40-07031	1.75–2.25	SOIL	7.12 (U)	—	—	—	1.63	—	—	—	37.9 (J-)	NA	—	—	—	—	24.2	—	2.2	—	—	2.82	51.5
0540-95-1100	40-07032	0–0.5	SED	5.7 (U)	—	137	—	0.57 (U)	—	—	6.53	—	NA	—	—	742	—	11.1	—	1.39	—	—	3.1	—
0540-95-1103	40-07032	0.25–0.67	SOIL	6.31 (U)	—	—	—	0.916	—	—	—	19.8 (J-)	NA	—	—	—	—	21	—	2.19	—	—	2.3	—
0540-95-1102	40-07032	0.67–1.17	SOIL	6.56 (U)	—	—	—	0.744	—	—	—	15.4 (J-)	NA	—	—	—	—	15.5	—	2.47	—	—	1.94	—
0540-95-1104	40-07033	1.83–2.5	SOIL	6.7 (U)	—	—	—	0.71 (U)	—	—	—	—	0.68 (U)	—	—	—	—	—	—	1.2 (J)	—	—	2.21	—
0540-95-1105	40-07034	0.17–1	SED	6.4 (U)	—	—	—	0.68 (U)	—	—	—	—	—	—	—	—	—	—	—	1.7 (J)	—	—	2.64	—
0540-95-1106	40-07035	0.17–0.83	SED	6.9 (U)	—	—	—	0.74 (U)	—	—	—	—	—	—	—	—	—	11.7	0.31 (U)	—	—	—	2.62	—
0540-95-1107	40-07036	0.33–0.83	SED	6.5 (U)	—	—	—	0.69 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.33	—
0540-95-1109	40-07037	0.17–1	SED	7.4 (U)	—	—	—	0.91 (J)	—	—	—	14.4	—	—	—	—	—	16	0.33 (U)	2.9	—	—	2.45	—
0540-95-1110	40-07038	1.33–2	SED	6.6 (U)	—	—	—	0.7 (U)	—	—	—	—	—	—	—	—	—	10.7	—	—	—	—	—	—
0540-95-1111	40-07039	0.17–0.83	SED	6.8 (U)	—	—	—	0.73 (U)	—	—	—	—	—	—	—	—	—	—	0.38 (U)	1.8 (J)	—	—	2.24	—
0540-95-1112	40-07040	1–2	SED	6.3 (U)	—	—	—	0.67 (U)	—	—	—	161	—	—	—	—	—	—	—	—	—	—	2.68	—
0540-95-1113	40-07041	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	3.55	—
0540-95-1115	40-07042	0–0.5	SOIL	—	—	—	—	—	9070	—	—	16.4 (U)	NA	31.9	—	1280 (J+)	—	—	2	—	—	—	4.47	—
0540-95-1116	40-07043	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	5.77	—
0540-95-1117	40-07044	0–0.5	SOIL	—	—	—	—	—	6910	—	—	—	NA	23.4	—	924 (J+)	—	—	1.7	—	—	—	3.48	—
0540-95-1118	40-07045	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	NA	27.2	—	745 (J+)	—	—	—	—	—	—	9.1	—
0540-95-1119	40-07046	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	NA	—	—	697 (J+)	—	—	—	—	—	—	3.38	—
0540-95-1120	40-07047	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	2.76	—
0540-95-1121	40-07048	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	NA	—	—	—	—	—	—	—	—	—	3.83	—

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

[a] BVs are from LANL 1998, 059730.

[b] na = not available.

[c] SSLs are from NMED 2009, 108070, unless otherwise noted.

[d] SSLs are for hexavalent chromium.

[e] 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).

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

[g] — = Not detected or not above BV.

[h] NA = Not analyzed.

Table 5.5-3
Organic Chemicals Detected at SWMU 40-006(a)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	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	Butylbenzylphthalate	Chrysene	Dibenz(a,h)anthracene	Di-n-butylphthalate	Dinitrotoluene[2,4-]	Fluoranthene	Fluorene	HMX	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Phenol	Pyrene	Trinitrobenzene[1,3,5-]
Construction Worker SSL[a]				**18,600**	**601[b]**	**601[b]**	**66,800**	**213**	**21.3**	**213**	**6680[c]**	**2060**	**952,000[b]**	**4760**	**47,600[b]**	**20,600**	**21.3**	**23,800**	**476**	**8910**	**8910**	**11,900**	**213**	**702**	**7150**	**68,800**	**6680**	**8760[b]**
Industrial SSL[a]				**36,700**	**1900[d]**	**2000[d]**	**183,000**	**23.4**	**2.34**	**23.4**	**18300[c]**	**234**	**2,500,000[d]**	**1370**	**9100[d]**	**2340**	**2.34**	**68400**	**103**	**24,400**	**24,400**	**34,200**	**23.4**	**252**	**20,500**	**205,000**	**18,300**	**27,000[d]**
Residential SSL[a]				**3440**	**150[d]**	**150[d]**	**17,200**	**6.21**	**0.621**	**6.21**	**1720[c]**	**62.1**	**240,000[d]**	**347**	**2600[d]**	**621**	**0.621**	**6110**	**15.7**	**2290**	**2290**	**3060**	**6.21**	**45**	**1830**	**18,300**	**1720**	**2200[d]**
0540-95-1000	40-07001	0–0.5	SOIL	—[e]	—	—	—	—	—	—	—	—	—	—	—	—	—	0.097 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1002	40-07001	6.75–7.75	QBT3	—	—	—	—	—	—	—	—	—	0.033 (J)	—	—	—	—	0.065 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1001	40-07001	13.5–14.5	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.033 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1003	40-07002	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.099 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1005	40-07002	2–3	SOIL	—	—	—	—	—	—	—	—	—	0.031 (J)	—	—	—	—	0.063 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1004	40-07002	4–5	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.065 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1006	40-07003	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.099 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1007	40-07003	0.5–1.5	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.066 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1008	40-07003	2.5–3.5	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.071 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1009	40-07004	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.066 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1012	40-07004	1.75–2.75	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.065 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1011	40-07004	3.5–4.5	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.066 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1013	40-07005	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	0.32 (J)	—	—	—	—	—	—	—	5.4	—	—	—	—	—	—
0540-95-1016	40-07006	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	38	—	—	—	—	—	—
0540-95-1018	40-07006	1.5–2.5	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.1	—	—	—	—	—	—
0540-95-1017	40-07006	3–4	QBT3	0.9	—	—	0.56	2	1.6	1.6	0.78	0.9	—	—	—	2	0.48	—	—	2.7	0.23 (J)	—	0.84	0.22 (J)	2.1	—	3	—
0540-95-1019	40-07007	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	0.18 (J)	—	—	—	—	—	—	—	0.0085	—	—	—	—	—	—
0540-95-1029	40-07010	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	0.057 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0540-95-1034	40-07011	1.65–2.65	QBT3	—	—	—	—	—	—	0.061 (J)	—	0.045 (J)	—	—	—	0.13 (J)	—	—	—	0.13 (J)	—	—	—	—	—	—	0.055 (J)	—
0540-95-1033	40-07011	3.3–4.3	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.234	—	—	—	—	—	—	—	—	—
0540-95-1035	40-07012	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.273	—	—	—	—	—	—
0540-95-1038	40-07012	1.65–2.65	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.643	—	—	—	—	—	—
0540-95-1039	40-07013	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	0.047 (J)	—	—	—	—	—	—	—	1.18	—	—	—	0.072 (J)	—	—
0540-95-1041	40-07013	1.55–2.55	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.546	—	—	—	—	—	—
0540-95-1042	40-07014	0–0.5	SOIL	—	0.091	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.358	—	—	—	—	—	—
0540-95-1043	40-07014	4.3–5.3	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.151	—	—	—	—	—	—	—	—	—

Table 5.5-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	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	Butylbenzylphthalate	Chrysene	Dibenz(a,h)anthracene	Di-n-butylphthalate	Dinitrotoluene[2,4-]	Fluoranthene	Fluorene	HMX	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Phenol	Pyrene	Trinitrobenzene[1,3,5-]
Construction Worker SSL[a]				**18,600**	**601[b]**	**601[b]**	**66,800**	**213**	**21.3**	**213**	**6680[c]**	**2060**	**952,000**	**4760**	**47,600[b]**	**20,600**	**21.3**	**23,800**	**476**	**8910**	**8910**	**11,900**	**213**	**702**	**7150**	**68,800**	**6680**	**8760[b]**
Industrial SSL[a]				**36,700**	**1900[d]**	**2000[d]**	**183,000**	**23.4**	**2.34**	**23.4**	**18300[c]**	**234**	**2,500,000[d]**	**1370**	**9100[d]**	**2340**	**2.34**	**68,400**	**103**	**24,000**	**24,400**	**34,200**	**23.4**	**252**	**20,500**	**205,000**	**18,300**	**27,000[d]**
Residential SSL[a]				**3440**	**150[d]**	**150[d]**	**17,200**	**6.21**	**0.621**	**6.21**	**1720[c]**	**62.1**	**240,000[d]**	**347**	**2600[d]**	**621**	**0.621**	**6110**	**15.7**	**2290**	**2290**	**3060**	**6.21**	**45**	**1830**	**18,300**	**1720**	**2200[d]**
0540-95-1045	40-07015	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	0.039 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0540-95-1048	40-07016	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	0.04 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0540-95-1050	40-07016	2.9–3.9	QBT3	—	—	—	—	—	—	—	—	—	—	0.051 (J)	—	—	—	—	0.058	—	—	—	—	—	—	—	—	—
0540-95-1055	40-07018	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	0.12 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0540-95-1064	40-07020	0–0.41	SOIL	—	—	—	—	—	—	—	0.18 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0540-95-1065	40-07021	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.056 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1067	40-07021	0.83–1.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.048 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1066	40-07021	3–3.67	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.037 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1068	40-07022	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.067 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1072	40-07023	1–1.67	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.045 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1077	40-07024	0–0.41	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.046 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1076	40-07024	0.42–0.83	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.065 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1078	40-07025	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	0.046 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
0540-95-1080	40-07025	1–1.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	0.038 (J)	—	—	0.036 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1079	40-07025	1.5–1.92	SOIL	—	—	—	—	—	—	—	—	—	—	—	0.041 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
0540-95-1081	40-07026	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	0.066 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
0540-95-1083	40-07026	0.58–1.17	SED	—	—	—	—	—	—	—	—	—	—	—	0.048 (J)	—	—	—	—	—	—	0.193	—	—	—	—	—	—
0540-95-1082	40-07026	1.17–1.67	SED	—	—	—	—	—	—	—	—	—	—	—	0.049 (J)	—	—	0.061 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1084	40-07027	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.052 (J)	—	—	—	—	—	—	—	—
0540-95-1090	40-07028	0.33–0.83	SOIL	—	—	—	—	—	—	—	—	—	0.14 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0540-95-1096	40-07030	0.25–0.75	SOIL	—	—	—	—	—	—	—	—	—	0.86 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0540-95-1095	40-07030	0.75–1.33	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.051 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1098	40-07031	1.75–2.25	SOIL	—	—	—	—	—	—	—	—	—	0.15 (J)	—	—	—	—	0.18 (J)	—	—	—	—	—	—	—	—	—	—
0540-95-1113	40-07041	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	0.13 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0540-95-1115	40-07042	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	0.35 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.37
0540-95-1116	40-07043	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	0.21 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0540-95-1117	40-07044	0–0.5	SOIL	—	1	1	—	—	—	—	—	—	0.14 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 5.5-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	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	Butylbenzylphthalate	Chrysene	Dibenz(a,h)anthracene	Di-n-butylphthalate	Dinitrotoluene[2,4-]	Fluoranthene	Fluorene	HMX	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Phenol	Pyrene	Trinitrobenzene[1,3,5-]
Construction Worker SSL[a]				**18,600**	**601[b]**	**601[b]**	**66,800**	**213**	**21.3**	**213**	**6680[c]**	**2060**	**952,000**	**4760**	**47,600[b]**	**20,600**	**21.3**	**23,800**	**476**	**8910**	**8910**	**11,900**	**213**	**702**	**7150**	**68,800**	**6680**	**8760[b]**
Industrial SSL[a]				**36,700**	**1900[d]**	**2000[d]**	**183,000**	**23.4**	**2.34**	**23.4**	**18300[c]**	**234**	**2,500,000[d]**	**1370**	**9100[d]**	**2340**	**2.34**	**68,400**	**103**	**24,000**	**24,400**	**34,200**	**23.4**	**252**	**20,500**	**205,000**	**18,300**	**27,000[d]**
Residential SSL[a]				**3440**	**150[d]**	**150[d]**	**17,200**	**6.21**	**0.621**	**6.21**	**1720[c]**	**62.1**	**240,000[d]**	**347**	**2600[d]**	**621**	**0.621**	**6110**	**15.7**	**2290**	**2290**	**3060**	**6.21**	**45**	**1830**	**18,300**	**1720**	**2200[d]**
0540-95-1118	40-07045	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	0.29 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
0540-95-1119	40-07046	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	0.13 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

[a] SSLs are from NMED 2009, 108070, unless otherwise noted.

[b] 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).

[c] Pyrene used as a surrogate based on structure al similarity.

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

[e] — = Not detected.

Table 5.5-4
Radionuclides Detected or Detected above BVs/FVs at SWMU 40-006(a)

Sample ID	Location ID	Depth (ft)	Media	Cesium-137	Cobalt-60	Strontium-90
Qbt 2, 3, 4 Background Value[a]				**na**[b]	**na**	**na**
Sediment Background Value[a]				**0.9**[c]	**na**	**1.04**[c]
Soil Background Value[a]				**1.65**[c]	**na**	**1.31**[c]
Construction Worker SAL[d]				**18**	**4.1**	**800**
Industrial SAL[d]				**23**	**5.1**	**1900**
Residential SAL[d]				**5.6**	**1.3**	**5.7**
0540-95-1018	40-07006	1.5–2.5	QBT3	—[e]	—	1
0540-95-1024	40-07008	3.9–4.9	QBT3	—	—	0.52
0540-95-1044	40-07014	2.15–3.15	QBT3	0.088	—	—
0540-95-1051	40-07016	1.45–2.9	QBT3	0.09	—	2.01
0540-95-1050	40-07016	2.9–3.9	QBT3	0.229	—	—
0540-95-1057	40-07018	1–1.5	SOIL	0.17	—	—
0540-95-1063	40-07020	0.42–0.83	QBT3	0.29	—	—
0540-95-1069	40-07022	3–3.67	SOIL	0.27	—	—
0540-95-1087	40-07028	0–0.5	SED	—	0.148	—
0540-95-1095	40-07030	0.75–1.33	SOIL	0.489	—	—
0540-95-1097	40-07031	0–0.5	SED	—	—	2.45
0540-95-1099	40-07031	1.13–1.75	SOIL	0.273	—	—
0540-95-1098	40-07031	1.75–2.25	SOIL	0.843	—	—
0540-95-1104	40-07033	1.83–2.5	SOIL	0.077	—	—
0540-95-1118	40-07045	0–0.5	SOIL	2.54	—	—

Notes: Results are in pCi/g.
[a] BVs/FVs are from LANL 1998, 059730.
[b] Na = not available.
[c] FV applies only to samples collected from 0–1 ft.
[d] SALs from LANL 2009, 107655.
[e] — = Not detected or not detected above BV/FV.

Table 5.12-1
Samples Collected and Analyses Requested at SWMU 40-009

Sample ID	Location ID	Depth (ft)	Media	Gamma Spectroscopy	H3	HE	Metals	Stronium -90	SVOC	Uranium
0540-95-1122	40-07049	0–0.5	SOIL	531	531	529	530	531	528	531
0540-95-1124	40-07049	1.5–2	SOIL	531	—*	529	530	531	528	531
0540-95-1123	40-07049	3.67–4	SOIL	531	—	529	530	531	528	531
0540-95-1125	40-07050	0–0.5	SOIL	531	—	529	530	531	528	531
0540-95-1127	40-07050	0.83–1.5	SOIL	531	—	529	530	531	528	531
0540-95-1126	40-07050	2.33–3	SOIL	531	—	529	530	531	528	531
0540-95-1128	40-07051	0–0.5	SED	531	—	529	530	531	528	531
0540-95-1130	40-07051	2–2.67	SOIL	531	—	529	530	531	528	531
0540-95-1129	40-07051	3–3.5	SOIL	531	—	529	530	531	528	531
0540-95-1131	40-07052	0–0.5	SOIL	531	—	529	530	531	528	531
0540-95-1134	40-07052	1.5–2	SOIL	531	—	529	530	531	528	531
0540-95-1133	40-07052	5.25–5.58	SOIL	531	—	529	530	531	528	531
0540-95-1135	40-07053	0–0.5	SOIL	531	—	529	530	531	528	531
0540-95-1137	40-07053	1–1.5	SOIL	531	—	529	530	531	528	531
0540-95-1136	40-07053	2–2.33	SOIL	531	—	529	530	531	528	531
0540-95-1138	40-07054	0–0.5	SOIL	531	—	529	530	531	528	531
0540-95-1140	40-07054	0.33–0.67	SOIL	531	—	529	530	531	528	531
0540-95-1139	40-07054	1–1.5	SOIL	531	—	529	530	531	528	531

Note: Numbers in analyte columns are request numbers.

* — = Analysis not requested.

Table 5.12-2
Inorganic Chemicals above BVs at SWMU 40-009

Sample ID	Location ID	Depth (ft)	Media	Antimony	Beryllium	Cadmium	Copper	Lead	Silver	Uranium	Zinc
Soil Background Value[a]				**0.83**	**1.83**	**0.4**	**14.7**	**22.3**	**1**	**1.82**	**48.8**
Sediment Background Value[a]				**0.83**	**1.31**	**0.4**	**11.2**	**19.7**	**1**	**2.22**	**60.2**
Construction Worker SSL[b]				**124**	**144**	**309**	**12400**	**800**	**1550**	**929**	**92,900**
Industrial SSL[b]				**454**	**2260**	**1120**	**45,400**	**800**	**5680**	**3410**	**341,000**
Residential SSL[b]				**31.3**	**156**	**77.9**	**3130**	**400**	**391**	**235**	**23,500**
0540-95-1122	40-07049	0–0.5	SOIL	11.3 (U)	3.3 (J-)	22	2650	193	1.2 (U)	1.96	1360
0540-95-1124	40-07049	1.5–2	SOIL	12.6 (U)	—[c]	1.4	199	61.3	1.4 (U)	—	188
0540-95-1123	40-07049	3.67–4	SOIL	11.8 (U)	—	3	407	187	1.3 (U)	—	314
0540-95-1125	40-07050	0–0.5	SOIL	12.7 (U)	—	0.69 (U)	17.2	—	1.4 (U)	1.86	92.3
0540-95-1127	40-07050	0.83–1.5	SOIL	11.8 (U)	—	0.65 (U)	—	—	1.3 (U)	—	—
0540-95-1126	40-07050	2.33–3	SOIL	NA[d]	NA	NA	NA	—	1.3 (U)	—	NA
0540-95-1128	40-07051	0–0.5	SED	11.7 (U)	—	0.64 (U)	—	—	1.3 (U)	—	—
0540-95-1130	40-07051	2–2.67	SOIL	12.7 (U)	—	0.7 (U)	—	—	1.4 (U)	—	—
0540-95-1129	40-07051	3–3.5	SOIL	12.2 (U)	—	0.67 (U)	—	—	1.3 (U)	—	—
0540-95-1131	40-07052	0–0.5	SOIL	11.4 (U)	—	0.62 (U)	202	—	1.2 (U)	—	106
0540-95-1134	40-07052	1.5–2	SOIL	12.4 (U)	—	0.68 (U)	124	30.8	1.4 (U)	—	108
0540-95-1133	40-07052	5.25–5.58	SOIL	11.8 (U)	—	0.65 (U)	60.5	—	1.3 (U)	—	78.8
0540-95-1135	40-07053	0–0.5	SOIL	11.8 (U)	—	0.65 (U)	—	—	1.3 (U)	4.08	—
0540-95-1137	40-07053	1–1.5	SOIL	11.6 (U)	—	0.64 (U)	—	—	1.3 (U)	—	—
0540-95-1136	40-07053	2–2.33	SOIL	11.8 (U)	—	0.65 (U)	—	—	1.3 (U)	2.1	—
0540-95-1138	40-07054	0–0.5	SOIL	12.2 (U)	—	0.67 (U)	—	—	1.3 (U)	2.11	—
0540-95-1140	40-07054	0.33–0.67	SOIL	12 (U)	—	0.66	—	—	1.3 (U)	—	—
0540-95-1139	40-07054	1–1.5	SOIL	11.7 (U)	—	0.76 (J)	—	—	1.3 (U)	—	—

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

[a] BVs are from LANL 1998, 059730.

[b] SSLs are from NMED 2009, 108070.

[c] — = Not detected or not above BV.

[d] NA = Not analyzed.

Table 5.12-3
Organic Chemicals Detected at SWMU 40-009

Sample ID	Location ID	Depth (ft)	Media	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Di-n-octylphthalate	RDX	Tetryl
Construction Worker SSL[a]				**21.3**	**213**	**2060**	**952,000**[b]	**4760**	**4760**[b]	**715**	**953**
Industrial SSL[a]				**2.34**	**23.4**	**234**	**2,500,000**[c]	**1370**	**25,000**[d]	**174**	**2740**
Residential SSL[a]				**0.621**	**6.21**	**62.1**	**240,000**[c]	**347**	**2400**[d]	**44.2**	**244**
0540-95-1122	40-07049	0–0.5	SOIL	0.053 (J)	0.045 (J)	0.058 (J)	0.43 (J)	0.36 (J)	0.1 (J)	—[e]	9.5
0540-95-1124	40-07049	1.5–2	SOIL	—	—	—	—	2	0.23 (J)	—	—
0540-95-1123	40-07049	3.67–4	SOIL	—	—	—	0.5 (J)	0.36	—	9.6	0.73
0540-95-1139	40-07054	1–1.5	SOIL	—	—	—	—	0.045 (J)	—	—	—

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

[a] SSLs are from NMED 2009, 108070, unless otherwise noted.

[b] 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).

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

[d] SSLs are from EPA 2007, 099314.

[e] — = Not detected.

Table 5.12-4
Radionuclides Detected or Detected above BVs/FVs at SWMU 40-009

Sample ID	Location ID	Depth (ft)	Media	Cesium-137	Strontium-90
Soil Background Value[a]				**1.65**[b]	**1.31**[b]
Construction Worker SAL[c]				**18**	**800**
Industrial SAL[c]				**23**	**1900**
Residential SAL[c]				**5.6**	**5.7**
0540-95-1124	40-07049	1.5–2	SOIL	0.195	—[d]
0540-95-1123	40-07049	3.67–4	SOIL	0.22	0.92
0540-95-1127	40-07050	0.83–1.5	SOIL	0.189	—
0540-95-1130	40-07051	2–2.67	SOIL	0.215	0.61
0540-95-1135	40-07053	0–0.5	SOIL	—	1.43
0540-95-1137	40-07053	1–1.5	SOIL	0.117	—
0540-95-1136	40-07053	2–2.33	SOIL	0.245	—

Notes: Results are in pCi/g.

[a] BVs/FVs are from LANL 1998, 059730.

[b] FV applies only to samples collected from 0–1 ft.

[c] SALs from LANL 2009, 107655.

[d] — = Not detected or not detected above BV/FV.

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
bgs	below ground surface
BHB	b-hydroxybutyric acid
BHC	benzene hexachloride
BMP	best management practice
BV	background value
CEARP	Comprehensive Environmental Assessment and Response Program
Consent Order	Compliance Order on Consent
CST	Chemical Science and Technology
D&D	decontamination and decommissioning
DDE	dichlorophenyltrichloroethylene
DDT	dichlorodiphenyltrichloroethane
DOE	Department of Energy (U.S.)
EC	expedited cleanup
EP	Environmental Programs (Directorate)
EPA	Environmental Protection Agency (U.S.)
ER ID	Environmental Remediation and Surveillance Program identification number
FV	fallout value
HE	high explosives
HIR	historical investigation report
HMX	high-melting explosive or 1,3,5,7-tetranitro-1,3,5,7-tetrazocine
HWFP	Hazardous Waste Facility Permit
LANL	Los Alamos National Laboratory (the 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
PETN	pentaerythritol tetranitrate
PID	photoionization detector

RCRA	Resource Conservation and Recovery Act
RDX	research department explosive or hexahydro-1,3,5-trinitro-1,3,5-triazine
RFI	RCRA facility investigation
RPF	Records Processing Facility
SAA	satellite accumulation area
SMO	Sample Management Office
SVOC	semivolatile organic compound
SWMU	solid waste management unit
SWSC	Sanitary Wastewater Systems Consolidation
TA	technical area
TD	Trap Door (site)
VCA	voluntary corrective action
VCP	vitrified-clay pipe
VOC	volatile organic compound

A-2.0 METRIC CONVERSION TABLE

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

A-3.0 DATA QUALIFIER DEFINITIONS

Data Qualifier	Definition
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

Starmer/Upper Pajarito Canyon Aggregate Area
Analytical Data (on CD included with this document)